TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

Vol. 11 – Cyperaceae

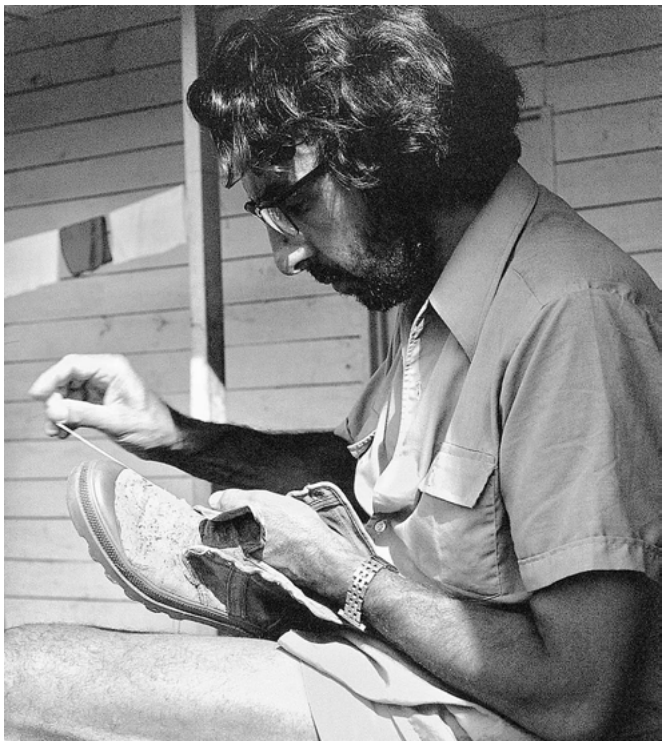
J.-P. LEBRUN
A. L. STORK

Conservatoire
et Jardin botaniques
de Genève
2020

TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

VOL. 11: CYPERACEAE



This volume is dedicated to the memory of Jean Raynal (1933–1979), an eminent French specialist of the family Cyperaceae (biography in Adansonia, Sér. 2, 19: 251–256, 1980).

Cover page illustration: *Scirpoides holoschoenus (L.) Soják*, photograph by Florian Mombrial; *Cyperaceae* are rarely photographed. This picture of a common species was chosen by us for its beauty.

Back cover illustration: *Pycreus demangei* J. Raynal [syn.: *Cyperus demangei* (J. Raynal) Lye] is an annual herb with submerged leaves and emergent inflorescences. It grows in seasonal pools or flooded plains and pans scattered over the African continent (See p. 288 and map p. 287). Drawing by Aline Raynal-Roques who generously offered us the use of her art work, and donated all her drawings of *Cyperaceae* to the Conservatoire et Jardin botaniques de la Ville de Genève as well.

JEAN-PIERRE LEBRUN – ADÉLAÏDE L. STORK

TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

VOL. 11: CYPERACEAE

VILLE DE GENÈVE
ÉDITIONS DES CONSERVATOIRE ET JARDIN BOTANIQUES
Genève, octobre 2020

www.cjb-geneve.ch

Une institution
Ville de Genève

VILLE DE GENÈVE

Conservatoire et Jardin botaniques Genève

Directeur:
Pierre-André Loizeau

Rédacteur des publications:
Martin W. Callmander

Rédacteur de ce volume:
Cyrille Chatelain

Réalisation technique:
Mathieu Christe

Publication hors-série nº 9j

ISBN: 978-2-8277-0138-4

TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

Vol. 11: Cyperaceae

CONTENTS

Jean Raynal collecting Dicraeanthus africanus Engl. (Podostemaceae) above the Koudini Falls, Cameroon, on the 6th of December, 1964. Photograph: A. Raynal-Roques.

He was killed in a car accident on the 12th of October, 1979, between Niamey and Dosso (Niger). The remains of the car are seen below. Photograph: E. Boudouresque, comm. A. Raynal-Roques.

ACKNOWLEDGEMENTS

First of all we wish to thank the Director of the Conservatoire et Jardin botaniques of Geneva, Dr. P.-A. Loizeau, for offering us excellent working facilities. We are also most indebted to Dr. M. Callmander, Curator of the Library and Editor of publications, for his interest in our work and his support, and to the whole Staff of the Library for their infatigable help with literature research. We extend our thanks to Mr. N. Fumeaux for his never-failing assistance in solving nomenclatural problems.

We are also most grateful to Mr. M. Christe of our Printing Office who formatted the text and prepared the cover pages; and to Mrs. Véronique Compagnon, as well as Mrs. Paulette Mérigout (Créteil, France) for their assistance and friendship.

We wish to thank Professor Aline Raynal-Roques for the photographs she provided for our Dedication page, and for the beautiful drawing she offered as cover illustration.

Last but not least we express our sincere thanks to Dr. C. Chatelain, editor of this as well as the other volumes. Texts and maps are under his control and supervision.

New combinations

New combinations first published in Candollea 74: 147−149, 2019, and figuring in this Volume :

New combination published in this Volume:

I. INTRODUCTION

"Identifications of Cyperaceae in Tropical Africa are not easy… Disputes in generic delimitation exist" (Onana & Cheek, Red Data Book flow. pl. Cameroon: 364, 2011).

This volume covers the family *Cyperaceae* in tropical Africa. The family is nearly cosmopolitan, with 5450−5550 species in c. 108 genera. It forms the third largest family of Monocotyledons.

It is represented in our area by 46 genera and 829 (+ 13 ?) species. A few of these species are incompletely known, at least to judge from flora accounts or herbarium material: 1 species for which rhizome/roots are lacking, 11 species (= c. 1 %) for which (ripe) fruits are not known, 19 (+ 1 ?) species (= c. 2 %) for which the ecology is not recorded, and approximately 92 (+ 6 ?) species (= 11 %) are known only from the type gathering.

The generic concept adopted by us is the same as that used in several traditional floras, and in our Enumération 3: 161−212 (1995). In its main lines it corresponds to the classification proposed by Goetghebeur (1998; in K. Kubitzki, The families and genera of vascular plants 4: 141−190). This system differs much from that adopted by, e.g., The World Checklist of Selected Plant Families (Royal Botanic Gardens, Kew). The differences of opinion mainly concern the genus *Cyperus* where Goetghebeur recognises several segregate genera. These plants "are difficult to classify due to the complex structure of their inflorescences, which leads to different interpretations and to establishing uncertain hypotheses of homology" (Reutemann & al. in Bot. Rev. 78: 184, 2012).

"… plant taxonomy, especially in its traditional forms, is now going through some bad times…The last two decades have seen profound changes in techniques and approaches to the subject… The development of efficient and much cheaper computing has greatly facilitated the handling of vast datasets, and molecular taxonomy has an academic respectability that traditional taxonomy failed to achieve… In particular, DNA sequencing and the whole field of molecular systematics have produced a revolution in the classification of even familiar plants… Nevertheless, wise councils… have urged caution, emphasizing that these molecular methods should be seen as *techniques* and not themselves become the end rather than the means of taxonomy… molecular research is also leading to re-classification of familiar…genera"… "generic name changes… should never be taken lightly… Changes are inevitable but too many among familiar genera and species confuse most users outside the rarified world of professional taxonomy. As phylogeny redraws the existing system, its practitioners should remain mindful of the consequences of these changes, which affect not just taxonomy users but also vegetation taxa used in phytosociology" (Akeroyd on "*Flora Europaea*" in Contrib. Bot. Cluj-Napoca 49: 31−36, 2014). Akeroyd also reminds us of the "large non-professional public, including naturalists, gardeners and conservationists". Strid (Atlas of the Aegean Flora 1: 9, 2016) summarized the consequences in the following way: "Because of the nomenclatural consequences, rearrangements at the generic level can be particularly disturbing to ecologists, biogeographers, horticulturists and just about everybody else"… "So, some middle ground between 'lumping' and 'splitting' is required for practical, if not scientific purposes. That middle ground won't be provided by DNA analysis, but if current tendency for genus/species names to keep changing can be stopped it would be progress" (Al Laius in Cactus World 34: 55, 2016).

"…So why should we try to make all taxa holophyletic in our taxonomy?" (Brummitt in Ann. Missouri Bot. Gard. 100: 89, 2014). "The theoretical basis for cladistic classification into monophyletic (holophyletic) ranked taxa is fatally flawed and is promoting bad taxonomy… In taxonomy a balance must be found between lines of descent and characters… the cladistic movement has adopted lines of descent rather than characters as the sole basis of taxonomy… But as soon as one imposes ranks on a phylogeny, one must create paraphyletic taxa. These are natural products of evolution, which should be recognized in taxonomy… Adoption of ranked taxa is incompatible with recognition of only complete clades… A monophyletic (= holophyletic) system recognizing only complete clades, is producing it as 'cladonomy'… Cladograms are not classifications, and they need critical taxonomic assessment. The great majority of users of taxonomy are interested in characters and not cladistic theory…" (Brummit, ibid). – For further thoughts we recommend an article by J. R. I. Wood entitled "Towards a taxonomy of taxonomists", published in Oxford Plant Syst. 25: 9−10, 2019.

* * *

The descriptions of the species and the ecological notes figuring in our checklist are mainly borrowed or adapted from the floras and papers cited here or in our Enumération Volumes 3: 161−212, 1995, and 4: 597, 603, 1997.

* * *

Readers may notice that we still use the name "Zaire" for the now known "Democratic Republic of Congo" (compare also the World Checklist of Selected Plant Families, Royal Botanic Gardens, Kew). Names of many countries have changed more or less recently. Our choice is such in order to avoid confusion with "Congo" Brazzaville.

II. GENERAL BIBLIOGRAPHY

A. GENERAL REFERENCES (TROPICAL AFRICA)

ADODO, A. (2018). *Medicinal plants of Nigeria. An ethnobotanical survey and plant album.* OFIRDI & Beacon Academic, Manchester. XV + 163 pp.

AIGBOKHAN, E. I. (2014). *Annotated checklist of vascular plants of southern Nigeria. A quick reference guide to the vascular plants of southern Nigeria: a systematic approach*. Uniben Press, University of Benin, Benin City. XIV + 345 pp.

BURROWS, J. & al. (2018). *Trees and shrubs* [*of*] *Mozambique.* Print Matters Heritage, Cape Town. 1114 pp.

CÉSAR, J. & C. CHATELAIN (2019). *Flore illustrée du Tchad*. Conservatoire et Jardin botaniques de la Ville de Genève, etc. 767 pp.

COUCH, C. & al. (2019). *Threatened habitats & [and] tropical important plant areas (TIPAS) of Guinea, West Africa/ Habitats menacés et zones tropicales pour les plantes (ZTIP) de Guinée, Afrique de l'Ouest.* Royal Botanic Gardens, Kew, etc. 216 pp.

DE WASSEIGE, C. & al. (2015). *Les forêts du bassin du Congo. Forêts et changements climatiques/The forests of the Congo Basin*. *Forests and climate change.* Editions Weyrich, Belgique/Belgium. 128 pp.

FAYE, Papa Momar (2018). *Plantes médicinales et savoirs locaux. Un patrimoine économique, social et culturel menacé de disparition au Sénégal*. L'Harmattan-Sénégal, Dakar. 200 pp.

FRIIS, I. (2013). Travelling among fellow Christians (1768−1833): James Bruce, Henry Salt and Eduard Rüppell in Abyssinia. *In:* FRIIS, I. & al., eds., *Early scientific expeditions and local encounters. New perspectives on Carsten Niebuhr and 'The Arabian Journey'* (Scientia Danica, Ser. H, Humanistica 4/2. Det Kongelige Danske Videnskabernes Selskab): 161−194.

FRIIS, I. & al. (2019). Cenni monografici sul paese dei Gherire (Mogadiscio, 1938) – a pioneer work on the Gerire Hills in western Ogaden, south-east Ethiopia – introduced, translated and provided with annotations and a revision of the botanical collections. *Webbia* [74/1 online 30 Apr 2019] DOI: 10.1080/00837792.2018.1553281.

KUETEGUE, F. & al. (2019). A checklist of rheophytes of Cameroon. *PhytoKeys* 121: 81−131.

LUISELLI, L. & J. E. FA, eds. (2019). Guinean Forests of West and Central Africa: Ecology and Conservation. *Acta Oecol.* 94: 1−102 (Special Issue).

MALAISSE, F. & al. (2016). *Copper-Cobalt flora of Upper Katanga and Copperbelt. Field Guide*. Les presses Agronomiques de Gembloux. 422 pp. [review by S. Godefroid in *Pl. Ecol. Evol*. 150: 225−226, 2017].

MBUNI, Y. M. & al. (2019). An annotated checklist of vascular plants of Cherangani hills, Western Kenya. *PhytoKeys* 120: 1−90.

MEERTS, P. (2016). An annotated checklist to the trees and shrubs of the Upper Katanga (D. R. Congo). *Phytotaxa* 258: 201−250.

MEERTS, P. & M. HASSON (2016). *Arbres et arbustes du Haut-Katanga*. Jardin botanique Meise. 386 pp.

MEUNIER, Q. & al. (2015). *Les arbres utiles du Gabon.* Les Presses Agronomiques de Gembloux. 340 pp.

NTORE, S. & al. (2018). *Red List of the endemic and range-restricted vascular plants of Burundi*. (Scripta Bot. Belg. 58) 215 pp.

PYŠEK, P. & al. (2017). Naturalized alien flora of the world: species diversity, taxonomic and phylogenetic patterns, geographic distribution and global hotspots of plant invasion. *Preslia* 89: 203−274.

SACANDA, M. & al. (2016). *Guide d'identification des arbres du Mali*. Royal Botanic Gardens, Kew. 356 pp.

SCHMIDT, M. & al. (2017). Diversity, distribution and preliminary conservation status of the flora of Burkina Faso. *Phytotaxa* 304: 1−215.

THOUZERY, M. & A. O. M. VALL (2011). *Plantes médicinales de Mauritanie. Remèdes tradionnels et guérisseurs, du Sahara au fleuve Sénégal.* Association Plantes et Nomades. Monferrier. 287 pp.

VANDE WEGHE, J. P. & al. (2016). *Plantes à fleurs du Gabon. Une introduction à la flore des angiospermes.* Agence Nationale des Parc Nationaux, Libreville. 792 pp.

VAN WYK, B.-E. & N. GERICKE (2018). *People's plants. A guide to useful plants of southern Africa.* ed. 2. Briza Publications, Pretoria. 416 pp.

VELAYOS, M. & al. (2015). *Flora de Guinea Ecuatorial: Claves de plantas vasculares de Annobón, Bioko y Río Muni. XII. Poaneae-Typhanae*. Real Jardín Botánico de Madrid. LXII + 358 pp.

WORTLEY, A. H. & D. J. HARRIS (2016). Sangha trees: an identification and training guide to the trees of the northern Republic of Congo. *In:* WATSON, M. F. & al., eds., *Descriptive taxonomy: The foundation of biodiversity research* (System. Assoc. Special Volume 84): 127−145.

WÜRSTEN, B. & M. S. M. SOSEF (2017). *Catalogue of the families of vascular plants dealt with in the main Floras of tropical Africa. 6th edition/Repertoire des familles de plantes vasculaires traitées dans les principales Flores de l'Afrique tropicale. 6ème édition*. Botanic Garden Meise. 29 pp.

ZHOU, Y. & al. (2017). Vascular flora of Kenya, based on the Flora of Tropical East Africa. *PhytoKeys* 90: 113−126.

B. ADDITIONAL USEFUL LITERATURE

ABDEL BARY, E. M. M. (2013). *The flora of Qatar. Volume 1: The Dicotyledons*. E. S. Center, Doha. 700 pp. + Addendum leaflet 4 pp.

CHRISTENHUSZ, M. J. M. & J. W. BYNG (2016). The number of known species in the world and its annual increase. *Phytotaxa* 261: 201−217.

CHRISTENHUSZ, M. J. M. & al. (2017). *Plants of the world: an illustrated encyclopedia of vascular plants.* Royal Botanic Gardens, Kew. VIII + 792 pp. [Review in *Syst. Bot.* 43: 835, 2018.]

CLARKE, H. & M. CHARTERS (2016). *The illustrated dictionary of southern African plant names*. Jacana Media (Pty) Ltd, Auckland Park, South Africa. XXII + 482 pp.

FLORE DES MASCAREIGNES: La Réunion, Maurice, Rodrigues (2018). 202. *Cypéracées.* Institut de Recherche pour le Développement France, etc. 99 pp.

GHAZANFAR, S. A. (2015). *Flora of the Sultanate of Oman. Volume 3: Loganiaceae-Asteraceae*. (Scripta Bot. Belg. 55) VIII + 386 pp.

GHAZANFAR, S. A. (2018). *Flora of the Sultanate of Oman. Volume 4: Hydrocharitaceae-Orchidaceae*. (Scripta Bot. Belg. 56) IX + 306 pp.

MANNING, J. (2019). *Field guide to wild flowers of South Africa (also includes Lesotho and Swaziland)*, ed. 2. Struik Nature, Cape Town. 487 pp.

MERCURI, A. M. & al., eds. (2018). *Plants and people in the African past. Progress in African Archaeobotany.* Springer, Cham/Switzerland. VII + 576 pp.

RETIEF, E. & N. L. MEYER (2017). Plants of the Free State: inventory and identification guide. *Strelitzia* 38. 1236 pp.

ROUX, A. Le (2015). *Wild flowers of Namaqualand. A Botanical Society Guide. Fourth revised edition*. Struik Nature, Cape Town. 480 pp.

SOLTIS, D. & al. (2018). *Phylogeny and evolution of the Angiosperms. Revised and updated edition.* The University of Chicago Press, Chicago & London. 580 pp.

TURNER, B. L. (2016). *Homer LeRoy Shantz, leader of the expedition.* Texensis Publishing, Gruver, Texas. 140 pp. (map of travels in Africa p. 2).

VAN WYK, B. (2015). *Wild flowers of South Africa*. Struik Nature, Cape Town. 152 pp.

WEBER, E. (2017). *Invasive plant species of the World. 2nd Edition. A reference guide to environmental weeds*. CABI, Wallingford, Oxfordshire, UK. XIII + 581 pp.

III. STATISTICAL SUMMARY

This volume (*Cyperaceae*) covers 46 genera and 829 (+13) species. The genera are listed in Table 1 which also summerises our lack of information relating to vegetative organs, fruits, ecology, and herbarium material.

With a total of 829 (+ 13) species Table 1 shows the following results (figures within brackets indicate uncertain data):

– 1 species for which rhizome/roots are unknown;
– 11 species (= c. 1 %) for which (ripe) fruits are not known;
– 19 (+ 1 ?) species (= c. 2 %) without records on their ecology;
– 92 (+ 6 ?) species (= c. 11 %) which are only known from the type gathering/type locality.

We are aware of the fact that our figures do not reflect the absolute truth. They are certainly too high and should be considered as an indication only.

Table 1. – Genera included in *Cyperaceae*. Statistical summary: number of species (Nr. spp.); number of species for which vegetative organs, i. e. rhizome, roots (no veg.), (ripe) fruits (no fr.), and ecology (no ecol.) are not recorded.; and number of species known only from the type collection/or locality (Only type). Figures within brackets indicate uncertain data.

Genus	Nr. spp.	no veg.	no fr.	no ecol.	Only type
Abildgaardia	3				
Actinoschoenus	2				1
Afrotrilepis	2				
Alinula	4				1
Anosporum	2				
Ascolepis	21 (+ 1)			2	2 (+ 1)
Bolboschoenus	3 (+ 1)		1		
Bulbostylis	94		1	4 (+ 1)	17
Carex	37 (+ 4)				1
Carpha	2 (+ 1)				
Cladium	1				
Coleochloa	8		1		
Courtoisina	2				
Cyperus s. str.	140 (+ 1)	1	1	4	13 (+ 2)
Diplacrum	2				
Eleocharis	30				5 (+ 1)
Ficinia	6				2
Fimbristylis	27				
Fuirena	23			1	3
Hypolytrum	18				1
Isolepis	12				2
Kyllinga	c. 61		5	2	15
Kyllingiella	4				(1)
Lipocarpha	21				3
Machaerina	1				
Mapania	21				
Mariscus	65+9 (+4)		1		7
Microdracoides	1				
Nelmesia	1				
Nemum	8		1		1
Oxycaryum	1				
Pycreus	63			5	12 (+ 1)
Queenslandiella	1				
Remirea	1				
Rhynchospora	12				
Schoenoplectiella	12				
Schoenoplectus	5 (+ 1)				
Schoenoxiphium	4				
Schoenus	1				
Scirpoides	1				
Scleria	89			1	6
Sphaerocyperus	1				
Tetraria	4				
Torulinium	1				
Volkiella	1				
Websteria	1				
Total Cyperaceae genera: 46	**829 (+ 13)**	**1**	**11**	**19 (+ 1)**	**92 (+ 6)**

IV. HOW TO USE THIS BOOK

For each species there is a description and a simplified map of distribution. In a few cases two species figure on the same map but with different symbols.

The text is conceived in the following manner, based upon our "Enumération", Vol. 1 (J.-P. Lebrun & A. L. Stork 1991).

- Bibliographical references are sometimes given at the beginning of families and genera, as appropriate. They mostly refer to monographs or articles published after the issuing in 1997 of Volume 4 of our "Enumération" (an updating of the bibliographies is found at the end of each volume in the chapter "Additions et corrections...").
- Basionym and synonym(s) are only cited if they do not figure in the "Enumération".
- A short description, mainly with regard to life form, is given, e.g. tree, shrub, subshrub, liane, (annual, perennial) herb, and to the height of the plant; for trees sometimes also other characters, such as diameter and/or girth of the bole or presence of buttresses, are mentioned. Presence of rhizomes, tubers or bulbs and of spectacular features, such as showy flowers, exceptionally small or large leaves, flattened or rounded shoots, etc., or particular uses, are often specified.
- Ecological data are recorded, sometimes in rather detailed form if known; range of altitude is generally given.
- If a species comprises two or more intraspecific taxa, this is mentioned, but their names are not always quoted, as most of them appear in our "Enumération". However, there may have been changes since the publication in 1991, and in this case the names figure in the text.
- Extraterritorial geographical distribution is given (i.e. not marked on the accompanying map of distribution which includes only the tropical part of Africa as defined in our "Enumération").

* * *

On the maps of distribution (Fig. 1) we indicate the northern and southern limits of our area, as well as the political

frontiers of the countries within these borders. Arrows (at the margin of the continent, W Africa) indicate the situation of four particular countries, viz. Western Sahara, Guinea Bissau, Togo, and Benin.

The main phytochoria, based upon Frank White's classification and indicated on the maps that figure in Volume 1 of this Series (p. 19), have been slightly modified. In the following list Section B has been split into two areas. From North to South, and East to West the phytochoria are (Figs. 1 and 2):

- A. Southern Sahara-Sindian zone [corresponding to the southern part of White's phytochorion XVII (Sahara regional transition zone)].
- B. Sahelian-Sudano-Zambezian zone:
  - Ba. Sahel regional transition zone [corresponding to White's zone XVI];
  - Bb. Sudano-Zambezian zone [corresponding to the following phytochoria of White: III (Sudanian regional centre of endemism), XI (Guinea-Congolia/Sudania regional transition zone); X (Guinea-Congolia/ Zambezia regional transition zone); II (Zambezian regional centre of endemism); XIII (Zanzibar-Inhambane regional mosaic); and the north-eastern tip of XV, i.e. the southernmost part of Mozambique]; the enclosed parts of the "Afromontane archipelago-like regional centre of endemism" (VIII) and of the "Afroalpine archipelago-like region of extreme floristic impoverishment" (IX) have not been taken into account here (precluded by the small scale of our map).
- C. Guineo-Congolian rain-forest zone [corresponding to phytochorion I of White (Guineo-Congolian regional centre of endemism)].
- D. Ethiopian Afromontane zone [the northern part of White's phytochorion VIII (see above under Bb)].

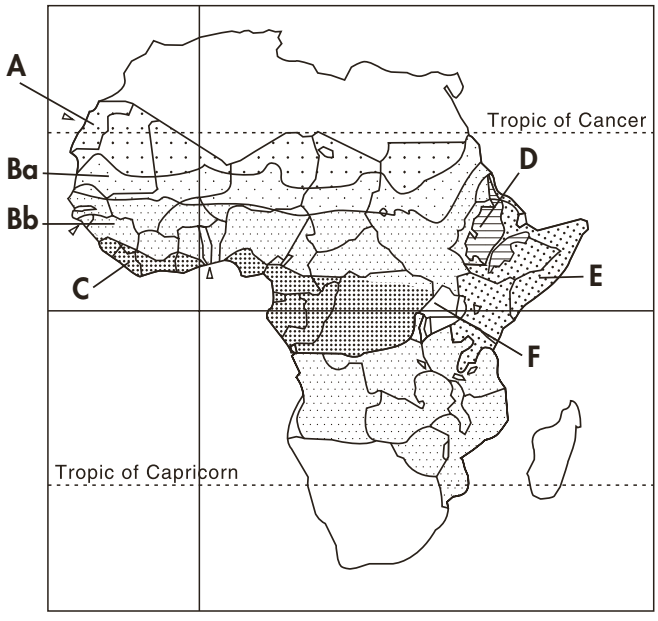


Fig. 1. – Main phytogeographical zones of tropical Africa used in the present work. For zones A through F, see explanations in the text.

- E. Somalia-Masai/Afroriental zone [phytochorion IV of White (Somalia-Masai regional centre of endemism) and the northernmost part of XIII (see above under Bb)]. The "Afromontane" (VIII) and "Afroalpine" (IX) archipelago-like regional centres are included (see above under Bb).

• F. Lake Victoria mosaic [White's phytochorion XII (Lake Victoria regional mosaic)]. As is the case in our zones Bb and E, the "Afromontane" (VIII) and "Afroalpine" (IX) archipelago-like regional centres are included here (see above under Bb).

Madagascar is not included in our compilation although present on the map (Fig. 1). The maps are based on literature records at our disposal; thus they are indicate, but not exhaustive. In certain cases it has even been impossible to find the exact locality. Although it will always be possible to add dots on the maps, we believe that in most cases such additions will not change fundamentally the general pattern of distribution for a particular species.

The distribution of the species is shown on the maps in the following way:

- For small countries only one dot is used. For larger countries, and in particular if the distribution falls into different phytochoria, two (or more) dots are present.
- Dots are also placed in particular "subdivisions" of large countries, according to those given in the following floras: Adumbratio Florae Aethiopicae, Flora of Ethiopia and Eritrea, Flora of Somalia, Flora of Tropical East Africa, Flora Zambesiaca, Flore du Congo Belge et du Ruanda-Urundi (succeeded by Flore du Congo Belge, du Rwanda et du Burundu, and ultimately by Flore d'Afrique centrale), and Conspectus Florae Angolensis.

Readers will notice that plants seem to be more common (as dots are more numerous) in the eastern part of tropical Africa. This is often an illusion due to thesubdivision of large countries mentioned above.

At more or less regular intervals, and at the end of a family, one or two maps areleft blank, in order to allow for mapping of newly described species (or species overlooked by the compilers).

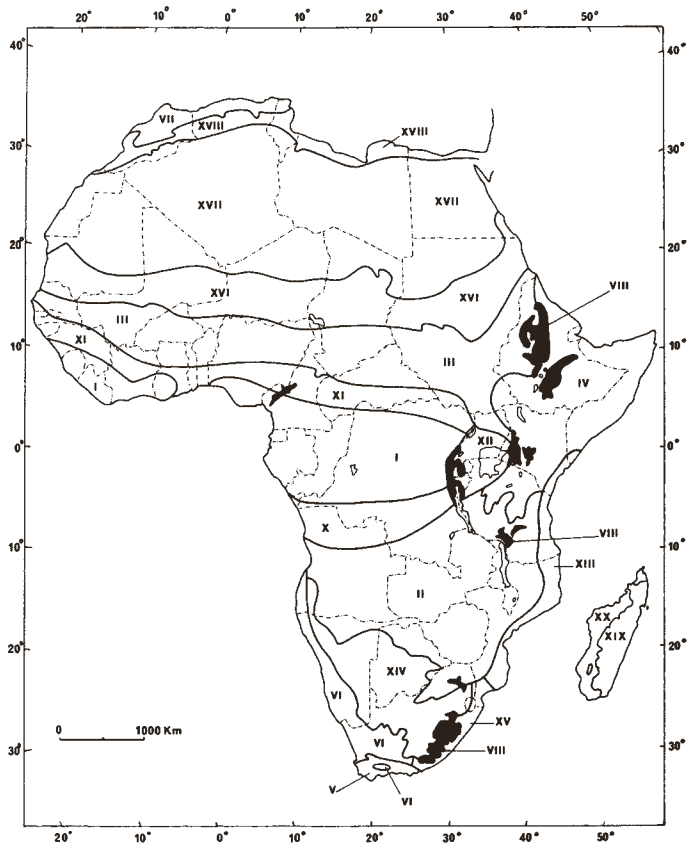


Fig. 2. – Main phytochoria of F. White (1983): p. 38 (cf. quotations in the text). See also "Enumération", vol. 1: pp. 24–25 (1991).

BASIC REFERENCE

WHITE, F. (1983). The vegetation of Africa: A descriptive memoir to accompany the Unesco/AETFAT/UNSO vegetation map of Africa. Unesco, Paris.

V. CYPERACEAE : INTRODUCTORY NOTES AND BIBLIOGRAPHY

A. INTRODUCTORY NOTES

The *Cyperaceae* family (sedges) includes some 108 genera and 5450−5550 species. It has a nearly cosmopolitan distribution, absent from the Antarctica and inland areas of Greenland; with an altitudinal range from sea level to up to 5475 m. There is a concentration of genera in the tropics, such as northern S. America, southern Sudano-Zambesian Africa, and SW Australia. The African distribution patterns of *Cyperaceae* are illustrated by Lye (Biol. Skr. 54: 195−212, 2001) who notes that the highest number of species is recorded from southern Tanzania and adjacent Zambia and Zaire, then decreasing S-wards, W-wards and N-wards (the number of species present in different regions and individual countries figures on Lye's maps, Figs. 1 and 2, respectively).

"Sedges are often viewed as difficult subjects for morphology-based phylogenetic analysis, due to several difficulties, including finding an adequate number of characters to yield well-resolved and well-supported trees, correctly assessing homology of characters and character states, and selecting appropriate outgroups for character state polarizations" (Naczi in Bot. Rev. 75: 67, 2009).

Cyperaceae are often mistaken for grasses, however, their stems are usually ± triangular in cross-section, and often leafless above the base. The leaves contain unique conical silica bodies, which distinguish them from all other monocots. The structure of the inflorescences has significant systematic value. "The basic reproductive units… are the spikelets…, which bear highly simplified flowers… Spikelets are arranged in inflorescences that are generally compound" (Reutemann & al. in Flora 210: 3, 2015). "However, the structure and primary homologies pose a challenge to their interpretation" (idem). "The main problems in the interpretation of the inflorescence structure results from studies, which did not consider the entire inflorescence; instead, attention was restricted to the position and arrangement of flowers in the final units of the often copiously branched inflorescence". "Misapplications of terms in formal taxonomical descriptions have led to morphologically erroneous examples…" (Vegetti in Ann. Bot. Fennici 40: 35−36, 2003). It seems that one of the most phylogenetically informative structures in the family is the embryo (Semmouri & al., 2019).

The fruit is an achene (nutlet). The achenes of a "large number of Cyperaceae (particularly in the large genera *Cyperus* and *Carex*) are very similar, the majority of other genera have many unusual and sometimes very specialized structures of unusual function. In fact the achenes of most species of the family… can be identified from a single well developed achene" (Lye in K. L. Wilson & D. A. Morrison, eds., Monocots: Systematics and Evolution: 627, 2000). The presence and morphology of silica bodies (phytoliths) in the pericarp are well known from many genera and species (Lye in Flora 223: 147, 2016).

"This family is known by its unusual cytological features, such as holokinetic chromosomes, post-reductional meiosis and pseudomonad development… it is possible to find even an odd chromosome numbers [sic !] in the Cyperaceae" (Arguelho & al. in Caryologia 65: 140, 2012).

Cyperaceae play an important, and dominant, role in wetland vegetation. They are abundant in humid, riverine or flooded places, where their rhizomes help prevent erosion and contribute to the natural water purification process. These vegetation types support a rich (avi)fauna (Larridon & al. in Scripta Bot. Belg. 46: 261, 2010). However, they also harbour feared vectors of diseases, such as ticks. Some species have adapted to drier conditions and are present in grassland, or occupy shaded niches in the transition zone from woodland to grassland. But they are often poor pasture plants and little used as fodder because of the silica bodies they contain.

Some *Cyperaceae* are well predisposed to survive recurrent burning, such as *Ascolepis lineariglumis*, *Bulbostylis igneotonsa*, *Coleochloa setifera*, *Cyperus lineariglumis*, *C. margaritaceus*, *C. tenax*, *Kyllinga platyphylla*, *Kyllingiella microcephala*, *Mariscus deciduus*, *Scleria bulbifera*, etc. (See Flora 176: 61−71, 1985); and also *Microdracoides* and *Rhynchospora gracillima*.

A few weedy species affect natural plant communities negatively. Some are among the most troublesome weeds which are difficult to control, with an adverse effect on agriculture and forestry. For example, *Cyperus rotundus* is one of the world's worst weeds, which, due to its very resistant subterranean tubers, is extremely difficult to eradicate. *Cyperus esculentus* is another aggressive weed that recently invaded NW Europe from the Americas (Goetghebeur 1998: 153).

On the other hand, sedges have a considerable economic importance as several species of various genera are used in different ways. They provide food, fuel, and medicines or materials for household utensils, weaving, thatching and perfumery. *Cyperus involucratus* is a well-known house plant, and, together with *C. papyrus*, a garden favorite in warmer countries. The latter is the source of ancient (and now tourist) papyrus rolls, and is gaining interest as a possible source for bioenergy. Species of *Schoenoplectus* are used in sewage treatment, for land-winning, and in scattered localities for building small boats or rafts (Goetghebeur, o.c.). The Orthodox Church in Ethiopia also uses sedges in ceremonies associated with Easter (Lye in Fl. Ethiopia & Eritrea 6: 391, 1997).

The nursery trade is an important vector for the inadvertent introduction and dispersal of weed species (Verloove & al. in Fl. Medit. 24: 198, 2014).

Traditionally several smaller genera, e.g. *Alinula*, etc. are/were recognised at generic level because they possess specialized inflorescence and/or flower characters. "Recent molecular phylogenetic analyses show that many of these genera are nested in a paraphyletic *Cyperus* s. str. and therefore should be viewed as part of a broadly circumscribed genus *Cyperus*" (Larridon & al. in Phytotaxa 166: 33, 2014). *Cyperus* thus becomes the largest genus in the family, followed by *Carex*. But until now the exploration of molecular characters in plants… is not complete, for genera there are important gaps, at the species and population level we are still at the beginning… but for the moment it cannot be assumed that genomic investigation can resolve every problem in plant systematics" (Pignatti in H. Malmgren & al., eds., Philosophy and Botany, Essays on Ivar Segelberg: 238, 2014). The generic concept adopted in our Checklist does not follow this "phylogenetic" classification. A tentative natural classification of *Cyperoideae* was proposed by J. Raynal in Adansonia, Sér. 2, 13: 161−170, 1973.

B. BIBLIOGRAPHY

ARCHER, C. & P. CRAVEN (2004). Cyperaceae in Namibia. *Sabonet News* 9: 18−28.

BROWNING., J. & P. GOETGHEBEUR (2017). *Sedge (Cyperaceae) genera of Africa and Madagascar.* Matador, Kibworth Bauchamp, Leicestershire. 103 pp.

BRUHL, J. J. (1995). Sedge genera of the world: Relationships and a new classification of the Cyperaceae. *Austral. Syst. Bot.* 8: 125–305.

BRYSON, C. T. & R. CARTER (2008). The significance of Cyperaceae as weeds. *Monogr. Syst. Bot. Missouri Bot. Gard.* 108: 15–101.

CABEZAS, F., C. AEDO & M. VELAYOS (2004). Checklist of the Cyperaceae of Equatorial Guinea (Annobón, Bioko, Río Muni). *Belg. J. Bot.* 137: 3–26.

CHERMEZON, H. (1936). Contribution à la flore cypérologique du Sénégal. *Arch. Bot. Caen* 7: *Mém*. 4: 1–28.

CHERMEZON, H. (1939). Énumération des Cypéracées gabonaises. *Nat. Syst.* 7: 151–168.

CLARKE, I. (2015). *Name those grasses: identifying grasses, sedges and rushes*. Royal Botanic Gardens Victoria, Australia. 536 pp. + 64 pp. of colour photographs.

CLARKE, N. & C. MANNHEIMER (1999). Cyperaceae of Namibia, an illustrated key. *Occas. Contr.* 1: 1–96. National Botanical Research Institute, Windhoek, Namibia.

COSTA, S.M. & al. (2018). What about Cryptangieae (Cyperaceae) – a molecular hypothesis about its tribal status and circumscription. *Phytotaxa* 347: 127–149.

DESAI, R. & V. M. RAOLE (2014). Synflorescence architecture studies in some Indian Cypereae (Cyperaceae). *Rheedea* 24: 81–98.

ESCUDERO, M. & A. HIPP (2013). Shifts in diversification rates and clade ages explain species richness in higher-level sedge taxa (Cyperaceae). *Amer. J. Bot.* 100: 2403–2411.

GLON, H. E. & al. (2017). A five gene phylogenetic study of Fuireneae (Cyperaceae) with a revision of Isolepis humillima. *Syst. Bot.* 42: 26–36.

GOETGHEBEUR, P. (1998). Cyperaceae. *In:* KUBITZKI, K., ed., *The families and genera of vascular plants IV. Flowering Plants. Monocotyledons*: 141–190. Springer-Verlag, Berlin, etc.

GORDON-GRAY, K. D. (1995). Cyperaceae in Natal. *Strelitzia* 2: 1–218.

GORDON-GRAY, K. D. & al. (2009). Studies in Cyperaceae in southern Africa 42: Pseudo-vivipary in South African Cyperaceae. *S. Afric. J. Bot.* 75: 165–171.

GOVAERTS, R. & D. A. SIMPSON (2007). *World checklist of Cyperaceae. Sedges.* Kew Publishing, Royal Botanic Gardens, Kew. XIII + 765 pp.

HUYGH, W. & al. (2010). Nomenclature and typification of names of genera and subdivisions of genera in Cypereae (Cyperaceae): 1. Names of genera in the Cyperus clade. *Taxon* 59: 1883–1890.

LARRIDON, I. & al. (2011a). Affinities in C3 Cyperus lineages (Cyperaceae) revealed using molecular phylogenetic data and carbon isotope analysis. *Bot. J. Linn. Soc.* 167: 19–46.

LARRIDON, I. & al. (2011b). Taxonomic changes in C3 Cyperus (Cyperaceae) supported by molecular data, morphology, embryography, ontogeny and anatomy. *Pl. Ecol. Evol.* 144: 327–356.

LARRIDON, I. & al. (2011c). Nomenclature and typification of names of genera and subdivisions of genera in Cypereae (Cyperaceae): 2. Names of subdivisions of Cyperus. *Taxon* 60: 868–884.

LARRIDON, I. & al. (2013). Towards a new classification of the giant paraphyletic genus Cyperus (Cyperaceae): phylogenetic relationships and generic delimitation of C4 Cyperus. *Bot. J. Linn. Soc.* 172: 106–126.

LARRIDON, I. & al. (2014). Taxonomic changes in C4 Cyperus (Cypereae, Cyperoideae, Cyperaceae): combining the sedge genera Ascolepis, Kyllinga and Pycreus into Cyperus s. l. *Phytotaxa* 166: 33–48.

LÉVEILLÉ-BOURRET, É. & J. R. STARR (2019). Molecular and morphological data reveal three new tribes within the Scirpo-Caricoid clade (Cyperoideae, Cyperaceae). *Taxon* 68: 218–245.

LÉVEILLÉ-BOURRET, É. & al. (2014). Searching for a sister to sedges (Carex): resolving relationships in the Cariceae-Dulichieae-Scirpeae clade (Cyperaceae). *Bot. J. Linn. Soc.* 176: 1–21.

LYE, K. A. (2016a). Chemistry of fruit wall and seed in Cyperaceae tribe Trilepideae. *S. Afric. J. Bot.* 106: 104–109.

LYE, K. A. (2016b). Pericarp diversity in Cyperaceae tribe Scirpeae. *Flora* 223: 147–158.

LYE, K. A. & P. THERY (2012). *Flore du Gabon 44. Cyperaceae*. Margraf Publishers, Weikersheim & Backhuys Publishers, Leiden. III + 230 pp.

MUASYA, A. M. (2017). Lumping and splitting – the changing generic concepts in angiosperms with emphasis on the Cyperaceae. *In:* MUSILI, P. M. & G. MWACHALA, eds., *XXI Aetfat Congress 2017*: 32–33.

MUASYA, A. M. & al. (1998). An assessment of suprageneric phylogeny in Cyperaceae using rbcL DNA sequences. *Pl. Syst. Evol.* 211: 257–271 [*Cyperus, Juncellus, Kyllinga, Pycreus*].

MUASYA, A. M. & al. (2009a). Phylogeny of Cyperaceae based on DNA sequence data: Current progress and future prospects. *Bot. Rev.* 75: 2–21.

MUASYA, A. M. & al. (2009b). What is a genus in Cypereae: Phylogeny, character homology assessment and generic circumscription in Cypereae. *Bot. Rev.* 75: 52–66.

MUASYA, [A.] M. & al. (2010). Are Cyperaceae distribution, diversity and endemism determined by the latitude ? *Scripta Bot. Belg.* (AETFAT XIX) 46: 308.

NACZI, R. F. C. (2009). Insights on using morphologic data for phylogenetic analysis in sedges (Cyperaceae). *Bot. Rev.* 75: 67–95.

NACZI, R. F. C. & B. A. FORD, eds. (2008). Sedges: Uses, diversity, and systematics of the Cyperaceae. *Monogr. Syst. Bot. Missouri Bot. Gard.* 108. XI + 298 pp.

RAVI, N. & N. MOHANAN (2002). *Common tropical and sub-tropical sedges and grasses. An illustrated account*. Science Publishers, Inc., Enfield (NH), USA & Plymouth, UK. XI + 219 pp.

REUTEMANN, A. [G.] & al. (2012). Structure of the Cyperaceae inflorescence. *Bot. Rev.* 78: 184–204.

REUTEMANN, A. G. & al. (2015). Inflorescence development in Abildgaardieae (Cyperaceae, Cyperoideae). *Flora* 210: 3–12.

SEMMOURI, I. & al. (2019). Phylogeny and systematics of Cyperaceae, the evolution and importance of embryo morphology. *Bot. Rev.* 85: 1–39.

SIMPSON, D. A. & C. A. INGLIS (2001). Cyperaceae of economic, ethnobotanical and horticultural importance: a checklist. *Kew Bull*. 56: 257–360.

SIMPSON, D. A. & al. (2003). Phylogenetic relationships in Cyperaceae subfamily Mapanioideae inferred from

pollen and plastid DNA sequence data. *Amer. J. Bot.* 90: 1071–1086.

SIMPSON, D. A. & al. (2007). Phylogeny of Cyperaceae based on DNA sequence data – A new rbcL analysis. *Aliso* 23: 72–83.

SPALINK, D. & al. (2016). Biogeography of the cosmopolitan sedges (Cyperaceae) and the area-richness correlation in plants. *J. Biogeogr.* 43: 1893–1904.

THOMAS, W. W. & al., eds. (2009). Cyperaceae – Based on papers presented at two symposia on Cyperaceae held during the XVII International Botanical Congress in Vienna, Austria in July of 2005. *Bot. Rev.* 75/1: 1–159.

UBERTI, N. & al. (2016). Spikelet structure in Cypereae (Cyperoideae-Cyperaceae). *Bot. Rev.* 82: 239–257.

VILJOEN, J.-A. & al. (2013). Radiation and repeated transoceanic dispersal of Schoeneae (Cyperaceae) through the southern Hemisphere. *Amer. J. Bot.* 100: 2494–2508.

* * *

There is no recent revision of the family for Zaire and the Flora Zambesiaca area (2019).

Pycreus felicis J. Raynal, see p. 289
Aline Raynal-Roques

Hypolytrum secans J. Raynal, see p. 202
Aline Raynal-Roques

Actinoschoenus repens J. Raynal, see p. 27
Aline Raynal-Roques

VI. THE CHECKLIST: Cyperaceae

VI. THE CHECKLIST

CYPERACEAE *46* g. / *829* (+ *13* ?) spp.

ABILGAARDIA / *3*

Genus of some 10 (9−15) species in all tropical regions but mainly in Australia; only a few species are pantropical; *A. ovata* is a widespread weed.

Abilgaardia as defined by Goetghebeur 1998 (p. 167) comprises annual or perennial herbs with depauperate or capitate inflorescences or these reduced to one single spikelet; flowers bisexual, style deeply 3-fid, achene stipitate with often warty surface (cf. also Goetghebeur & Coudijzer in Bull. Jard. Bot. Natl. Belg. 54: 69, 1984).

"Although *Abilgaardia* spp. have been placed in *Bulbostylis* and *Fimbristylis*, embryological and anatomical data support segregation as a separate genus…" (Bryson & Carter, Sedges: Uses etc.: 30, 2008).

CHAMKHAR, K. & al. (2007). Phylogeny of Abildgaardieae (Cyperaceae) inferred from ITS and trnL-F data. *Aliso* 23: 149−164.

Abilgaardia hygrophila (Gordon-Gray) Lye – Icon.: J. S. Afric. Bot. 32: 132, 139, 1966 (under *Fimbristylis*); Gordon-Gray, Cyper. Natal: 20, 1995 (fruit). – *Zulustylis* Muasya 2020.

bas.: *Fimbristylis hygrophila* Gordon-Gray

Perennial herb, erect or slightly drooping, densely tufted, to 44 cm tall; rhizome woody, contracted, 5 mm ∅, obliquely vertical in soil, clothed with pale yellow, ± spongy leaf bases; leaves *reduced to* spongy *sheaths < 3 mm long* closely investing flowering stems; flowering stems conspicuous, erect; inflorescence variable, to 2,3 cm long, 3,5 cm wide, composed of either 1 sessile spikelet with 1−4 pedicelled spikelets added, or a single head of 2−4 sessile spikelets, or a head of 2−4 sessile spikelets with 1−4 additional pedicelled heads or pedicelled spikelets added, or 1 sessile spikelet only, all possibilities being represented on single plants.

Brachystegia woodland on sand near edge of grassland; on sandy black turf soils of vlei areas often with other sedges; dambos; 450 m alt.

S. Africa, Swaziland. – Also in Zaire ?

A. ovata (Burm. f.) Král – Icon.: J. E. Africa Nat. Hist. Soc. 25/110: 25, 1965; J. S. Afric. Bot. 32: 144, 149, 1966; Bot. Not. 126: 326, 1973; Gordon-Gray, Cyper. Natal.: 20, 21, 1995; Fl. Eth. & Eritrea 6: 413, 1997; Clarke & Mannheimer, Cyper. Namibia: 23, 1999; Fl. Mascareignes 202, Cypér.: colour plate facing p. 80, 2018.

bas.: *Carex ovata* Burm. f.

syn.: *Abildgaardia monostachya* (L.) Vahl; *Cyperus monostachyos* L.; *Fimbristylis monostachya* (L.) Hassk.; *F. ovata* (Burm. f.) J. Kern; for full synonymy, see World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (under *Fimbristylis ovata*).

Perennial densely tufted herb 5−40 cm tall; rhizome short, hardened at base, covered with persistent leaf bases and old stiff prophylls; stems 0,5−1 mm ∅, deeply ridged; leaf blade flat, 5−25 cm × 0,8 mm, margin with many spine-like teeth; sheaths with 2 very conspicuous keels; inflorescence of 1(−2) large, ± compressed spikelets 0,5−1 cm long, to 1,5−2,3 cm in fruit.

Grassland, wooded grassland, sometimes waterlogged but not marshy, often in heavily grazed areas; wet grassland, not abundant; seasonally swampy vlei grassland; grazed fallows; sandy, clayey meadows among short herbage; lawn with *Sporobolus*, *Craterostigma*; gravelly ravine; gallery; pastures; rice fields; 0−2400 m alt.

Also in Cameroon ? (cf. Onana, Vascul. pl. Cameroon…: 159, 2011); S. Tomé, Annobón; Namibia, S. Africa. – In most tropical regions of the World, growing as a weed in Asia, N. America (in USA, S Florida occasionally a weed of gravelly soils in waste areas, along highways, in lawns), W. Indies, S. America, Pacific Islands.

A. triflora (L.) Abeyw. – Icon.: J. S. Afric. Bot. 32: 148, 149, 1966; Bot. Not. 126: 326, 1973; Gordon-Gray, Cyper. Natal: 20, 1995 (fruit); Clarke & Mannheimer, Cyper. Namibia: 23, 1999; Fl. Trop. E. Afr., Cyper.: 114, 2010.

bas.: *Cyperus triflorus* L.

syn.: *Abildgaardia tristachya* Vahl; *A. lanceolata* Schumach. (fide Fl. Trop. E. Afr., Cyper.: 115, 2010); *Fimbristylis tristachya* (Vahl) Thwaites; *F. triflora* (L.) K. Schum.; *Schoenus cyperoides* Retz.; *Iria triflora* (L.) Kuntze

Perennial herb, densely tufted, 30−75 cm tall; *rhizome thick*; stems angular, flattened, 1−3 mm thick, with golden red-brown to dark brown leaf sheaths at base; leaves flat, 10−30 cm × 0,2−2,5 mm, margins scabrid; inflorescence of *1 sessile and 1−4 stalked spikelets*, rarely with 1 spikelet; spikelets ovoid, 1−2,5(−4 in fruit) × 0,4−1 cm.

Tidal mud; sand flats; seasonally swampy depressions with black soil; salt marsh; *Hyphaene/Sclerocarya* wooded grassland bordering *Avicennia* mangrove swamp; 0−45 m alt.

Namibia, S. Africa, Swaziland; Madagascar; S India, Sri Lanka.

For differences between *A. ovata* and *A. triflora*, See: J. S. Afric. Bot. 32: 150, Table I, 1966, and Clarke & Mannheimer, Cyper. Namibia: 22−23, 1999 (illustration).

TAXA OF UNCERTAIN STATUS:

Abildgaardia capitata Lye (Zambia) – Icon.: Lidia 1: 32, 1986 (Zambia) = **Bulbostylis capitata** (Lye) Lye
Abildgaardia metalliphila Lye, l.c. (Zaire)

SYNONYMS:

Abilgaardia abbreviata Lye = **Bulbostylis abbreviata**
abortiva (Steud.) Lye = **B. abortiva**
acutispicata Lye = **B. acutispicata**
afro-orientalis Lye = **B. afro-orientalis**
angustespicata Lye = **B. angustespicata**
argenteobrunnea (C. B. Clarke) Lye = **B. argenteobrunnea**
boeckeleriana (Schweinf.) Lye, incl. var. *boeckeleriana* R. W. Haines & Lye = **B. boeckeleriana**
boeckeleriana var. *transiens* (K. Schum.) Lye = **B. boeckeleriana** var. **transiens**
buchananii (C. B. Clarke) Lye = **B. buchananii**
burchellii (Ficalho & Hiern) Lye = **B. burchellii**
capitata Lye = **B. capitata**
cardiocarpoides (Cherm.) Lye = **B. cardiocarpoides**
clarkeana (Hutch. ex Bodard) Lye = **B. clarkeana**
coleotricha (Hochst. ex A. Rich.) Lye = **B. coleotricha**
coleotricha var. *miegei* (Bodard) Lye = **B. coleotricha** var. **miegei**

ABILGAARDIA

collina (Ridl.) Lye = **B. scabricaulis**
compressa J. Presl & C. Presl = **Abildgaardia ovata**
congolensis (De Wild.) Lye = **Bulbostylis pusilla** subsp. **congolensis**
contexta (Nees) Lye = **B. contexta**
cruciformis Lye = **B. cruciformis**
densa (Wall.) Lye = **B. densa**
densa subsp. *afromontana* Lye = **B. densa** subsp. **afromontana**
densicaespitosa Lye = **B. densicaespitosa**
densiflora Lye = **B. densiflora**
elegantissima Lye = **B. elegantissima**
erratica (Hook. f.) Lye = **B. erratica**
erratica subsp. *schoenoides* (Kunth) Lye = **B. schoenoides**
filamentosa (Vahl) Lye = **B. filamentosa**
filamentosa var. *holubii* (C. B. Clarke) Lye = **B. scabricaulis**
filamentosa var. *metralis* (Cherm.) Lye = **B. filamentosa**
glaberrima (Kük.) Lye = **B. glaberrima**
hensii (C. B. Clarke) Lye = **B. hensii**
hispidula (Vahl) Lye = **B. hispidula**
hispidula subsp. *brachyphylla* (Cherm.) Lye = **B. hispidula** subsp. **brachyphylla**
hispidula var. *filiformis* (C. B. Clarke) Lye = **B. hispidula** subsp. **filiformis**
hispidula subsp. *filiformis* (C. B. Clarke) Lye = **B. hispidula** subsp. **filiformis**
hispidula subsp. *halophila* Lye = **B. hispidula** subsp. **halophila**
hispidula subsp. *intermedia* Lye = **B. hispidula** subsp. **intermedia**
hispidula subsp. *longispicata* (Lye) J.-P. Lebrun & Stork = **B. hispidula** subsp. **longispicata**
hispidula subsp. *macroglumis* (Lye) J.-P. Lebrun & Stork = **B. hispidula** subsp. **macroglumis**
hispidula var. *oligostachys* (Hochst. ex A. Rich.) Lye = **B. oligostachys**
hispidula subsp. *pyriformis* (Lye) Lye = **B. hispidula** subsp. **pyriformis**
hispidula var. *pyriformis* Lye = **B. hispidula** subsp. **pyriformis**
hispidula subsp. *senegalensis* (Cherm.) J.-P. Lebrun & Stork = **B. hispidula** subsp. **senegalensis**
humilis (Kunth) Lye = **B. humilis**
igneotonsa (Raymond) Kornás = **B. igneotonsa**
indica (Rich. ex Pers.) Nees = **Abildgaardia ovata**
johnstonii (C. B. Clarke) Lye = **Bulbostylis johnstonii**
lacunosa Lye = **B. lacunosa**
lanceolata Schumach. = **Abildgaardia triflora** (fide Fl. Trop. E. Afr.)
lanifera (Boeckeler) Lye = **Bulbostylis lanifera**
laxispicata Lye = **B. laxispicata**
leiolepis (Kük.) Lye = **B. leiolepis**
longispicata Lye = **B. longispicata**
macra (Ridl.) Lye = **B. macra**
macroanthela Lye = **B. macroanthela**
macrostachya Lye = **B. macrostachya**
malawiensis Lye = **B. malawiensis**
megastachys (Ridl.) Lye = **B. megastachys**
metalliphila Lye = ?
microcarpa Lye = **Bulbostylis microcarpa**
microcephala Lye 1985 = **B. afromicrocephala**
microelegans Lye = **B. microelegans**
microrotundata Lye = **B. microrotundata**
miegei (Bodard) Lye = **B. coleotricha** var. **miegei**
monostachya (L.) Vahl = **Abildgaardia ovata**

ABILGAARDIA

nervosa J. Presl & C. Presl = **Fimbristylis schoenoides**
nudiuscula Lye = **Bulbostylis nudiuscula**
oligostachys (Hochst. ex A. Rich.) Lye = **B. oligostachys**
oritrephes (Ridl.) Lye = **B. oritrephes**
pallescens Lye = **B. pallescens**
parva (Ridl.) Lye = **B. pusilla** subsp. **pusilla**
parvinux (C. B. Clarke) Lye = **B. parvinux**
pilosa (Willd.) Nees = **B. pilosa**
pluricephala Lye = **B. pluricephala**
pusilla (Hochst. ex A. Rich.) Lye = **B. pusilla**
pusilla subsp. *congolensis* (De Wild.) Lye = **B. pusilla** subsp. **congolensis**
pusilla subsp. *yalingensis* (Cherm.) Lye = **B. pusilla** subsp. **pusilla**
rhizomatosa Lye = **B. rhizomatosa**
rottboelliana Nees = **Abildgaardia ovata**
rotundata (Kük.) Lye = **Bulbostylis rotundata**
schimperiana (Hochst. ex A. Rich.) Lye = **B. schimperiana**
schlechteri (C. B. Clarke) Lye = **B. schlechteri**
scleropus (C. B. Clarke) Lye = **B. scleropus**
scrobiculata Lye = **B. scrobiculata**
setifolia (A. Rich.) Lye = **B. atrosanguinea**
sphaerocarpa (Boeckeler) Lye = **B. sphaerocarpa**
squarrosa Lye = **B. squarrosa**
striatella (C. B. Clarke) Lye = **B. striatella**
subumbellata Lye = **B. hensii**
tanzaniae Lye = **B. tanzaniae**
taylorii (K. Schum.) Lye = **B. taylorii**
trabeculata (C. B. Clarke) Lye = **B. trabeculata**
trabeculata var. *microglumis* Lye = **B. trabeculata** var. **microglumis**
tristachya Vahl = **Abildgaardia triflora**
ugandensis Lye = **Bulbostylis ugandensis**
vanderystii (Cherm.) Lye = **B. vanderystii**
wallichiana (Schult.) Lye 1983 = **B. barbata** subsp. **barbata**
willdenowii (Kunth) Lye 1981 (1982) = **B. barbata** subsp. **barbata**
wombaliensis (De Wild.) Lye = **B. wombaliensis**
yalingensis (Cherm.) Lye = **B. pusilla** subsp. **pusilla**

(ACORELLUS)

Acorellus distachyos (All.) Palla = **Cyperus laevigatus** subsp. **distachyos**
distachyos (All.) Palla × *A. laevigatus* (L.) Palla = **C. laevigatus** subsp. **laevigatus**
laevigatus (L.) Palla = **C. laevigatus**
laevigatus subsp. *distachyos* (All.) Holub = **C. laevigatus** subsp. **distachyos**
pallae Kneuck. = **C. laevigatus** subsp. **laevigatus**

(ACRIULUS)

Acriulus greigiifolius Ridl. = **Scleria greigiifolia**
madagascariensis Ridl. = **S. greigiifolia**
titan C. B. Clarke = **S. greigiifolia**

ACTINOSCHOENUS / *2*

Genus of 4 species traditionally accepted with disjunct distributions: Equatorial Guinea/Gabon, SE Zaire, Zambia – Madagascar – Sri Lanka, SE Asia, China, Philippines, New Caledonia (Goetghebeur 1998: 174). Five additional species were described by Rye from W Australia (See Rye & al. in Nuytsia 26: 167−184, 2015).

The genus is close to the Australian genus *Arthrostylis*.

(**Actinoschoenus aphyllus** (Vahl) ined.) See below under **A. thouarsii**.

Actinoschoenus repens J. Raynal – Icon.: Adansonia, Sér. 2, 7 : 93, 1967.

Perennial erect herb 30−50 cm tall with *long horizontal bare stolons*; inflorescence terminal, capitate, of 2−4 spikelets; *achene* big, *2,5 × 1,5 mm* (not 1−2 × c. 1 mm).

Grassy sandy place near the head of Zambezi River.

Known only from the type collected in 1963 by E. A. Robinson (cf. Lock in Kew Bull. 70/4: § 46: 3, 2015).

A. thouarsii (Kunth) Benth. – Cited in flora lists as *A. filiformis* Benth. – Icon.: Hooker's Icon. Pl. 14: pl. 1346, 1881 sub nom. *A. filiformis*; Fl. Gabon 44: 6, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 322, 2014.

bas.: *Arthrostylis thouarsii* Kunth

syn.: *Actinoschoenus chinensis* (Benth.) Benth.; *A. humbertii* Cherm.; *A. filiformis* (Thwaites) Benth.; ***A. aphyllus*** (Vahl 1805) ined. in World Checklist of Selected Plant Families, Cyperaceae, Royal Botanic Gardens, Kew; *Schoenus aphyllus* Vahl 1805; *Arthrostylis aphylla* (Vahl) Boeckeler 1872, nom. illeg..; *A. humbertii* (Cherm.) Kük.; *A. filiformis* Thwaites; *A. chinensis* Benth.; *Fimbristylis chinensis* (Benth.) Tang & F. T. Wang; *F. actinoschoenus* C. B. Clarke, incl. var. *chinensis* (Benth.) C. B. Clarke, and var. *thouarsii* (Kunth) C. B. Clarke; *F. thouarsii* (Kunth) Merr.; *F. filiformis* (Thwaites) Druce, nom. illeg..; See also World Checklist of Selected Plant Families, l.c.

Perennial herb with *short creeping to erect rhizome* (without underground stolons !); stems 20−65 cm tall, 0,3−0,5 mm ∅, trigonal, edges prominent, with 2−4 cinnamon-brownish leaf sheaths at base; inflorescence a ± dense *spherical* head 0,8−1,4 cm ∅ of 25−40 sessile spikelets; spikelets light reddish brown with recurved awns; achene small, *1,15−1,35 mm long*.

Inselbergs, rocks in forest; *Loudetiopsio glabratae-Antherothomion irvingianae* community, with *Actinoschoenus* "filiformis" as one of the character species (Phytocoenologia 36: 565−597, 2006); 500−850 m alt.

Zaire ?; Madagascar, Mauritius; Sri Lanka, India, Thailand, Cambodia, Viet-Nam, China, Malaysia, Philippines, New Caledonia, Australia. – Disjunct area.

Sometimes confused with *Rhynchospora holoschoenoides*.

SYNONYMS (See above under **A. thouarsii**, and):

Actinoschoenus erinaceus (Ridl.) Raymond = **Sphaerocyperus** (Cyperus) **erinaceus**

(AEGOPOGON)

Aegopogon gracile Peter, nom. nud. = **Scleria melanotricha**

AFROTRILEPIS / *2*

syn.: *Catagyna* Hutch. & Dalziel 1936, nom. illeg.

Genus of 2 species allied to the tropical American genus *Trilepis* with 5 species in SE Brazil and the Guayana Shield in S Venezuela, Guyana, French Guiana. They have a "peculiar, sac-like structure of fructification…a utricle" (Koyama in Makinoa, N. S. 6: 15, 2007; Goetghebeur 1998: 183).

Afrotrilepis jaegeri J. Raynal – Icon.: Boissiera 33: 209, 1981.

Procumbent cushion, perennial herb 10−20 cm tall, with an erect or a ascending trunk-like rhizome covered with remains of old leaves, or with roots; *leaves 1,5−2,5 cm long*, covering the *slender* stem *on a long distance*; blades acuminate, 1 mm wide; fertile branches axillary, 7−13 cm long; inflorescence terminal of 1−4 spikes, 4−6 mm long, 3−4 mm wide.

Granitic rocks, inselbergs (Porembski & Barthlott, Inselbergs…: 206, 2000); 1400−1550 m alt.

A. pilosa (Boeckeler) J. Raynal, incl. var. *trichocarpa* J. Raynal – Icon.: Bot. Not. 126: 334, 1973; Jaeger & Adam, Végét. vascul. Mts Loma 2: 207, 1981; Adam, Fl. descr. Mts Nimba 6: 2145, 1983; Berhaut, Fl. Sénégal 9: 144, 1988; Nord. J. Bot. 16: 241, 1995; Fl. Gabon 44: 8, 2012; Merklinger in Kakteen Sukk. 64: 86−87, 2013 (in habitat); Lye in S. Afric. J. Bot. 106: 106, 2016 (fruit).

bas.: *Trilepis pilosa* Boeckeler

syn.: *Eriospora pilosa* (Boeckeler) Benth., incl. var. *longipes* C. B. Clarke; *Catagyna pilosa* (Boeckeler) Hutch.

Perennial stout tufted herb to 1,3 m tall, desiccation-tolerant; rhizome simple or branched, ascending or erect; *stem* with *leaves on a short* (not long) *distance* only; leaves 10−45 cm long; *inflorescence* terminal, with *numerous spikes*.

Plant with a wide degree of morphological and ecological variation. Forming large island-like mats (1,25−2,5 cm thick, fide Burkill, l.c.) on inselbergs of granite, gneiss or dolerite, surrounded by large outcrops in savanna, or in rain-forest (where even the steepest slopes bear nearly continuous *Afrotrilepis pilosa* mats); these mats are species-poor or monospecific. Mats of *A. pilosa* on inselbergs are sometimes colonised by certain species of *Polystachya* (*Orchidaceae*), e.g., *P. microbambusa* (Porembski in Nord. J. Bot. 23: 505−512, 2004); a resurrection plant that can endure prolonged periods of drought; 450−1470 m alt.

Communities with *Afrotrilepis pilosa* are, e.g.: – *Cyanotido lanatae – Afrotrilepidetum pilosae* Oumorou & Porembski, *Oreanesiono testui – Afrotrilepidetum pilosae* Parmentier, *Afrotrilepis pilosa – Habenaria procera* community (Phytocoenologia 36: 547−564; and ibid.: 565−597, 2006), *Spermacoco hepperanae – Afrotrilepidetum pilosae* J. Müller (Folia Geobot. 42: 29−61, 2007).

Selected references (general works):

KILLIAN, C. & R. SCHNELL (1947). Contribution à l'étude des formations végétales et des sols humifères correspondants des massifs du Benna et du Fouta-Djalon (Guinée française). *Revue Canadienne de biologie, Montréal* 6(3): 379−435.

KORTE, N. & S. POREMBSKI (2011). Wiederauferstehungspflanzen. Überleben an Extremstandorten. *Senckenberg, Natur, Forschung, Museum* 141: 14−23 [with photographs of *Afrotrilepis pilosa*].

MÜLLER, J. V. (2007). Herbaceous vegetation of seasonally wet habitats on inselbergs and lateritic crusts in West and Central Africa. *Folia Geobot*. 42: 29−61.

NUSBAUMER, L. & al. (2005). Structure et composition floristique de la Forêt Classée du Scio (Côte d'Ivoire). Étude descriptive et comparative. *Candollea* 60: 393−443.

PARMENTIER, I. & J. V. MÜLLER (2006). Grasslands and herbaceous fringes on inselbergs in Atlantic central Africa. *Phytocoenologia* 36: 565−597.

PARMENTIER, I. & al. (2006). Ecology, distribution, and classification of xeric monocotyledonous mats on inselbergs in West Africa and Atlantic central Africa. *Phytocoenologia* 36: 547−564.

POREMBSKI, S. (1996). Epiphytic orchids on arborescent Velloziaceae and Cyperaceae: Extremes of phorophyte specialisation. *Nord. J. Bot.* 23: 505−512.

POREMBSKI, S. (2005). Floristic diversity of African and South American inselbergs: a comparative analysis. *Acta Bot. Gall.* 152: 573−580.

POREMBSKI, S. (2007). Effects of anthropogenic disturbance on the vegetation of granitic and gneissic rock outcrops ('inselbergs') in West Africa. *Nova Hedwigia*, *Beih.* 131: 237−246.

POREMBSKI, S. & W. BARTHLOTT, eds. (2000). *Inselbergs. Biotic diversity of isolated rock outcrops in tropical and temperate regions.* Springer-Verlag, Berlin etc. XXXI + 524 pp.

References to *Afrotrilepis pilosa*:

POREMBSKI, S. & W. BARTHLOTT, W. (1996). Afrotrilepis pilosa-mats are the least diverse community on Ivorian inselbergs. *In*: MAESEN, L. J. G. van & al., eds., *Proceedings 14th AETFAT Congress, Wageningen, 1994*: 183.

POREMBSKI, S. & G. BROWN (1995). The vegetation of inselbergs in the Comoé National Park (Ivory Coast). *Candollea* 50: 351−365 (See p. 354, 362).

POREMBSKI, S. & al. (1996). A species-poor tropical sedge community: Afrotrilepis pilosa mats on inselbergs in West Africa. *Nord. J. Bot.* 16: 239−245.

TOKO, I. & al. (2010). Écologie et dynamique temporelle d'Afrotrilepis pilosa sur les inselbergs de Wari-Maro (Bénin). *In*: BURGT, J. van der & al., eds., *Systématique et conservation des plantes africaines*: 731−739.

Very polymorphic species covering a wide range of forms: two varieties were recognised by J. Raynal, viz. – var. *pilosa*, with glabrous achenes; – var. *tricocarpa* J. Raynal, with longer, hairy achenes, described from Mankono, Ivory Coast. – Cf. comments by Napper in Fl. W. Trop. Afr., ed; 2, 3/2: 347, 1972.

The species is used for thatching hut-roofs (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 606, 1985), and also in a superstitious sense to ward off lightning (Simpson & Inglis in Kew Bull. 56: 259, 2001).

(ALINIELLA J. Raynal)

Aliniella lipocarphioides (Kük.) J. Raynal
= **Alinula lipocarphioides**

ALINULA / *4*

syn.: *Aliniella* J. Raynal 1973, nom. illeg., non Skvortzow 1958 (Euglenophyta); *Marisculus* Goetghebeur 1977.

Small tufted annual plants; spikes with many small spikelet bracts; spikelets reduced to a small prophyll and a large glume (Goetghebeur 1998: 171).

HUYGH, W. & al. (2010). Nomenclature and typification of names of genera and subdivisions of genera in Cypereae (Cyperaceae): 1. Names of genera in the Cyperus clade. *Taxon* 59: 1883−1890.

UBERTI, N. & al. (2016). Spikelet structure in Cyperaceae (Cyperoideae-Cyperaceae). *Bot. Rev.* 82: 239−257.

Alinula lipocarphioides (Kük.) J. Raynal – Icon.: Repert. Spec. Nov. Regni Veg. Beih. 40/1 (= Flora von Deutsch-Ostafrika): pl. 87/3, 1937 (under *Ficinia*); Fl. Eth. & Eritrea 6: 488, 1997 (under *Cyperus*); Nord. J. Bot. 32: 111, 2014 (nutlet).

bas.: *Ficinia lipocarphioides* Kük.

syn.: *Aliniella lipocarphioides* (Kük.) J. Raynal; *Raynalia lipocarphioides* (Kük.) Soják, comb. superfl.; *Cyperus lipocarphioides* (Kük.) Lye

Annual herb; stems 2−15 cm long, 0,03−0,06 cm wide, 3-angled; leaf blade shorter than stem, sheaths purple at least below; inflorescence a congested anthela 3−8 mm wide, of 2−6 sessile, ovate, dark red-brown spikes 2−5 mm long.

Wet rock crevices; seasonally wet grassland; temporary rocky marshes; bare wet soil along stream; 1500 – c. 2400 m alt.

A. malawica (J. Raynal) Goethgh. & Vorster

bas.: *Mariscus malawicus* J. Raynal

syn.: *Cyperus malawicus* (J. Raynal) Lye

Annual herb c. 15 cm tall; leaf sheaths purplish, blade 5 cm long, 15 mm wide; inflorescence an umbel with 3−6 ovoid-cylindric spikes, thereof 1−2 on pedicel 0,8−1,5 cm long, the others sessile, crowded; spikes 7 × 4 mm.

Temporarily humid sandy soil.

Only known from the type collected in 1961.

A. paradoxa (Cherm.) Goetgh. & Vorster – Icon.: Gordon-Gray, Cyper. Natal.: 22, 23, 1995; Clarke & Mannheimer, Cyper. Namibia: 25, 1999; Fl. Trop. E. Afr., Cyper.: 264, 2010.

bas.: *Lipocarpha paradoxa* Cherm.

syn.: *Mariscus paradoxus* (Cherm.) Cherm.; ***Cyperus subparadoxus*** Kük. 1936, non *C. paradoxus* Steudel 1855; *C. fimbristyloides* T. Koyama 1960, nom. superfl.; *Pseudolipocarpha paradoxa* (Cherm.) Vorster 1978, comb. provis.

Annual herb 5−25 cm tall with few basal leaves; inflorescences open, laxly branched, of 1−2-compound anthelae, similar to a *Fimbristylis* with 5-many spikes; rays to 3 cm long; spikes dark reddish brown, round to ovoid, 1−4 mm long.

In and near ricefields; in moist soil adjacent to water; 0−30 m alt.

Namibia, S. Africa; Madagascar.

A. peteri (Kük.) Goetgh. & Vorster 1988, non *Cyperus peteri* Kük. 1936. – Icon.: Repert. Spec. Nov. Regni Veg. Beih. 40/1 (= Flora von Deutsch-Ostafrika): pl. 90/1, 1937; J. E. Africa Nat. Hist. Soc. & Coryndon Mus. 24/5: 45, 1964 (under *Ascolepis*); Fl. Eth. & Eritrea 6: 489, 1997 (as *Cyperus microaureus*).

bas.: *Ascolepis peteri* Kük. 1936 (1932).

syn.: *Marisculus peteri* (Kük.) Goetgh.; ***Cyperus microaureus*** Lye, nom. nov.

Clustered annual herb 3−20 cm tall, with a few pale grey to pinkish leaf-bases; root system minute; leaves shorter than culm, to1 mm wide, margins hyaline, sparsely ciliolate; inflorescence *bright yellow*, capitate, with 1−8 spikes, the central one ovoid, 3−6 mm long, laterals more globose, 2−5 mm long.

Bushland; sandy hollows near saline lake shore; wet rocky outcrops in grassland; 900−2500 m alt.

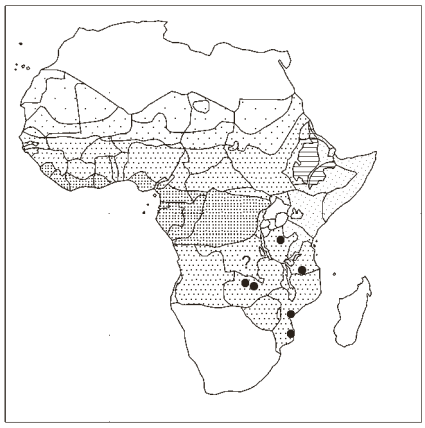
(ANDROPOGON; POACEAE)

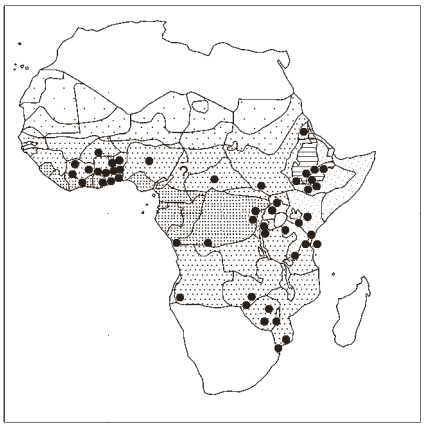
Andropogon dulce Burm. f. = **Eleocharis dulcis**

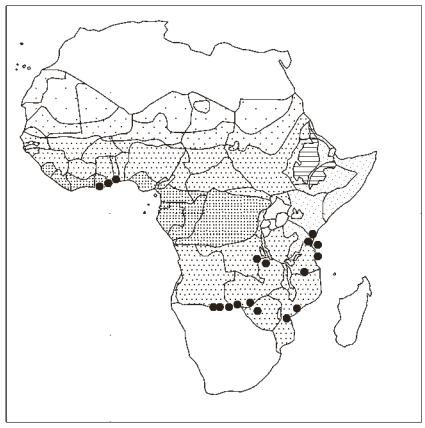
ANOSPORUM / *2*

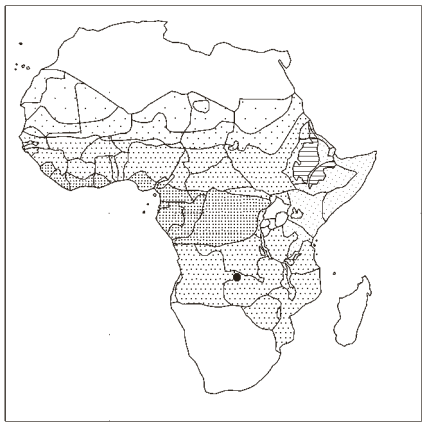
syn.: *Cyperus* L. subgen. *Anosporum* (Nees) C. B. Clarke (Goetghebeur 1998: 170; Huygh & al. in Taxon 59: 1885, 2010).

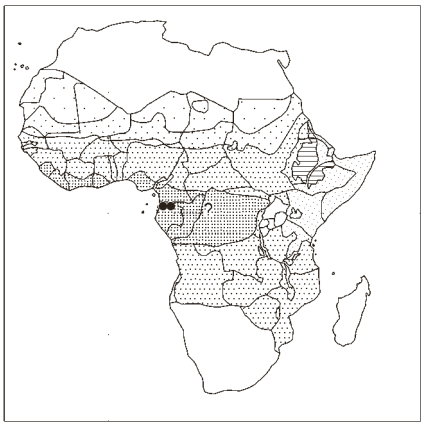
Genus (or subgenus) of 3 species, often floating plants with reduced leaves and digitately arranged or capitately condensed spikelets. *A. cephalotes* (Vahl.) Kurz (bas.: *Cyperus cephalotes*

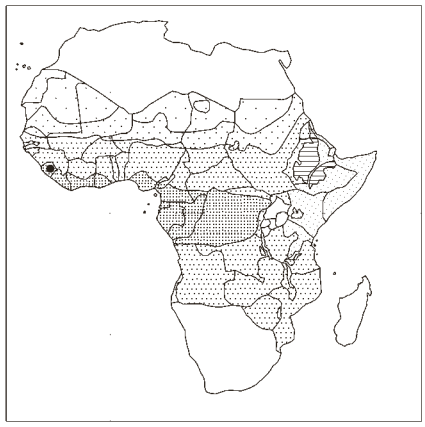

Abildgaardia hygrophila

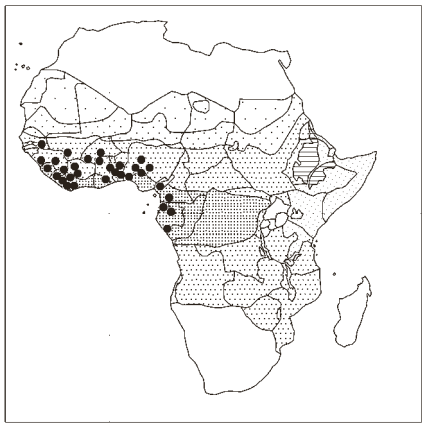

Abildgaardia ovata

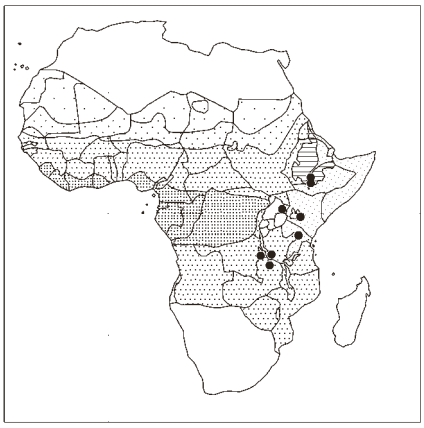

Abildgaardia triflora

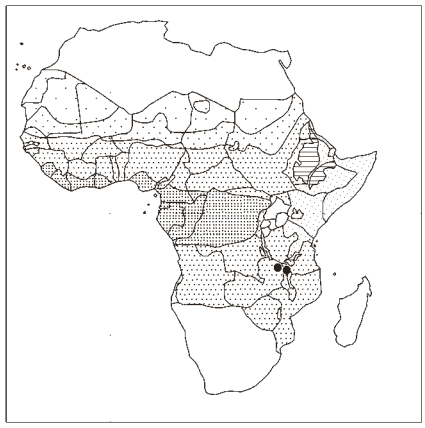

Actinoschoenus repens

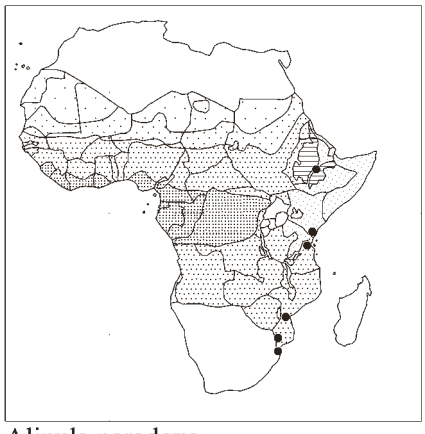

Actinoschoenus thouarsii
(A. aphyllus)

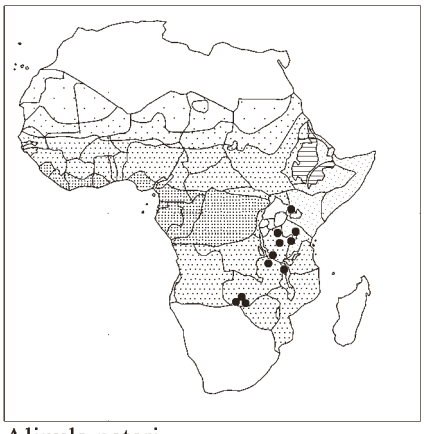

Afrotrilepis jaegeri

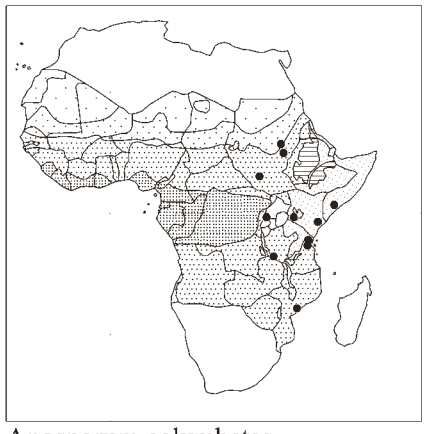

Afrotrilepis pilosa


Alinula lipocarphioides


Alinula malawica


Alinula paradoxa


Alinula peteri


Anosporum colymbetes

Vahl) occurs in Asia, from India, Indian Ocean islands, through to NE Australia (Fl. China 23: 228, 2010).

Anosporum colymbetes (Kotschy & Peyr.) Boeckeler – Icon.: Kotschy & Peyritsch, Pl. tinn.: pl. 24, 1867; Haines & Lye, Sedges & rushes E. Afr.: 172, 1983.

bas.: ***Cyperus colymbetes*** Kotschy & Peyr.

Robust perennial herb often floating; rhizome ± woody, erect or creeping from which new culms develop at irregular intervals; culms 20−70 cm long, 3−5 mm ∅, sharply triangular to winged, glabrous; *leaf blades absent*; sheaths *wide*, 1−20 cm long, reddish-brown to purple, ending in a thin ligule and a thick triangular apex; inflorescence capitate, 1−2,5 cm ∅, with 3−20 sessile spikelets per head; these ovoid, 0,6−1,5 × 0,4−1 cm, reddish-brown.

Muddy places, swampy ground, dried-up pools; in shallow standing water; often floating in swamps and irrigation canals; 10−950 m alt.

Very closely related to *A. pectinatum*.

A. pectinatum (Vahl) Lye – Icon.: Berhaut, Fl. ill. Sénégal 9: 202, 1988; Gordon-Gray, Cyper. Natal.: 64, 1995 (fruit); Fl. Eth. & Eritrea 6: 440, 1997 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 152, 2010; Fl. Gabon 44, Cyper.: 39, 2012.

bas.: ***Cyperus pectinatus*** Vahl

syn.: *C. nudicaulis* Poir.; *Anosporum nudicaule* (Poir.) Boeckeler; *Atomostylis cyperiformis* Steud.; *A. flavescens* Steud.

Perennial tufted herb similar to *A. colymbetes*; rhizome short, sometimes stoloniferous; culms 25−120 cm long, 0,8−1,3 (not 3−5) mm ∅, rounded, with longitudinal grooves, glabrous, erect when young, then curving; leaf blades absent; sheaths grayish-black to purple, ending in a short triangular limb; inflorescence capitate with 2−11(−20) spikelets; involucral bract 0,5−2 mm long (not 8−12 mm).

Sphagnetum; swamps; lake edges; in stagnant shallow water, sometimes floating; 0−2300 m alt.

Caprivi Strip, S. Africa, Swaziland; Madagascar. Probably introduced in the West Indies.

SYNONYMS:

Anosporum cubense (Poepp. & Kunth) Boeckeler = **Oxycaryum cubense**
nudicaule (Poir.) Boeckeler = **Anosporum pectinatum**
paraguayense Maury = **Oxycaryum cubense**

(APARTEA; RAPATEACEAE)

Apartea le-testui Pellegr. = **Mapania amplivaginata**

(ARCHAEOCAREX)

Archaeocarex dregeana (Kunth) Pissjauk. = **Schoenoxiphium rufum**
kunthiana (Kük.) Pissjauk. = **S. sparteum**
rufus (Nees) Fedde & J. Schust. = **S. rufum**
spartea (Wahlenb.) Pissjauk. = **S. sparteum**

(ARTHROSTYLIS)

Arthrostylis aphylla (Vahl) Boeckeler = **Actinoschoenus thouarsii**
chinensis Benth. = **A. thouarsii**

filiformis Thwaites = **A. thouarsii**
humbertii (Cherm.) Kük. = **A. thouarsii**
thouarsii Kunth = **A. thouarsii**

ASCOLEPIS / *21 + 1* ?

syn.: *Platylepis* Kunth 1837, nom. illeg.; *Pterachne* Schrader ex Nees 1842, nom. nud. in syn.; *Pterogyne* Schrader ex Nees 1842, idem; *Antrolepis* Welwitsch 1859, nom. provis.; *Cyperus* sect. *Ascolepis* (Nees ex Steud.) Bauters (Phytotaxa 166: 35, 2014).

Genus of 20/21/22 species (cf. Larridon & al. 2014: 35), pantropical but mainly in Africa; two extending to Madagascar, one of them to Thailand, Viet-Nam, Laos; and the other to C. & S. America from Panama, Guyanas S to Argentina (cf. Goetghebeur 1998: 171).

In tropical Africa *A. lineariglumis* var. *pulcherrima* has a bright orange inflorescence, and in *A. protea* it is sometimes orange or red.

Ascolepis species have eligulate leaves, capitate inflorescences with 1-few spikes; primary bracts are leaflike, and the spikes have many densely spirally arranged spikelet bracts, much smaller than their spikelet; the nuts are exceptionally small (Cook, Aquat. pl. book, ed. 2: 67, 1996).

HUYGH, W. & al. (2010). See above under **Alinula**.

LARRIDON, I. & al. (2014). Taxonomic changes in C_4 Cyperus (Cypereae, Cyperoideae, Cyperaceae): combining the sedge genera Ascolepis, Kyllinga and Pycreus into Cyperus s. l. *Phytotaxa* 166: 33−48.

REYNDERS, M. & al. (2011). Nomenclature and typification of names of genera and subdivisions of genera in the Cypereae (Cyperaceae): 3. Names in segregate genera of Cyperus. *Taxon* 60: 885−895.

UBERTI, N. & al. (2016). See above under **Alinula**.

Ascolepis ampullacea J. Raynal – Icon.: Adansonia, Sér. 2, 13: 160, 1973; ibid. 19: 296, 1980; Haines & Lye, Sedges and rushes E. Afr.: 310, 1983.

syn.: ***Cyperus ampullaceus*** (J. Raynal) Bauters

Annual slender herb 5−10 cm tall; leaves setaceus, to 3 cm long, sheaths purple; stems filiform; inflorescence a solitary head c. 6 mm ∅, of 2−3 *snow-white* spikes c. 4 mm long, 3,5 mm wide.

Lateritic plain at edge of marsh.

Known only from the type collected in 1961.

A. brasiliensis (Kunth) Benth. ex C. B. Clarke; Phytotaxa 166: 37, 2014 (under *Cyperus*). – Icon.: Adansonia, Sér. 2, 19: 292, 1980; Fl. Sénégal 9: 146, 1988 (details); Cook, Aquat. pl. book: 68, 1990.

bas.: *Platylepis brasiliensis* Kunth

syn.: *P. guianensis* Nees; *P. leucocephala* Nees; *P. xanthocephala* Nees; *Ascolepis leucocephala* (Nees) L. T. Eiten; *Kyllinga decora* Steud.; ***Cyperus brasiliensis*** (Kunth) Bauters

Perennial erect, loosely tufted herb; stem base slightly bulbously thickened, covered by a few *reddish brown* not fibrous sheaths; stem 15−50 cm tall, 0,6−1 mm ∅; inflorescence of 1−4 spikes, creamy white to pale yellowish brown; apical spike ovoid, 0,8−1,4 cm long, lateral ones more rounded, 0,3−0,8 mm long.

Swamps; marshland; savanna near river.

Madagascar; C. America, Panama, S-wards in S. America from Venezuela, Guyanas to Argentina.

ASCOLEPIS BRASILIENSIS

REUTEMANN, A. G. & al. (2014). Typical cyperoid reproductive structures in Lipocarpha humboldtiana and Ascolepis brasiliensis (Cypereae-Cyperoideae-Cyperaceae): New evidence from a development perspective. *Flora* 209: 15–22.

Similar in habit to *A. capensis* but stouter.

A. capensis (Kunth) Ridl., incl. var. *lacera* C. B. Clarke and var. *pleiostachya* Kük. – Icon.: Tredgold & Biegel, Rhodes. wild flowers: 2, 1979; Adansonia, Sér. 2, 19: 290, 1980; Gordon-Gray, Cyper. Natal: 24–25, 1995; Fl. Eth. & Eritrea 6: 492, 1997; Burrows & Willis, Pl. Nyika Plateau, Malawi: 296, 2005; Fl. Trop. E. Afr., Cyper.: 272, 2010; Salter & Davenport, Orchids & wildflowers Kitulo Plateau: 21, 2011; Fl. Gabon 44, Cyper.: 12, 2012.

bas.: *Platylepis capensis* Kunth, non *Cyperus capensis* (Steud.) Endl.

syn.: *P. dioica* Steud. 1855, non *Cyperus dioicus* Johnston 1924; ***Cyperus ascocapensis*** Bauters

Tufted perennial herb on a wood short ascending rhizome with *subterranean runners*; stem base slightly bulbously thickened, covered by *dark brown* to *blackish fibrous* sheaths; stem 20–80 cm tall, 0,5–1,3 mm ∅; inflorescence of 1–6 spikes, creamish-white, ± spheroidal, 0,6–1 cm long, 1–1,2 cm ∅, simulating an *Eriocaulon*. A very elegant plant (Rendle, Cat. Afr. Pl. Welwitsch 2(1): 131, 1899).

Spongy meadows grown with short herbage with *Eriocaulon* spp.; swamps; boggy grassland; temporarily wet grassland; spongy marshy places with *Disa* spp., *Habenaria* spp.; 100–2590 m alt.

S. Africa, Swaziland.

A. densa Goetgh. 1980, non *Cyperus densus* Link 1820. – Icon.: Adansonia, Sér. 2, 19: 284, 1980; Haines & Lye, Sedges and rushes E. Afr.: 307, 1983.

syn.: ***Cyperus ascodensus*** Goetgh.

Tufted perennial herb; stem base bulbously thickened, covered by a few withering leaf sheaths; stem 10–40 cm tall, 0,3–1 mm ∅; leaves basal and sub-basal, blade to 8 cm long, 0,5–1 mm wide; inflorescence capitate, ± globose, a solitary spike 5–8 mm ∅, whitish.

Seasonally waterlogged depression; dambo; 1400–1900 m alt.

A. dipsacoides (Schumach.) J. Raynal subsp. **dipsacoides**. – Icon.: Adansonia, Sér. 2, 8: 101, 1968; idem, 19: 298, 1980; Berhaut, Fl. ill. Sénégal 9: 147, 1988.

bas.: *Kyllinga dipsacoides* Schumach.

syn.: *Ascolepis gracilis* Turrill ; *A. setigera* Hutch., nom. invalid.; ***Cyperus dipsacoides*** (Schumach.) Bauters

Loosely tufted annual herb; stem 5–20 cm tall, 0,4–0,6 mm ∅; leaves 2–4, only near base of stem, 2–4 cm long, sheaths purplish; inflorescence of 1–5 spikes, yellowish green; apical spike 4–6 mm long, ovoid, lateral ones 2–3 mm, more spherical.

Sands temporarily humid, swampy places; often in cultivated places.

Thailand, Laos, Vietnam [subsp. **siamensis** (C. B. Clarke) J. Raynal; fig. in Adansonia, Sér. 2, 19: 298, 1980].

Resembling *Lipocarpha kernii*.

(**A. elata** Welw.), non *Cyperus elatus* Rottb. (= *C. distans*); Meneses in Garcia de Orta 4/2: 259, 1956; Haines & Lye, Sedges and rushes E. Africa: 304, 1983; Figueiredo & Smith, Pl. Angola: 178, 2008.

ASCOLEPIS ELATA

According to Haines & Lye (l.c.) *A. elata* "is superficially most similar to *A. lineariglumis*, but *A. elata* is a more robust species, with thicker and shorter squamellae [glumes 6–9 mm long] and a much larger nutlet" [1,6–1,8 mm long, 0,5–0,6 mm wide]. On the other hand, Larridon & al. (Phytotaxa 166: 35–36, 2014) include the species in the complex of *Ascolepis protea*, and do not combine these two names under *Cyperus*.

Type (Welwitsch 1670, Pungo Andongo) from Angola. Meneses (l.c.) considered *A. bellidiflora* (Welw.) Cherm. [= *A. protea* subsp. *bellidiflora*] and *A. protea* var. *splendida* K. Schum. in Warburg, Kunene-Sambesi-Exp.: 177, 1903 [= *A. lineariglumis*] as synonyms of *A. elata*. He cites two Gossweiler specimens (2165, 3804) from Huíla, Ganguelas.

Specimens from Nigeria, Chad, Sudan, Burundi (cf. Fl. W. Trop. Afr., ed. 2, 3/2: 327, 1972) probably belong to *A. lineariglumis*.

Not mapped by us.

A. eriocauloides (Steud.) Nees ex Steud.; Sebsebe Demissew & al. in Biol. Skr. 55: 324, 2005; Darbyshire & al., Pl. Sudan & S. Sudan: 101–102, 2015. – Icon.: Adansonia, Sér. 2, 19: 282, 1980; Haines & Lye, Sedges and rushes E. Africa: 308, 1983; Fl. Eth. & Eritrea 6: 492, 1997.

bas.: *Kyllinga eriocauloides* Steud.

syn.: *Isolepis ascolepis* A. Rich.; ***Cyperus eriocauloides*** (Steud.) Bauters

Loosely tufted perennial herb; stem base slightly bulbously thickened, covered by a few brownish sheaths, at last becoming fibrous; stems few, 5–26 cm long, 0,3–0,7 mm ∅; leaves 1–3, blade to 10 cm long; inflorescence capitate, the solitary spike 0,4–1 cm ∅, hemispherical, whitish.

Seasonally wet grassland or seepage areas on shallow soils over rocks; 1300–2500 m alt.

A. erythrocephala S. S. Hooper – Icon.: Kew Bull. 37: 606, 1983; Haines & Lye, Sedges and rushes E. Africa: 309, 1983.

syn.: *Cyperus erythrocephalus* (S. S. Hooper) Bauters

Annual, very slender herb with minute root-system; stems angular, 3–10 cm tall, 0,25–0,5 mm ∅; leaves basal or nearly so, 1–4 cm long, 0,5 mm wide; inflorescence terminal, solitary, *reddish brown*, 2,5–5 mm ∅, consisting of 1 rounded to cylindric spike and sometimes with 1–5 smaller spikes as its base.

Damp sandy ground between grass tussocks; drying ditch in secondary grassland; 900–1650 m alt.

Near *A. pusilla* and growing together with it; ephemeral that tends to escape observation.

A. fibrillosa Goetgh., non *Cyperus fibrillosus* Kük. 1921 – Icon.: Bull. Jard. Bot. Natl. Belg. 47: 440, 1977; Adansonia, Sér. 2, 19: 288, 1980.

syn.: ***Cyperus ascofibrillosus*** Goetgh.

Tufted perennial herb; stem base bulbously thickened, covered by a dense fibrous coat of withered sheaths; stems 40–70 cm tall, 1–1,5 mm ∅; leaves 20–35 cm long, 1,5–2,5 mm wide; inflorescence capitate, the solitary spike 1,5–2,5 cm ∅, spheroidal, yellowish white.

Grass savanna; degraded open *Brachystegia* woodland.

A. hemisphaerica Peter ex Goethgh., non *Cyperus hemisphaericus* Boeckeler 1859. – Icon.: Adansonia, Sér. 2, 19: 282, 1980; Haines & Lye, Sedges and rushes E. Africa: 307, 1983; Ntore &

al., Red List of the endemic range-restricted vascular plants of Burundi: 157, 2018.

syn.: ***Cyperus ascohemisphaericus*** Goetgh.

Perennial (may look like an annual) herb, very often with thin stolons 1−10 cm long; stem base slightly thickened with remnants of leaf sheaths; stems 3−40 cm tall, 0,5−1,2 mm ∅; leaf blades 5−15 cm long, 1−2 mm wide; inflorescence white, globose to hemispherical, 0,8−1,3 cm ∅.

Moist roadside ditch and bank; seasonally inundated grassland; wooded grassland; often on sand beside water courses; 1250−1860 m alt.

A. lineariglumis Lye, incl. var. *pulcherrima* Lye; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: Adansonia, Sér. 2, 19: 280, 1979 (as *A. protea* var. *splendida*); Nord. J. Bot. 2: 562, 1982; Haines & Lye, Sedges and rushes E. Africa: 304, 1983; Flora 176: 63, 1985.

syn.: *A. protea* Welw. var. *splendida* K. Schum.

Annual or perennial tufted herb; stem bases enclosed in old fibrous leaf sheaths; stems compressed or triangular, 10−50 cm tall, 0,4−1,2 mm wide; leaves 10−25 cm long, c. 1 mm wide, midrib of blade strongly protruding beneath, margin with minute scattered teeth; inflorescence white (*bright orange in var. pulcherrima*), spherical, 1,5−5 cm ∅; "all glumes about equally long, the apical part very elongated, giving the head a most beautiful appearance" (Adansonia, l.c., p. 281).

Moist or boggy grassland; seasonally wet swamps; swampy source near river side; 300−1900 m alt. – Said to be common in S Tanzania.

The locality in Angola (Baum 158) is often erroneously situated in Zimbabwe.

Larridon & al. (Phytotaxa 166: 35−36, 2014) include *A. lineariglumis*, as well as *A. elata* (See above), in the complex of *A. protea* and do not combine them under *Cyperus* as separate species.

A. majestuosa "majestuosus" P. A. Duvign. & G. Léonard – Icon.: Adansonia, Sér. 2, 19: 300, 1980.

syn.: ***Cyperus majestuosus*** (P. A. Duvign. & G. Léonard) Bauters

Tufted perennial, xerophytic herb; stem base bulbously thickened, covered by a dense coat of dark brown to almost blackish sheaths, becoming fibrous; stem 20−40(−80) cm tall, 1−1,5 mm ∅; inflorescence condensed, 1−5 cm ∅, hemispherical, yellowish white, brownish at base, with 3−7 tightly packed spike-like structures.

Savanna with *Berlinia giorgii*.

A. menonguensis Meneses – Icon.: Garcia de Orta 4: 261, 1956; Adansonia, Sér. 2, 19: 294, 1980.

Perennial tufted herb on ascending rhizome; stem base slightly bulbously thickened, covered by pale brown to red-brown sheaths; stems 20−40 cm tall, 1−1,8 mm ∅, triquetrous near the top, canaliculate, sharply keeled; inflorescence capitate, of *1 spike* creamish white, spheroidal, c. 1 cm ∅.

Humid grassy valley.

Only known from the type collected in 1906.

Taxonomic status uncertain. According to Larridon & al. (Phytotaxa 166: 35−36, 2014) this plant "is probably an aberrant form of *A. protea*". So they did not combine the name under *Cyperus*.

A. metallorum P. A. Duvign. & G. Léonard – Icon.: Bull. Soc. Roy. Bot. Belg. 96: 107, 1963; Adansonia, Sér; 2, 19: 282, 1980.

syn.: ***Cyperus metallorum*** (P. A. Duvign. & G. Léonard) Bauters

Tufted perennial herb with stem base slightly bulbously thickened, covered by a sometimes dense mass of pale brown fibrous leaf sheath remnants; stem 10−20 cm tall, 0,3−0,7 mm ∅; inflorescence capitate, of 1-spike, spheroidal, 5−8 mm ∅, often dark coloured, brownish white.

Fine compact soil very rich in ("poisoned by") zinc and lead: "only one species [*A. metallorum*] can survive these conditions forming a monophytic steppe" (Bull. Soc. Roy. Bot. Belg. 90: 268, 1958).

A hyperaccumulator of copper (1200 µg/g dry weight) and cobalt (R. R. Brooks, Plants that hyperaccumulate heavy metals: 80, 1998; Faucon & al. in Pl. Ecol. Evol. 143: 9, 2010).

A. neglecta Goetgh., non *Cyperus neglectus* Parl. 1846 (= *Cyperus longus* subsp. *longus*). – Icon.: Bull. Jard. Bot. Natl. Belg. 47: 442, 1977; Adansonia, Sér. 2, 19: 288, 1980.

syn.: ***Cyperus asconeglectus*** Goetgh.

Tufted perennial herb with stem base bulbously thickened, covered by a dense coat of red brown to dark brown leaf sheaths becoming fibrous; stems 40−60 cm tall, 0,8−1 mm ∅; inflorescence capitate, of 1 spike 1,5−2 cm ∅, hemispherical, ± *pale brown*.

Wet savanna, on badly drained sandy soil.

A. pinguis C. B. Clarke, non *Cyperus pinguis* (Clarke) Mattf. & Kük.; Renier, Flore du Kwango 1: 68, 1948. – Icon.: Adansonia, Sér. 2, 19: 294, 1980; Haines & Lye, Sedges and rushes E. Africa: 303, 1983.

syn.: ***Cyperus ascopinguis*** Goetgh.

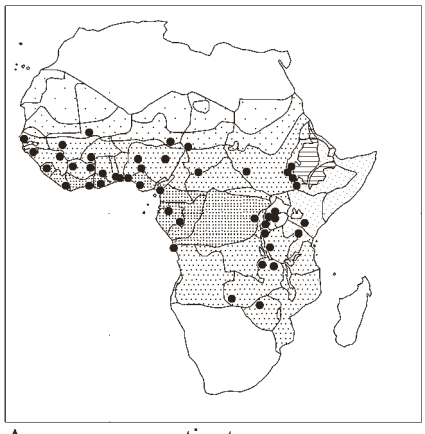
Tufted perennial herb with stem base bulbously thickened, covered by a dense coat of reddish brown to dark brown leaf sheaths, becoming ± fibrous; stems 20−100 cm tall, 0,8−2 mm ∅; leaves 15−40 cm long, 1−4 mm wide; inflorescence capitate, of 1 spike *3−8 cm* ∅, hemispherical, yellowish white to pale yellowish brown; involucral bracts 2−4, to *15 cm* long, *reddish-nerved*.

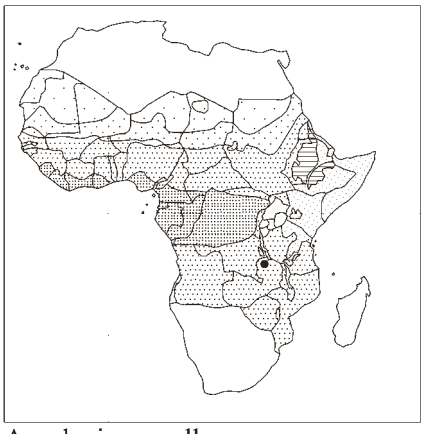
Swampy grassland; 800−1700 m alt.

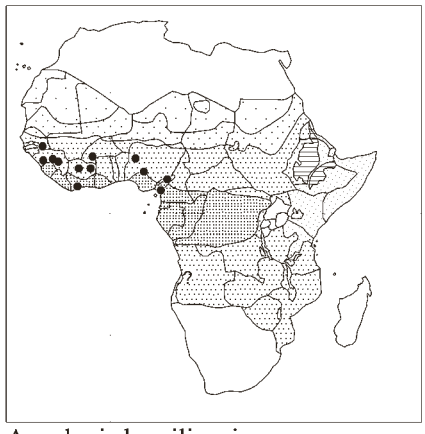
Confused with luxuriant forms of *A. protea* var. *bellidiflora*, *A. lineariglumis*.

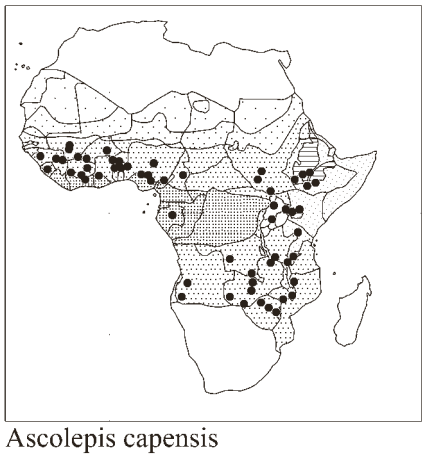
A. protea Welw.; Renier, Flore du Kwango 1: 68, 1948; Burrows & Willis, Pl. Nyika Plateau, Malawi: 297, 2005; Mbayngone & al. in Etudes florist. vég. Burkina Faso: 35−38, 2005; Lisowski, Fl. Rép. Guinée 1: 392, 2009; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: Trans. Linn. Soc. London 27: pl. 24/9−13, 1869 (*A. anthemiflora*); Haines & Lye, Sedges and rushes E. Africa: 304 (var. *santolinoides*), 305 (vars. *bellidiflora* and *anthemiflora*), 306 (vars. *rhizomatosa* and *atropurpurea*), 1983; Fl. Sénégal 9: 148, 1988 (*A. protea*); Fl. Eth. & Eritrea 6: 491, 1997 (subsp. *bellidiflora*); Young in Orchids S. Africa 42/1: 47, 2011 (photo. *A. protea*).

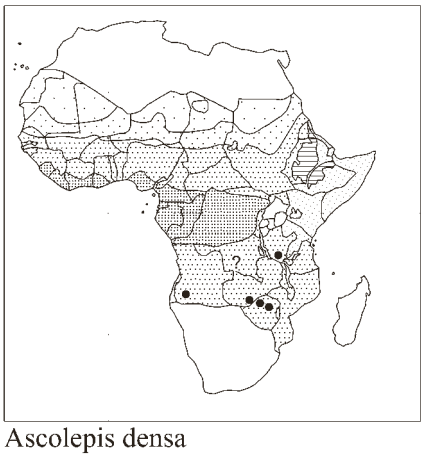
"The rather common African *A. protea* Welw. is highly polymorphic and inviting a biosystematic study" (Goetghebeur 1998: 171). Already in 1980 Goetghebeur wrote (Adansonia, Sér. 2, 19: 275): "This common species has caused much trouble in the past, and it will be continuing in the future, since in many localities there exist ± differentiated populations, indicating an active speciation process; quite a lot of them may deserve a taxonomic treatment on varietal or even specific level: auto-ecological and reproductional studies as well as accurate observations on glume shape and texture at different developmental stages would be very useful for elaborating such a treatment. Obviously, a few taxa of the

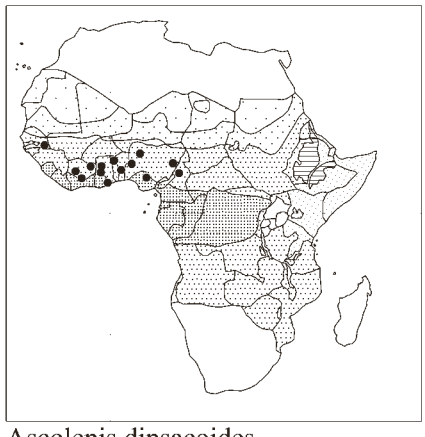

Anosporum pectinatum

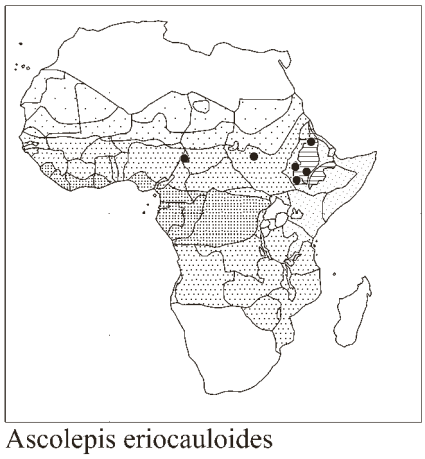

Ascolepis ampullacea

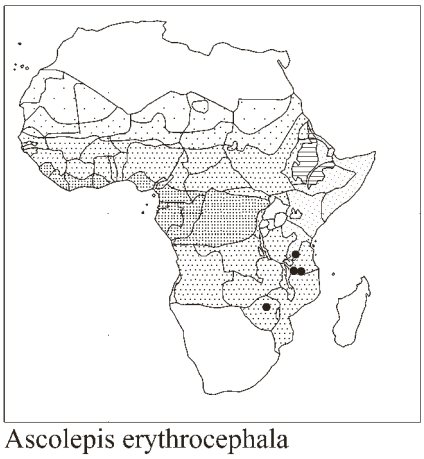

Ascolepis brasiliensis

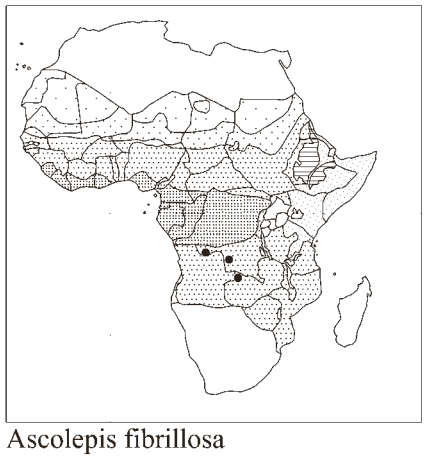

Ascolepis capensis

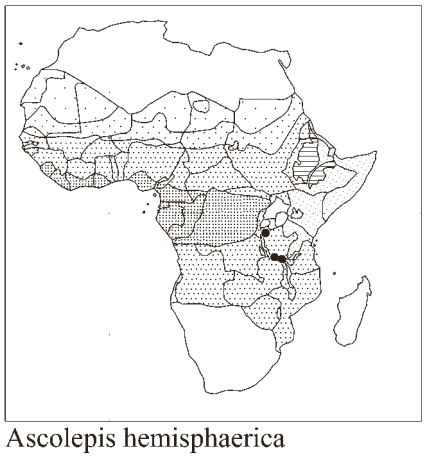

Ascolepis densa

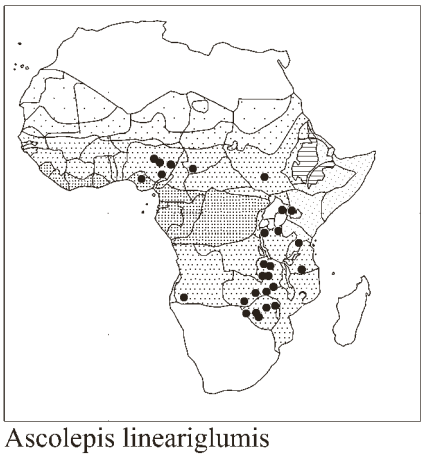

Ascolepis dipsacoides
subsp. dipsacoides

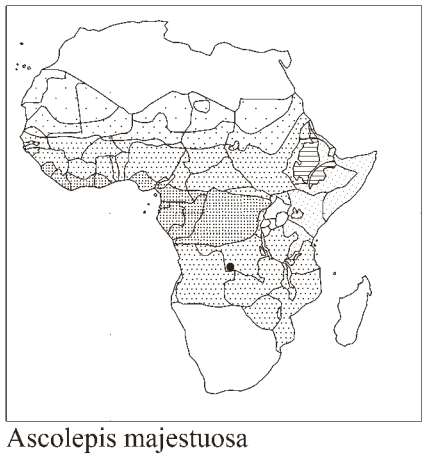

Ascolepis eriocauloides


Ascolepis erythrocephala


Ascolepis fibrillosa


Ascolepis hemisphaerica


Ascolepis lineariglumis


Ascolepis majestuosa

A. protea-complex are yet well established and sharply limited: I consider them as species, e.g. *A. eriocauloides, A. hemisphaerica, A. metallorum*, … The limits of other taxa are very diffuse, for intermediate specimens are not infrequent, although typical plants are very easily recognizable and widely different from one another: for the time being, varietal names seem appropriate to give expression to these diverging taxa."

Goetghebeur then proposed 7 varieties. This treatment was followed by us in our Enumération 3: 170−171, 1995. Later, the Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, recognised 4 varieties, the same as those retained by Beentje in Flora of Tropical East Africa, Cyperaceae: 269−271, 2010. A key to these four varieties is based on the following features: shape and colour of the inflorescence (i.e., globose or ± hemispherical or flattened; bright yellow or orange or red, or white), the size of the inflorescence (∅), the length of the involucral bracts, and also the altitudinal range. Beentje added: "While most specimens can be keyed quite easily, intermediates do occur".

In our present compilation we do not formally divide the species into varieties (or sub-species as proposed by Lye in Haines & Lye, Sedges and rushes E. Africa: 304−307, 1983). However, we give a summary of names and synonyms. In the actual World Checklist of Selected Plant Families *Ascolepis protea* Welw. is cited under *Cyperus* as *C. proteus* (Welw.) Bauters (cf. Phytotaxa 166: 38, 2014).

syn.: *A. elata* sensu Andrews, Flow. pl. Sudan 3: 328, 1956, non Welw.; ***Cyperus proteus*** (Welw.) Bauters – See also below under the varieties.

Perennial ± tufted herb without runners; stems obscurely 3-angled, 5−60 cm tall, 0,5−2,3 mm ∅, base sometimes swollen, often covered by fibrous remains of leaf sheaths; leaves filiform, 7−26 cm long; inflorescence globose or flattened, 0,5−4 cm ∅, snow-white, pale yellow, orange, or red – "the rayed heads bear a remarkable resemblance to those of many *Compositae* with numerous rows of ray-florets" (C. B. Clarke in Fl. Trop. Afr. 8: 475, 1902).

Miombo woodland in seepage zones or along streams; swampy grassland; seasonal floodplain; seasonally moist depression; lateritic zones; rather damp rocky somewhat spongy pastures with *Isoetes huillensis*; damp flat rock in burnt grassland; rice fields; granite outcrops; ?-950−2350 m alt.

? S. Africa. – In Fl. W. Trop. Afr., ed. 2, 3/2: 327, 1972, the specimen Audru 1245 cited was not collected in Senegal but in S Chad (the correct spelling is Danamadji).

A. protea has some resemblance to *Cyperus pulchellus, Kyllingiella microcephala*.

The following varieties figure in Fl. Trop. E. Afr., Cyper.: 270−271, 2010:

– var. *protea*, with white globose (5−10 mm ∅) inflorescences, involucral bracts 1−13 cm long, widespread and growing below 1300 m alt. [syn.: *A. protea* subsp. *protea* (Haines & Lye, o.c.: 304); *A. protea* var. *floribunda* Goetgh.; *A. protea* var. *kyllingoides* Welw.; *A. protea* var. *stellata* Goetgh.];

– var. *anthemiflora* (Welw.) Goetgh. ("*anthemidiflora*"), with flattened bright yellow-orange inflorescences (8−25 mm ∅), involucral bracts 1,5−10 cm long, in W-SW Tanzania, Zaire, Angola, Zambia, Malawi, at 1500−2200 m alt. [bas.: *A. anthemiflora* Welw.; syn.: *A. protea* subsp. *anthemiflora* (Welw.) Lye; *A. protea* subsp. *chrysocephala* Lye];

– var. *bellidiflora* Welw., with hemispherical inflorescences (10−40 mm ∅), "daisy-like", involucral bracts filiform 0,5−15 cm long, widespread, at 1100−2150 m alt. [syn.: *A. protea* var. *santolinoides* Welw.; *A. protea* var. *transiens* Kük.; *A. protea* var. *tuberosa* Kük.; *A. protea* subsp. *bellidiflora* (Welw.) Lye; *A. protea* var. *bellidiflora* Welw.; *A. bellidiflora* (Welw.) Cherm.; *A. protea* subsp. *rhizomatosa* Lye; See also Adansonia, Sér. 2, 19: 279, 1980];

– var. *ochracea* (Meneses) Goetgh., with globose yellow-orange-red inflorescences (8−20 mm ∅), involucral bracts 0,5−5 cm long, in SW Tanzania, Zaire, Angola, Zambia, at 1550−1700 m alt. [bas.: *A. speciosa* Welw. var. *ochracea* Meneses; syn.: *A. protea* subsp. *atropurpurea* Lye].

A. elata Welw., *A. lineariglumis* Lye and *A. menonguensis* Meneses belong to the *A. protea* complex according to Larridon & al. (Phytotaxa 166: 38, 2014). – See above under these species.

A. pseudopeteri Goetgh. – Icon.: Adansonia, Sér. 2, 19: 284, 1980.

syn.: ***Cyperus pseudopeteri*** (Goetgh.) Bauters

Loosely tufted perennial herb with stem base slightly thickened, surrounded by a few ± withering leaf sheaths; stems 5−15 cm tall, 0,2−0,5 mm ∅; leaves relatively abundant; inflorescence capitate, of 1 spike *4−6 mm* ∅, spheroidal, *yellow to orange brown*.

Ecology unknown.

Only known from the type (Simon & Williamson 1991).

A. pusilla Ridl., incl. var. *cylindrica* S. S. Hooper, var. *echinata* S. S. Hooper, var. *microcuspis* Lye, non *Cyperus pusillus* Vahl 1805 (= *Pycreus pumilus* (L.) Nees); Meneses in Garcia de Orta 4/2: 259, 1956. – Icon.: Trans. Linn. Soc. London, Ser. 2, Bot. 2: pl. 23/10−14, 1884; Adansonia, Sér. 2, 8: 101, 1968; idem 19: 296, 1980; Kew Bull. 37: 606, 1983; Fl. Sénégal 9: 149, 1988; Clarke & Mannheimer, Cyper. Namibia: 25, 66 (map), 1999; Cyperaceae in Namibia (Sabonet News 9/1: 18, 2004).

syn.: *Lipocarpha multibracteata* C. B. Clarke 1902, non *Cyperus multibracteatus* Boeckeler 1875; ***Cyperus ascopusillus*** Goetgh.

Annual herb; stems slender, 1−25 cm tall, 0,3−0,6 mm ∅, triangular or rounded with deep furrows; leaves 1−2 at base, 2−8 cm long, 0,5−1 mm wide, often with small reddish dots; inflorescence yellowish brown or grey-brown, ellipsoid, 2−6 mm ∅, with usually 2−5 clustered rounded spikes, forming a lobed *Kyllinga*-like head.

Fields after the *Sorghum* harvest; damp pastures; boggy ground; seepage zones in woodland area; a weed in ricefields; hollow in littoral dunes; bare sands temporarily humid; 0−1800 m alt.

Namibia; introduced in Madagascar; Thailand, Vietnam.

"This plant is exceedingly like the small species of *Lipocarpha* as *L. microcephala*…" (C. B. Clarke in Fl. Trop. Afr. 8: 477, 1902). *Ascolepis pusilla* is the type of *Ascolepis* [unranked] *Pseudolipocarpha* C. B. Clarke (o.c.: 474); cf. Reynders & al. in Taxon 60: 887, 2011.

A. speciosa Welw. 1869, excl. var. *ochracea* (Meneses) Goetgh. (= *A. protea*), non *Cyperus speciosus* Vahl 1805. – Icon.: Adansonia, Sér. 2, 19: 288, 1980.

syn.: *A. oliveri* Vatke & Höpfner ex C. B. Clarke, nom. nud.; *A. vatkeana* Boeckeler; ***Cyperus vatkeanus*** (Boeckeler) Goetgh.

Tufted perennial herb with stem base bulbously thickened, covered by a dense mass of ribbon-like leaf sheath remnants; stems 15−40 cm tall, 2−3 mm ∅; leaves c. 1/2 the length of the stem; inflorescence capitate, spheroidal, with 1 spike 1,5−2,5 cm ∅, *orange* to *brownish red*.

Rather damp lofty pastures flooded in rainy season, with *Thymelaeaceae*; c. 1650 m alt.

ASCOLEPIS

A. spinulosa Goetgh. 1977, non *Cyperus spinulosus* Roxb. 1820. – Icon.: Adansonia, Sér. 2, 19: 284, 1980.

syn.: ***Cyperus ascospinulosus*** Goetgh.

Tufted *perennial herb* with stem base conspicuously *bulbously thickened*, covered by *dark red brown* to *blackish* leaf sheaths, *becoming fibrous*; stems 5−20 cm tall, 1 mm ∅; leaves rather thick; inflorescence capitate of 1 spike 7−10 mm wide, hemispherical, yellowish white; tip of bract and glume *minutely spinulose* due to *projecting cells*.

Grassy plateau in wet savanna zone; 1100−1700 m alt.

A. trigona Goetgh. 1980, non *Cyperus trigonus* Boeckeler 1888. – Icon.: Adansonia, Sér. 2, 19: 284, 1980.

syn.: ***Cyperus ascotrigonus*** Goetgh.

Loosely tufted perennial herb with stem base slightly thickened, surrounded by a few withering leaf sheaths; stems 10−25 cm tall, 0,3−0,6 mm ∅; inflorescence capitate, of 1 spheroidal spike 5−7 mm ∅, whitish or yellowish; apical part of glume 0,5−1 mm long, *dorsiventrally flattened*, *plump triangular*; ripe fruit unknown.

Ecology unknown. – Robinson collected this plant in Zambia, N. Province (Lock in Kew Bull. 70/4: § 46: 3, 2015).

SYNONYMS (See also above under *A. protea* for varieties):

Ascolepis anthemiflora Welw. = **Ascolepis protea**
bellidiflora (Welw.) Cherm. = **A. protea**
elata sensu Andrews, Flow. pl. Sudan 3: 328, 1956, non Welw. = **A. protea**
gracilis Turrill = **A. dipsacoides**
leucocephala (Nees) L. T. Eiten = **A. brasiliensis**
oliveri Vatke & Höpfner ex C. B. Clarke, ms. = **A. speciosa**
peteri Kük. 1936 = **Alinula peteri**
protea Welw. var. *splendia* K. Schum. = **Ascolepis lineariglumis**
speciosa Welw. var. *ochracea* Meneses = **A. protea**
vatkeana Boeckeler ex C. B. Clarke = **A. speciosa**

(ASCOPHOLIS)

Ascopholis gamblei C. E. C. Fisch. = **Mariscus amomodorus**

(ASTEROCHAETE)

Asterochaete angustifolia Nees = **Carpha glomerata**
glomerata (Nees) Nees = **C. glomerata**
tenuis Kunth = **C. glomerata**

(ATOMOSTYLIS)

Atomostylis cyperiformis Steud. = **Anosporum pectinatum**
flavescens Steud. = **A. pectinatum**

(BAEOTHRYON)

Baeothryon confervoides (Poir.) A. Dietr. = **Websteria confervoides**
fistulosum (Schult.) A. Dietr. = **Eleocharis acutangula** subsp**. acutangula**
retroflexum (Poir.) A. Dietr. = **E. retroflexa**
variegatum (Poir.) A. Dietr. = **E. variegata**

(BAUMEA)

Baumea iridifolia (Nees) Boeckeler = **Machaerina flexuosa** subsp. **flexuosa**
iridifolia subsp. *laevinux* J. Raynal = **M. flexuosa** subsp. **laevinux**

(BISBOECKELERA)

Bisboeckelera paporiensis Suess. = **Diplacrum capitatum**

BOLBOSCHOENUS / *3 + 1* ?

"A genus of 6−15 species from Europe, N America and Australia" (Walters & Knees in European Garden Flora, ed. 2, 1, Monocot.: 413, 2011). Cook (Aquatic and wetland plants of southern Africa: 83, 2004) cites "+ 6 or 1 polymorphic species: cosmopolitan". Five species (out of 15) are listed as weeds; *B. maritimus* is considered among the world's worst weeds, … a pest in agricultural lands and waterways in Africa, Asia, Australia, Europe, and North and South America (Bryson & Carter in Naczi & Ford, eds., Sedges: Uses, diversity and systematics of the Cyperaceae: 30−31, 2008).

Bolboschoenus (Asch.) Palla is a segregate of the genus *Scirpus* s.l. (Pignotti in Webbia 58: 281, 2003). There has been much controversy in the taxonomical treatment of the species. The taxonomic treatment was dependent on a new lectotypification of the name *Scirpus maritimus*. The original lectotype of this name was in serious conflict with the protologue, because of its North American origin; a new lectotype together with an epitype, representing a specimen from coastal E Sweden, was chosen. This new lectotypification enabled an unequivocal interpretation of the name *S. maritimus* and subsequently to solve the questions of correct nomenclature [cited from Marhold & al. in Phyton (Horn) 44: 3, 2004].

"The circumscription of numerous species is difficult due to morphological variation associated with the poorly understood influence of habitat conditions and likely interspecific hybridization… As the most distinguishing characters are found in the achene shape and pericarp anatomy" (Amini Rad & al. in Nord. J. Bot. 28: 588−589, 2010).

Bolboschoenus species are perennial herbs with rhizomes often forming hard ovoid tubers. When young such tubers are sometimes used for nutrition, because of the high content of polysaccharides. "There is evidence that they were in use in this respect already in the Neolithic…" (Marhold & al., l.c.).

The leaves are keeled beneath; the inflorescences terminal, head-like or with 1−3 shortly stalked clusters of spikelets, the latter are rounded in section; the nut is flattened.

AMIET, J.-L . & al. (2018). *Les akènes des Bolboschoenus, Schoenoplectus et Eleocharis du Sud de la Drôme* (*Cyperaceae*). Documents de Botanique sud-drômoise. 6. Société linéenne de Lyon, Lyon. 87 pp. [*B. glaucus, B. maritimus.*]

BROWNING, J. B. M. (1998). *A contribution to the taxonomy of Bolboschoenus (Cyperaceae), with particular reference to fruit morphology and the African species*. Diss., Univ. Natal 1: 1−254; 2: 1−176.

BROWNING, J. & K. D. GORDON-GRAY (1993). Studies in Cyperaceae in southern Africa. 21: The taxonomic significance of the achene and its embryo in Bolboschoenus. *S. Afric. J. Bot.* 59: 311−318.

BROWNING, J. & K. D. GORDON-GRAY (1999). The inflorescence in southern species of Bolboschoenus (Cyperaceae). *Ann. Bot. Fennici* 36: 81−97.

BROWNING, J. & K. D. GORDON-GRAY (2000). Patterns of fruit morphology in Bolboschoenus (Cyperaceae) and their global distribution. *S. Afric. J. Bot.* 66: 63−71.

BROWNING, J. & al. (1997). Bolboschoenus glaucus (Cyperaceae), with emphasis upon Africa. *Nord. J. Bot.* 18: 475−482.

HROUDOVÁ, Z. & al. (2007). Taxonomy, distribution and ecology of Bolboschoenus in Europe. *Ann. Bot. Fennici* 44: 81−102.

MARHOLD, K. & al. (2004). The Bolboschoenus maritimus group (Cyperaceae) in Central Europe, including B. laticarpus, spec. nova. *Phyton (Horn)* 44: 1−21.

MARHOLD, K. & al. (2006). Typification of three names in the Bolboshoenus maritimus group (Cyperaceae). *Willdenowia* 36 (Special Issue): 103−113.

MISHRA, S. & al. (2015). A potential contribution of achene micromorphology and phytolith analysis in describing the systematics of genus Bolboschoenus from India. *Plant Syst. Evol.* 301: 955−966.

TATANOV, I. (2007). Synopsis taxonomica generis Bolboschoenus (Aschers.) Palla (Cyperaceae). *Novitates System Pl. Vascul.* 39: 46−149 (in Russian).

(**Bolboschoenus glaucus**) (Lam.) S. G. Sm.) – Icon.: Nord. J. Bot. 18: 478, 480, 481, 1998; S. Afric. J. Bot. 66: 69, 2000 (fruit); Cook, Aquat. & wetland pl. south. Afr.: 83, 2004 (inflorescence); Marhold & al. in Willdenowia 36: 107, 109, 2006 (as *Scirpus macrostachys*); Ann. Bot. Fennici 44: 83, 2007; Hrdoudová & al. in Kochia 4: 3 (fruit), 4 (inflorescence), 2009; Nord. J. Bot. 28: 592, 2010 (dry habitat specimen); Mishra & al. in Pl. Syst. Evol. 301: 960, 2015.

bas.: *Scirpus glaucus* Lam. 1791.

syn.: *S. maritimus* L. var. *glaucus* (Lam.) Nees, var. *tuberosus* (Desf.) DC. 1806 [and var. *tuberosus* Desf.) Roem. & Schult. 1817], var. *macrostachys* (Willd.) Dumort. 1827 [and var. *macrostachys* Vis. 1842], nom. illeg.; *S. maritimus* fa. *macrostachys* (Willd.) Junge 1908; *S. maritimus* fa. *macrostachys* (Vis.) Nilsson 1901; *S. tuberosus* Desf.; *S. macrostachys* Willd. 1809, nom. illeg., non *S. macrostachyos* Lam. 1791; *Reigera maritimus* (L.) Opiz var. *tuberosus* (Desf.) Opiz; *Bolboschoenus tuberosus* (Desf.) Hadac; *B. maritimus* (L.) Palla subsp. *tuberosus* (Desf.) T. Koyama quoad pl., and subsp. *macrostachys* (Willd.) Soják; *B. maritimus* var. *macrostachys* (Willd.) T. V. Egorova; *B. glaucus* var. *macrostachys* Tatanov; *B. macrostachys* (Willd.) Grossh. 1928, comb. illeg. – Cf. also Browning & al. in Nord. J. Bot. 18: 476−477, 1998.

Perennial herb 0,3−0,8−1,5 (tropical material) m tall; rhizome creeping, fleshy, with a tough persistent central core, with underground spherical-elliptical tubers 1,5−2 × 1,2−1,5 cm; stems single, sharply trigonous; lower leaf sheaths with an elongate V-shaped mouth without a projecting tongue; leaves shorter to longer than stem; blade 3−7 per stem, to 60 cm long, 0,4−1 cm wide; inflorescence simple or compound consisting of a central group of clustered ± sessile red to purple spikelets, accompanied by 2−6(−14) rays each to 3,5−5 cm long and wide; the whole inflorescence pseudo-lateral but later expanding to appear terminal; involucral bracts 1−2(−3), leaf-like.

A freshwater plant, frequently along streams, river sides and lake shores, semi-desert swamps, marshes; saline conditions; black mud; often associated with human settlements; also planted as waterfowl food, rice agriculture (Naczi & Ford, Sedges: uses…: 68, 2008); 0−1500 m alt. (S. Africa).

Variable in inflorescence structure, the morphotypes may be influenced by habitat conditions (cf. Amini Rad in Nord. J. Bot. 28: 592, 2010; and Browning & al., ibid. 18: 479, 1998).

Distribution area (not mapped by us): Mediterranean area through to NW India-Pakistan. Map for Europe in Ann. Bot. Fennici 44: 85, 2007 (from Portugal – S France – Italy – Hungary – Czech Republic – Balkans – S Russia); map for Iran in Nord. J. Bot. 28: 593, 2010. Map for Africa in Nord. J. Bot. 18: 481, 1998 [localities in SW Morocco, coastal Algeria, Egypt: Cairo; Senegal (i.a. locus classicus); E Africa from Ethiopia S-wards to S Zaire, S. Africa and Angola-Namibia]. Introduced in USA: New Hampshire new report in Rhodora 118/974: 227−228, 2016; before already known from California, Idaho, New York, and Oregon.

Amini Rad & al. revised the genus *Bolboschoenus* in Iran (Nord. J. Bot. 28: 588−602, 2010). They recongised *B. glaucus* at species level. As key character they use the achene structure: "achenes with the pericarp formed by a thin exocarp layer and a thick sclerenchymatic mesocarp".

The holotype of *Scirpus glaucus* Lam. ("Senegal, Roussilon s. n. in P-Herb. Lamarck 673 /14") was not seen by Amini Rad & al. (o.c.). J. Raynal determined this specimen as *Scirpus maritimus* (Nord. J. Bot. 18: 478, 1998). The difference between the species given by Amini Rad & al. is dubious. They write, themselves, that "the circumscription of numerous species is difficult due to morphological variation associated with the poorly understood influence of habitat conditions and likely interspecific hybridization". African material of *B. maritimus* s.l. was investigated by Browning & Gordon-Gray (S. Afric. J. Bot. 59: 311−318, 1993). They recognise that "features of achene and embryo may afford criteria useful in improving the classification of *Bolboschoenus*". But "until there has been investigation worldwide, it is premature to modify the existing hierarchical classification of sub-Saharan African plants…". Like them we treat *B. maritimus* as a variable (widespread) species "without recognition in hierarchical classification".

B. grandispicus (Steud.) Lewej. & Lobin; Browning & Gordon-Gray in S. Afric. J. Bot. 59: 311, 1993; Vanden Berghen in Syst. Geogr. Pl. 69: 29−38, 1999 (illustrations p. 30). – Icon.: Berhaut, Fl. ill. Sénégal 9: 150, 1988; Browning & Gordon-Gray in S. Afric. J. Bot. 66: 69, 2000 (achene).

bas.: *Isolepis grandispica* Steud.

syn.: *Scirpus grandispicus* (Steud.) Berhaut

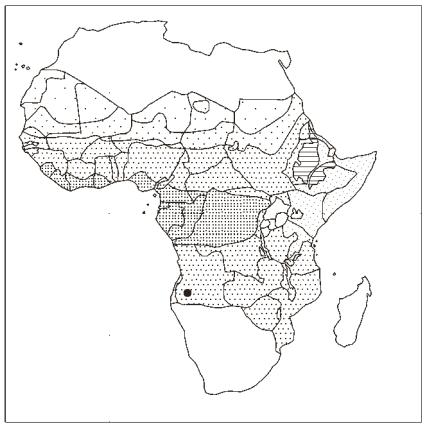
Perennial plant resembling *B. maritimus* with erect stem, *rarely > 30 cm tall*; *leaves narrow, long-tapering* towards apex; inflorescence terminal, *dense*, of 1−7 ovoid subsessile spikelets, pale yellowish gray, each 1,4−2,3 cm long, 0,8−1,2 cm ∅; *achene biconvex* with *2 style branches* (not subtrigonous with 3 style branches); in these respects it also differs from *B. nobilis* (achene trigonous with 3 style branches).

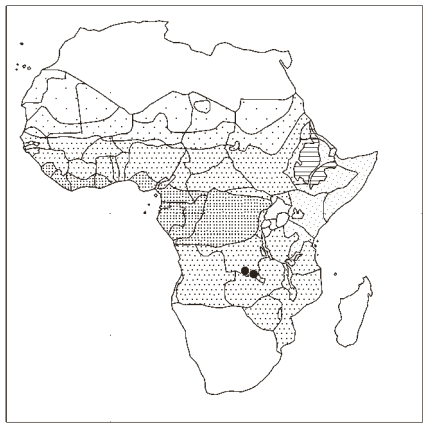
"Niayes", i.e. humid depressions, or inundated for a long time by standing water, behind the littoral dunes (figures in Vanden Berghen, o.c.: 31−32), on sandy, very humus-rich soil. – Endangered by local drying.

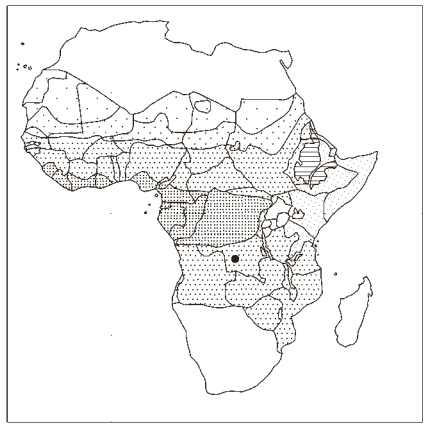
Cape Verde Isl.: Boa Vista.

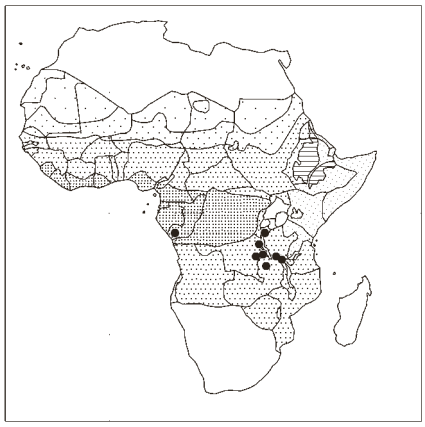
B. maritimus (L.) Palla, excl. some subspp. and vars., i.a. var. *macrostachys* (Willd.) T. V. Egorova and subsp. *macrostachys* (Willd.) Soják (? both = *B. glaucus*), subsp. *tuberosus* (Desf.) T. Koyoma (= *B. glaucus*); subsp. **maritimus**. – Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015; César & Chatelain, Fl. ill. Tchad: 135, 2019 (under *Schoenoplectus*). – Icon.: Browning & Gordon-Gray in S. Afric. J. Bot. 59: 313−314, 317, 1993 (achene); idem, ibid. 66: 69, 2000 (achene); Gordon-Gray, Cyperaceae Natal: 26−27, 1995; Berhaut, Fl. ill. Sénégal 9: 151, 1988; Thulin, Fl. Somalia 4: 102, 1995 (under *Schoenoplectus*); Fl. Eth. & Eritrea 6: 398, 401, 1997; Chaudhary, Flora Kingd. Saudi Arabia Ill. 3: 83, 2001; Pignotti in Webbia 58: 312, 2003; Cook, Aquat. & wetland pl. south. Afr.: 83, 2004; Polish Bot. J. 50: 127, 2005; Marhold in Willdenowia 36: 105, 107, 2006 (*Scirpus maritimus, S. compactus*); Kochia 4: 4, 2009 (inflor.); Ann. Bot. Fennici 44: 87, 2007; Amini Rad & al. in Nord. J. Bot. 28: 595, 2010; Svensk Bot. Tidskr. 109: 71, 2015 (photo. inflor.).

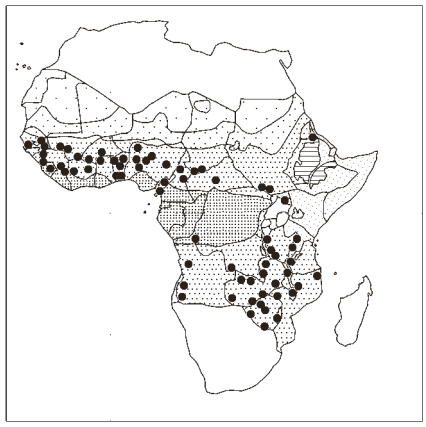
bas.: *Scirpus maritimus* L.

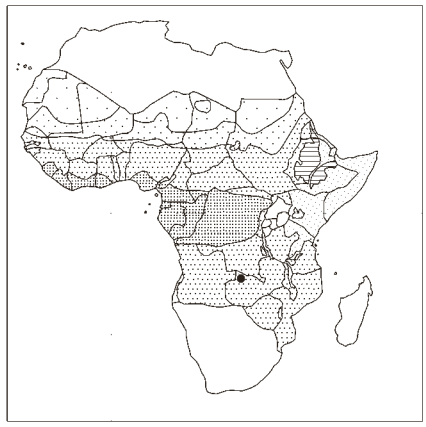

Ascolepis menonguensis

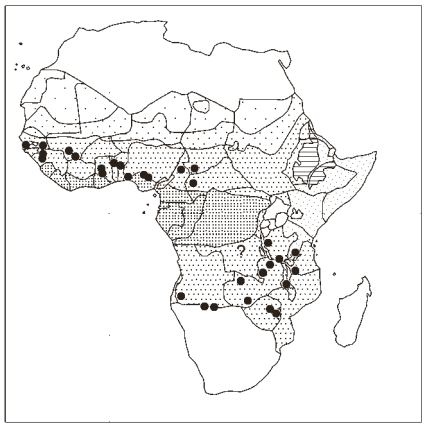

Ascolepis metallorum

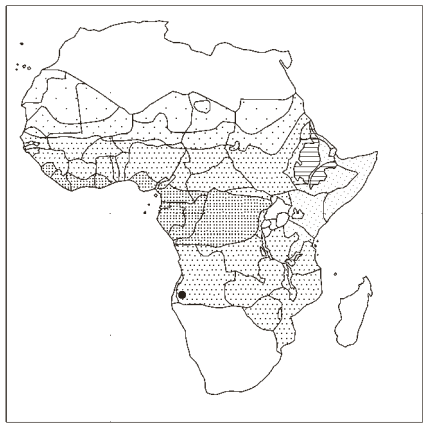

Ascolepis neglecta

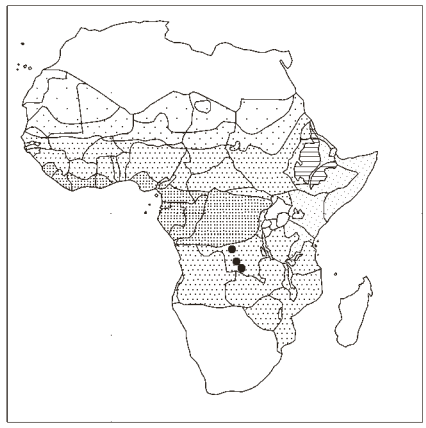

Ascolepis pinguis

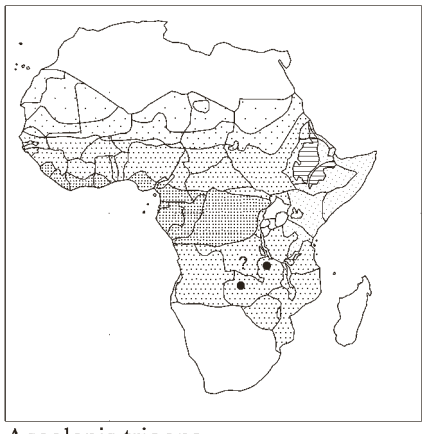

Ascolepis protea

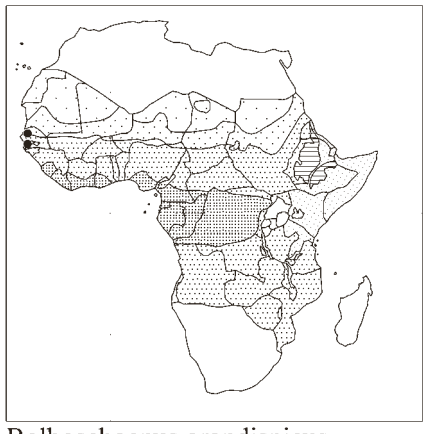

Ascolepis pseudopeteri

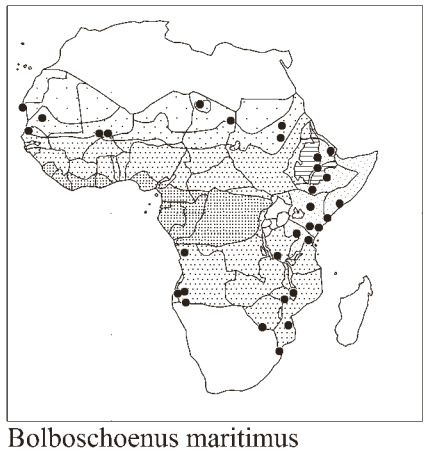

Ascolepis pusilla


Ascolepis speciosa


Ascolepis spinulosa


Ascolepis trigona


Bolboschoenus grandispicus


Bolboschoenus maritimus subsp. maritimus

BOLBOSCHOENUS MARITIMUS

syn.: *S. corymbosus* Forssk. 1775, nom. illeg.; *S. mucronatus* Pollich 1776, nom. illeg.; *S. macrostachyos* Lam. 1791; *S. compactus* Hoffm.; *S. maritimus* L. var. *compactus* (Hoffm.) DC.; *S. aegyptiacus* Poir.; *Schoenoplectus maritimus* (L.) Lye; *Bolboschoenus compactus* (Hoffm.) Drobow; *B. maritimus* subsp. *compactus* (Hoffm.) Hejný; for full synonomy see Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb 0,4−1,2 m tall; rhizome stiff, spreading, richly branched with cormose swellings; stem base swollen; stem sharply trigonous, 0,2−1 cm ∅, lower half with green leaf sheaths with brown slightly hairy throat; leaves shorter to longer than stem; blades flat, 2,5−4 cm long, 0,5−1 cm wide, scabrid on keel and margins; inflorescences *2−3, compound*, open, each with 20−50 golden brown to reddish brown spikelets 5−6 mm long; achene subtrigonous, convex-sided, with 3(2) style branches (cf. *B. grandispicus* above).

Often locally abundant in shallow permanent or semi-permanent water; seasonal swamps; grassland; often on black cotton or saline soil; muddy river banks; salt tolerant helophyte; ricefields; 0−1800 m alt.

Highly variable in inflorescence morphology and structure, and in fruit shape (Hroudová & al. in Polish Bot. J. 50: 127−129, 2005).

Almost cosmopolitan, present in temperate and subtropical regions, absent only in the Arctic region (cf. Pignotti, o.c.: 313; distribution map for Europe in Ann. Bot. Fennici 44: 88, 2007).

Large stands are important refuge for wildlife. However, it is also considered among the world's worst weeds: a pest in agricultural lands and waterways in Africa, Asia, Australia, Europe and N. and S. America. It is a troublesome weed in paddy fields, but it seems to be less a problem in the equatorial zone. Achenes are readily dispersed by birds (Bryson & Carter in Monogr. Syst. Bot. Missouri Bot. Gard. 108: 30−31, 2008).

The species is also grown by lakes and ponds. – Culms are used for thatching.

HROUDOVÁ, Z. & al. (1998). The differentiation of subspecies in Bolboschoenus maritimus based on the inflorescence structure. *Preslia* 70: 135−154.

B. nobilis (Ridl.) Goetgh. & D. A. Simpson; Browning & Gordon-Gray in Ann. Bot. Fennici 36: 93, 1999; Cyperaceae in Namibia in SABONET News 9/1: 18, 2004. – Icon.: S. Afric. J. Bot. 59: 315−316, 317 (map), 1993; ibid. 66: 69, 2000 (also achene); Clarke & Mannheimer, Cyper. Namibia: 27, 80 (map), 1999; Cook, Aquat. & wetland pl. south Afr.: 84, 2004.

bas.: *Scirpus nobilis* Ridl.

syn.: *S. maritimus* (L.) Palla var. *laeteflorens* (C. B. Clarke) Kük. quoad comb.; *S. laeteflorens* C. B. Clarke in Durand & Schinz, Conspect. Fl. Afr. 5: 625, 1894, nom.; *S. laeteflorens* C. B. Clarke in Bull. Herb. Boiss. 4, Appendix 3: 32, 1896, nom. (Chapman & Baines; Hereroland, Fleck 112 a "an Wasserstellen"); *S. laeteflorens* C. B. Clarke in Fl. Trop. Afr. 8: 456, 1902 (with description); *Schoenoplectus nobilis* (Ridl.) Lye; *Scirpus maritimus* sensu C. B. Clarke in Fl. Trop. Afr. 8: 456, 1902 p. min. p., quoad specim. Welwitsch 6975 (See Kew Bull. 46: 173, 1991).

Looks like a *B. maritimus* but much larger. — Perennial herb; stems 2−2,4 m tall, 1−1,5 cm ∅ at base; rhizome c. 2 cm ∅, woody, bearing overlapping brown scales falling early and leaving scars when they disintegrate; leaf blade 25−40 cm long, 1−1,5 cm wide, rough; inflorescence 3−4 times compound, with 10−15−22 rays, with 60−200−450 spikelets, ultimate rays with clusters of > 5 crowded sessile spikelets; spikelets 12−15-flowered, 8−9 mm long,

BOLBOSCHOENUS NOBILIS

3−4 mm ∅, golden brown (key in Kew Bull. 46: 173, 1991; table in Ann. Bot. Fennici 36: 93, 1999; comparison with *B. glaucus, B. maritimus*); achene trigonous, with 3 style branches (table in S. Afric. J. Bot. 59: 316, 1993, and photo. pericarp structure).

In and along rivers and streams, forming "dense small forests"; cottonfields; 700−1200 m alt.

W Namibia.

SYNONYMS:

Bolboschoenus compactus (Hoffm.) Drobow
= **Bolboschoenus maritimus**
glaucus (Lam.) S. G. Sm. var. *macrostachys* Tatanov
= **B. glaucus**
macrostachys (Willd.) Grossh. 1928 = **B. glaucus**
maritimus (L.) Palla: for subspecies and varieties, See above under **B. glaucus** and **B. maritimus**
maritimus var. *macrostachys* (Willd.) T. V. Egorova
= **B. glaucus**
tuberosus (Desf.) Hadac = **B. glaucus**

BULBOSTYLIS / *94*

Bulbostylis Kunth 1837, nom. conserv., description by C. B. Clarke 1893, non *Bulbostylis* DC. (*Asteraceae*), nom. rej. (Strong & Goetghebeur in Taxon 47: 155−156, 1998).

syn.: *Abildgaardia* Vahl subgen. *Bulbostylis* (C. B. Clarke) Lye – *Nemum* Desv. ex Hamilton is *not* included as a synonym here as proposed by Roalson & al. (2019).

Genus of some 120 (100−150 spp.; cf. Goetghebeur 1998: 167; or c. 213 spp., Prata & al. in Phytotaxa 314: 219, 2017; Roalson & al. in Taxon 67: 642, 2018: 215 spp.) in the tropics and subtropics of both hemispheres, especially in tropical Africa and S. America.

"Within the tribe Abildgaardieae, the relationships between *Fimbristylis* and its relatives have not been certain, and the limits of *Fimbristylis* have been unclear, with *Bulbostylis* and *Abildgaardia* variously combined with it and each other" (Ghamkhar & al. 2007: 149).

Roalson & al. in Taxon 67: 642, 2018, suggest that *Bulbostylis* and *Nemum* should be considered congeneric. This is not followed by us.

In tropical Africa 2 species are very small, viz. *B. melanocephala* and *B. meruensis* (1,5−5 cm tall).

In our area some species are poorly known: 1 species without fruit (*B. melanocephala*); no ecology recorded for 4 + 1 species; 17 species known only from the type (or type locality) = c. 18 %.

GHAMKHAR, K. & al. (2007). Phylogeny of Abildgaardieae (Cyperaceae) inferred from ITS and trnL-F data. *Aliso* 23: 149−164.

GOETGHEBEUR, P. & J. COUDIJZER (1985). Studies in Cyperaceae 5: The genus Bulbostylis in Central Africa. *Bull. Jard. Bot. Natl. Belg.* 55: 207−259.

MESTERHÁZY, A. (2012). Addition to the Cyperaceae of Liberia. *Lidia* 7/5: 101−124.

PRATA, A. P. DO NASCIMENTO & al. (2008). Micromorfologia da superficie do aquênio em Bulbostylis Kunth (Cyperaceae). *Revista Brasil. Bot.* 31: 587−596.

REUTEMANN, A. G. & al. (2012). Structure and development of the style base in Abildgaardia, Bulbostylis, and Fimbristylis (Cyperaceae, Cyperoideae, Abildgaardieae). *Flora* 207: 223−236.

REUTEMANN, A.G. & al. (2015). Inflorescence development in Abildgaardieae (Cyperaceae, Cyperoideae). *Flora* 210: 3−12.

ROALSON, E. H. & al. (2019). A broader circumscription of Bulbostylis including Nemum (Abildgaardieae: Cyperaceae). *Phytotaxa* 395: 199−208.

Bulbostylis abbreviata (Lye) Lye

bas.: *Abildgaardia abbreviata* Lye

Annual herb; inflorescence simple, of 1−3 spikelets; glumes 4−5 mm long, ovate, mucronate; nutlet transversely rugose (from the brief Latin diagnosis).

Ecology unknown.

Only known from the type collected in 1961 (Robinson 4647).

B. abortiva (Steud.) C. B. Clarke; Renier, Flore du Kwango 1: 73, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 607, 1985; Belg. J. Bot. 137: 5, 2004; Steentoft, Flowering plants W. Africa: 317, 2008; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 41: 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 118, 1983; Bull. Jard. Bot. Natl. Belg. 55: 242, 1985 (as *B. flexuosa*); Berhaut, Fl. ill. Sénégal 9: 153, 1988; Fl. Eth. & Eritrea 6: 420, 1997; Fl. Gabon 44, Cyper.: 12, 2012.

bas.: *Fimbristylis abortiva* Steud.

syn.: *Abildgaardia abortiva* (Steud.) Lye; *Bulbostylis capillaris* (L.) Kunth ex C. B. Clarke var. *abortiva* (Steud.) H. Pfeiff.; *Scirpus schweinfurthianus* Boeckeler; *Isolepis schweinfurthiana* (Boeckeler) Oliv.; *Fimbristylis flexuosa* Ridl.; *Bulbostyllis flexuosa* (Ridl.) Goetgh.; *B. camporum* K. Schum. ex C. B. Clarke, pro syn.; *B. claessensii* De Wild. – See Note below referring to *B. coleotricha* var. *lanifera* (Boeckeler) C. B. Clarke

Tufted annual herb 15−80 cm tall; stems to 1,5 mm thick, deeply grooved, usually with dense short white spine-like hairs; leaf blades to 20 cm long, 0,5 mm wide, with spine-like hairs, sheaths with hairs to 1,5 cm long; inflorescence open, umbelliform, of 10−60 spikelets each 3−7 mm long, 1−2 mm wide.

Shallow soils over rocks; (wooded) grassland; seasonally damp grassland, moist hollows; miombo woodland; often on shallow sandy soils; fallows; grassy places; gravelly soils; laterite; beaches; rock outcrops; cultivated and waste places; frequently as a weed in abandoned fields; 50−2100 m alt.

Species of the *Abildgaardio abortivae-Indigoferetum geminatae* Ataholo 2001, nom. mut. propos. (Phytocoenologia 41: 130, 2001).

Madagascar.

Note: The status of *B. coleotricha* var. *lanifera* (Boeckeler) C. B. Clarke (Fl. Trop. Afr. 8: 442, 1902) is uncertain. It is suggested to be near *B. abortiva* (Fl. Trop. E. Afr., Cyper.: 97, 2010).

B. acutispicata (Lye) Lye

bas.: *Abildgaardia acutispicata* Lye ("acutespicata").

Annual herb; inflorescence lax of 1−4 spikelets; glumes 2,5−3 mm long; nutlet transversely rugose (from the brief Latin diagnosis).

Ecology unknown; 1280 m alt.

Known only from the type collected in 1973 (Kornaś 3292).

B. afromicrocephala Lye

syn.: *Abildgaardia microcephala* Lye 1985, non *Bulbostylis microcephala* Gardner 1846 [= *Eupatorium amygdalinum* Gardner; syn.: *Ayapana amygdalina* (Lam.) R. M. King & H. Robinson, *Asteraceae*].

Annual herb; inflorescence simple, of 2−7 spikelets; glumes 1,5−2 mm long, chestnut-coloured; nutlet transversely rugose (from the brief Latin diagnosis).

Pans; c. 1600 m alt.

Known only from the type collected in 1962 (Robinson 5048).

B. afroorientalis (Lye) R. W. Haines; Fl. Trop. E. Afr., Cyper.: 90, 2010 . – Icon.: Nord. J. Bot. 3: 234, 1983.

bas.: *Abildgaardia afroorientalis* Lye

Annual tufted herb 5−20 cm tall; root-system minute; leaves numerous, 1−10 cm long, almost filiform, scabrid; leaf sheaths straw-coloured to light reddish-brown, hairy to glabrous, mouth with long flexuose hairs; inflorescence 0,5−2,5 cm wide of 1 sessile and 1−6 stalked ovoid spikelets, each 3−6 mm long, 2−4 mm wide; glumes ovate, 2−2,3 mm long, densely short hairy.

Grassland, savanna; seasonally wet seepage grassland with scattered trees; 80−300 m alt.

B. albidostricta Veltjen & Goetgh. – Icon.: Phytotaxa 201: 223−225, 2015.

Perennial herb 15−40 cm tall; *rhizome* creeping; stems 1−6 per plantlet, glabrous; *leaves basal*, filiform, glabrous, blades c. 1−4 cm long, mouth of sheaths whitish, translucent, with 0,2−2,5 mm long hairs; inflorescence with 1 terminal dense spikelet, ovoid-elliptic; glumes 11−20, closely packed, ovate, c. 2,7−3,5 mm long, membranous; nutlet trigonous, c. 1 mm long, *outer layer white, velate* and removable, pale brown underneath, *surface reticulate*. Similar to *B. schlechteri* but leaf blades present, glumes with translucent margins that results in a light colour and lacking filamentous-pilose marginal hairs, and nutlets whitish, reticulate (comparative table *B. albidostricta – B. macra – B. oritrephes – B. rhizomatosa – B. schlechteri* in Phytotaxa 201: 222, 2015).

"Near stagnant pools c. 30−50 cm deep in eroded, deforested areas with annual burns, only a few small shrubs present (dambo wetland)"; c. 1750 m alt.

Known only from the type collected in 1951 (Hess & Hess 51/253).

B. andongensis (Ridl.) C. B. Clarke, incl. var. *glabra* (Ridl.) C. B. Clarke – Icon.: Fl. Gabon 44, Cyper.: 14, 2012.

bas.: *Fimbristylis andongensis* Ridl.

syn.: *F. andongensis* var. *glabra* Ridl.; *Bulbostylis lanifera* (Boeckeler) Kük. var. *glabra* (Ridl.) Kük.; *B. andongensis* var. *glabra* in Rendle, Cat. Welw. Afric. pl. 2/1: 125, 1899, excl. syn. *F. quaternella* Ridl. p. maj. p. – See Notes below.

Annual tufted herb 10−30 cm tall; stems very slender, deeply ridged, densely hairy, or glabrous at tops, leafy in lowest parts; leaf sheaths reddish; blades 2−15 cm long, c. 0,3 mm wide, hairy beneath; inflorescence umbel-like c. 3 cm ∅, of 2−6 ovoid reddish brown solitary spikelets, each 3−4 × 2−3 mm; glumes densely short hairy.

Seasonally wet soil on rock outcrops; near streams; rather damp shortly grassed pastures; secondary thickets; wooded places among *Dicranum sphagnoideum* in short grassed pastures on volcanic rocks; marshy places; 400−700 m alt. (Gabon), 1800 m (Angola).

Note 1: The type of *Fimbristylis andongensis* Ridl. is Welwitsch 6823, Angola, "Pungo Andongo, in pascuis subhumidis parce graminosis ad basin Pedra-sangue, juxta rivulum Casengue, ad initium Jan. 1857" (i.e. 6823 in part, cf . Rendle, Cat. Welwitsch's Afric. pl. 2/1: 125, 1899); Ridley in Trans. Linn. Soc. London, Ser. 2, 2: 153, 1884, also cites a second gathering of "plantae juniores", "ad rivulum Caghuy, in dumetis secundariis, in medio Jan. 1857".

Note 2: As to *F. andongensis* var. *glabra* Ridl. the type is Welwitsch 6825, "Pungo Andongo, in pascuis breviter graminosis rupium volcanicarum ipsius Praesidii inter *Dicrani sphagnoidei* caespites". – Rendle in Cat. Welwitsch's Afric. pl. 2/1: 125, 1899, treats *F. quaternella* Ridl. as a synonym, citing the following gatherings: Welwitsch 6820, 6821, 6827, 6830 b. These specimens figure

under *F. quaternella* n. sp. Ridley in Trans. Linn. Soc. London, Ser. 2, 2: 152, 1884 (See below under *Bulbostylis quaternella*).

B. angustespicata (Lye) Verdc.; Fl. Trop. E. Afr., Cyper.: 95−96, 2010.

bas.: *Abildgaardia angustespicata* Lye

Annual herb 10−22 cm tall; stems angular with prominent longitudinal ridges, 0,2−0,3 mm ∅, minutely scabrid below inflorescence; leaves 1−7 cm long, 2−4 mm wide, margins and ribs scabrid; sheaths straw-coloured to pale reddish brown, mouth with whitish hairs 0,5−2 mm long; inflorescence umbellate, open, 2−2,8 cm long, 1−3 cm wide, of 1 sessile spikelet and 3−5 stalked/and sessile spikelets, these ± linear, 3−6 × 0,8−1,2 mm; nutlet pyriform.

Cultivated ground; school playing fields; abandoned chicken runs; c. 1560 m alt.

Known only from the type collected in 1970 (Wingfield 812).

B. argenteobrunnea C. B. Clarke – Icon.: Haines & Lye, Sedges & rushes E. Africa: 102−103, 1983.

syn.: *Abildgaardia argenteobrunnea* (C. B. Clarke) Lye

Short-lived perennial (sometimes annual) herb 10−35 cm tall, with short woody rhizome; stems 0,5−1 mm ∅, obscurely triangular or round, sometimes hairy, glabrous or minutely scabrid below inflorescence; leaves at basal 5 cm of plant; blades 3−8 cm long, 0,3−0,5 mm wide, with 3 prominent ribs beneath; sheaths pale reddish brown or whitish, with scattered brown dots, minutely hairy and with many flexuous hairs at mouth; inflorescence open, 1−3 cm wide,1−2 cm long, of 1 sessile spikelet and 3−5 stalked spikelets or spikelet clusters (peduncles 0,5−1,5 cm long); spikelets pale brown, ovate, 4−7 × 1,5−2,5 mm.

Occurs as isolated plants in sand pockets in rock crevices; mixed grassland on granite rock pavements; pasture derived from cleared bushland; 150−1050 m alt.

B. atrosanguinea (Boeckeler) C. B. Clarke; Bull. Jard. Bot. Natl. Belg. 55: 230, 256 (fig.), 1985; Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: Fl. Eth. & Eritrea 6: 415, 1997 (as *B. setifolia*).

bas.: *Scirpus atrosanguineus* Boeckeler

syn.: *Fimbristylis setifolia* A. Rich.; *F. atrosanguinea* (Boeckeler) K. Schum.; *Bulbostylis setifolia* (A. Rich.) Bodard 1963, nom. illeg., non Beetle 1949; *Abilgaardia setifolia* (A. Rich.) Lye

Densely tufted perennial herb 10−70 cm tall forming large tussocks from a short creeping much-branched rhizome; stems 0,4−0,7 cm ∅, glabrous or with short spine-like hairs; leaf sheaths pale brown or with reddish dots or streaks, glabrous, but mouth with long hairs; outer sheaths often burnt off; blades 5−12 cm long, 0,5 mm wide, margins with many spine-like hairs; inflorescence a compact head of 3−8−10 sessile spikelets, each to 1 × 0,3 cm; glumes *pale to dark brown-purple or almost black*, 2−4 mm long.

Heath; ericaceous scrub; rocky moorland; grassy glades in *Juniperus* forest; rocky mountain slopes; decomposed sandy schist; 1800−3700 m alt.

Yemen.

B. barbata (Rottb.) C. B. Clarke subsp. **barbata**, non *Abildgaardia barbata* (Rottb.) P. Beauv. 1809; Bull. Jard. Bot. Natl. Belg. 55: 236, 1985; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 607, 1985; Simpson & Inglis in Kew Bull. 56: 260, 2001; Ravi & Mohanan, Common tropical and sub-tropical sedges & grasses: 12, 2002; Steentoft, Flow. pl. W. Africa: 315, 317, 2008; Lisowski, Fl. Rép. Guinée 1: 392, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 41, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 123, 1983; Berhaut, Fl. ill. Sénégal 9: 154, 1988; Thulin, Fl. Somalia 4: 110, 1995; Fl. Eth. & Eritrea 6: 421, 1997; Germishuizen in Bothalia 27: 144, 1997.

bas.: *Scirpus barbatus* Rottb., excl. var.

syn.: *S. antarcticus* sensu Vahl 1805, non L.; *Isolepis barbata* (Rottb.) R. Br.; *I. wallichiana* Schult. in Roem. & Schult.; *I. willdenowii* Kunth 1837; *I. willdenowii* Steud. 1855; *I. subtristachya* Schweinf.; *Bulbostylis filamentosa* (Vahl) C. B. Clarke var. ? *barbata* C. B. Clarke in Durand & Schinz, Conspect. Fl. Afr. 5: 614, 1894; *Fimbristylis barbata* (Rottb.) Benth., incl. var. *subtristachya* Ridl.; *Iria barbata* (Rottb.) Kuntze; *Abildgaardia wallichiana* (Schult.) Lye 1983; *A. willdenowii* (Kunth) Lye 1981 (1982). – For further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Tufted annual herb 3−30 cm tall; stems many, 0,2−0,4 mm wide, angular; leaf sheaths pale brown, with long hairs at mouth; blades 1−10 cm long, 0,2−0,5 mm wide, margins scabrid near tips; inflorescence a head of few to many spikelets 0,3−1,5 cm ∅; spikelets 3−8 mm long, 1−1,5 mm wide.

Mixed woodland and bushland with grass; dry river beds; crevices in granite outcrops; deep roadside ditches; denuded sands well drained; savannas; open forests; fallows; hardpan; weed in ± disturbed sandy places; 0−1300 m alt.

Cape Verde Isl.: Boavista & Fago only (Brochmann & Rustan in Garcia de Orta, Ser. Bot. 16: 22, 2002); Swaziland (Bothalia 27: 145−146, 1997); Madagascar, W Indian Ocean islands; widespread in the Old World tropics and subtropics (locally); as a weed in SE USA, C. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 257, 2012). – Naczi & Ford, Sedges: uses…: 31, 2008: "occasional weed on sandy soil in flowerbeds and poorly managed turf in SE USA… can be a conspicuous feature of the landscape when en masse its reddish brown inflorescences appear in sandy cultivated fields".

B. bodardii S. S. Hooper – Fl. W. Trop. Afr., ed. 2, 3/2: 317, 1972; Lisowski, Fl. Rép. Guinée 1: 392, 2009. – Icon.: Berhaut, Fl. ill. Sénégal 9: 155, 1988.

syn.: *B. zambesica* C. B. Clarke var. *occidentalis* Bodard; *B. clarkeana* sensu Adam in Bull. Inst. Franç. Afrique Noire, Sér. A., Sci. Nat. 24: 943, 1962.

Perennial herb, rhizomatose and caespitose, 6−30 cm tall; leaves in basal rosette, 0,3−1 cm long, filiform, sheaths long ciliate; inflorescence a terminal ovoid spikelet, *brownish red*, 0,7−1 cm long.

Humid sand in savanna; spongy meadow around pool; on wet laterite; c. 1300 m alt.

Last record 1948; endangered (Couch & al., Habitats menacés… de Guinée… : Tableau A, 2019).

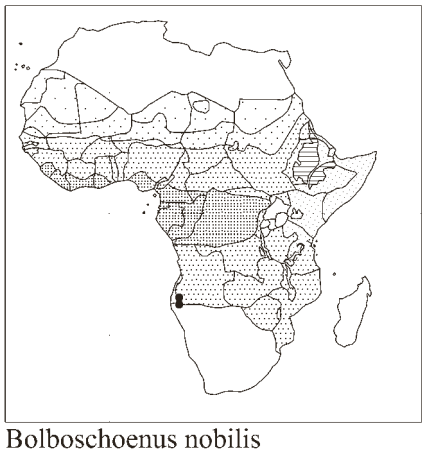
Resembling *Nemum spadiceum* (annual).

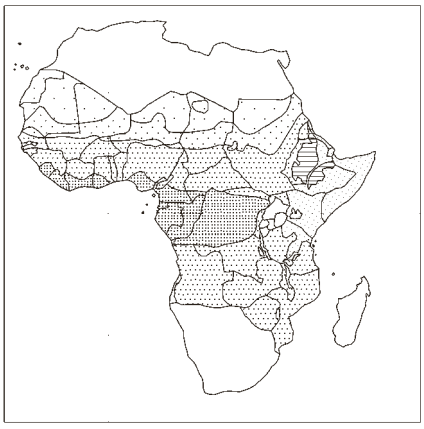
B. boeckeleriana (Schweinf.) Beetle; Bull. Jard. Bot. Natl. Belg. 55: 225, 1985. – Icon.: Bot. Not. 126: 327, 1973 (under *Abildgaardia*); Haines & Lye, Sedges & rushes E. Afr.: 98−99, 1983; Gordon-Gray, Cyperaceae Natal: 28, 1995 (nutlet); Fl. Eth. & Eritrea 6: 415, 1997; Fl. Trop. E. Afr., Cyper.: 74, 2010.

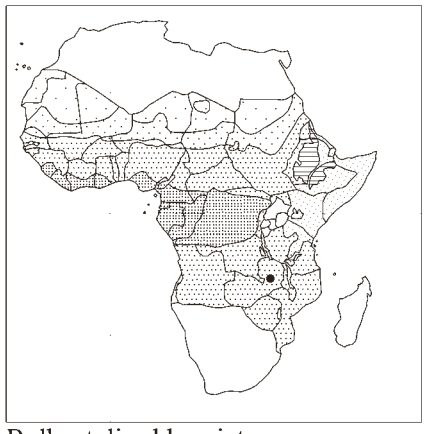
bas.: *Scirpus boeckelerianus* Schweinf.

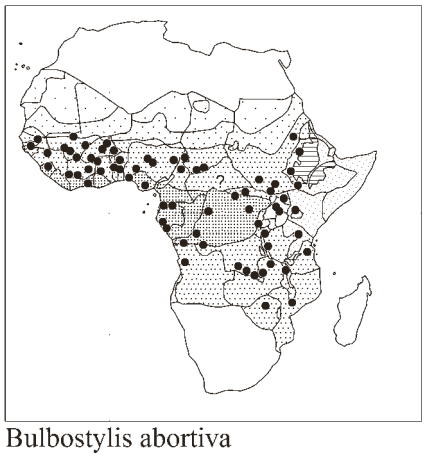
syn.: *Abildgaardia boeckeleriana* (Schweinf.) Lye

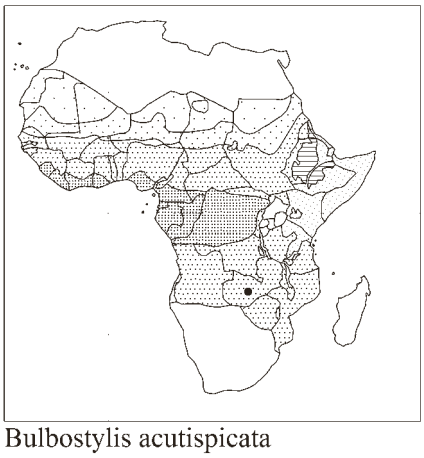
Tufted perennial herb 15−70 cm tall, with a short creeping rhizome; stems densely crowded, ridged, 0,6−1 mm ∅, with a few

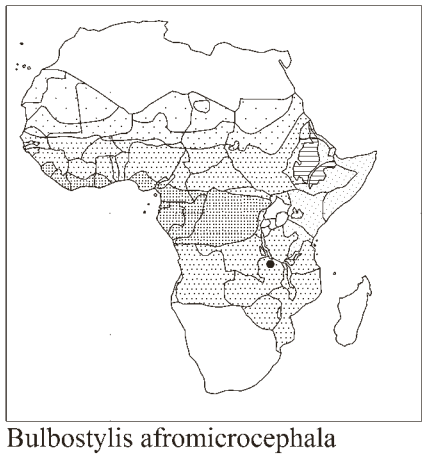

Bolboschoenus nobilis

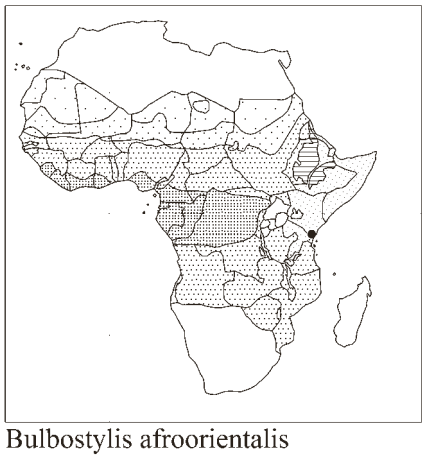


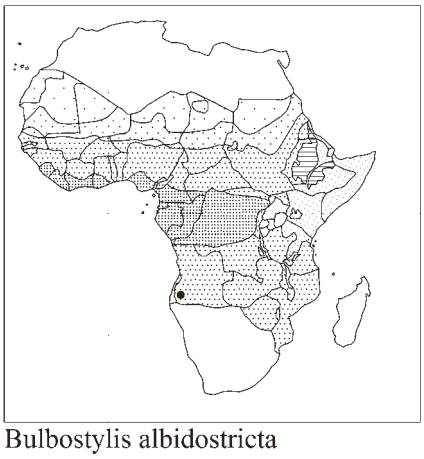

Bulbostylis abbreviata

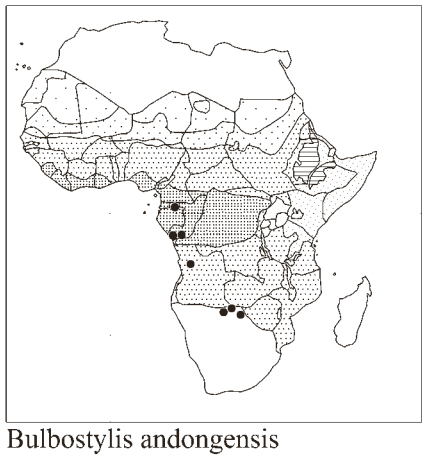

Bulbostylis abortiva

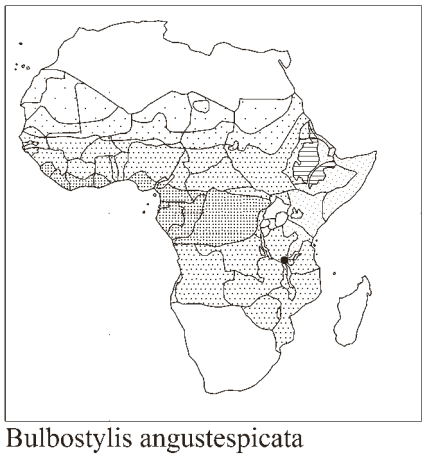

Bulbostylis acutispicata

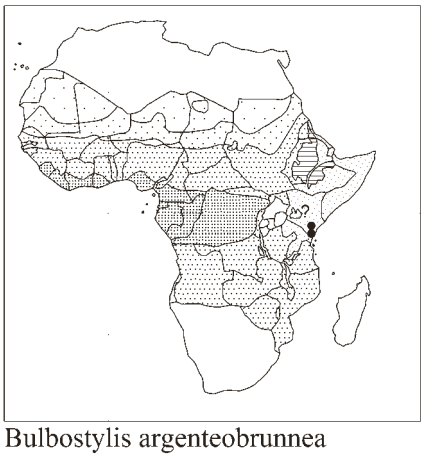

Bulbostylis afromicrocephala

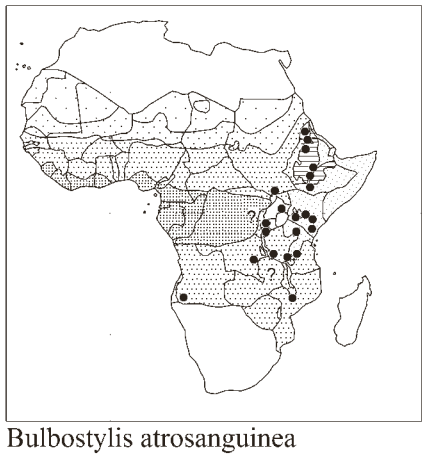

Bulbostylis afroorientalis


Bulbostylis albidostricta


Bulbostylis andongensis


Bulbostylis angustespicata


Bulbostylis argenteobrunnea


Bulbostylis atrosanguinea

short spine-like hairs beneath inflorescence; leaves 5−15 cm long, 0,5−1 mm wide; sheaths pale brown with long flexuous hairs at mouth; inflorescence of 2−12 spikelets, either sessile and capitate or 1−3 additional stalked inflorescences (sometimes only 1 spikelet).

Dry grassland; wooded grassland; forest glades; swamp margins; in shallow soil over rocky outcrops with *Acacia*; seepages in *Brachystegia* woodland; open bushland; damp depressions; savannas; 100−2700 m alt.

S. Africa.

Comprises 2 vars.: – var. **boeckeleriana** [syn.: *Scirpus collinus* Boeckeler var. *boeckelerianus* (Schweinf.) Schweinf.; *Bulbostylis collina* sensu Fl. Trop. Afr. 8: 432, 1902, non (Kunth) C. B. Clarke; *B. zeyheri* sensu Fl. Trop. Afr. 8: 437, 1902, p.p., non (Boeckeler) C. B. Clarke; *B. cinnamomea* sensu Fl. Cap. 7: 209, 1898, non (Boeckeler) C. B. Clarke; *B. schoenoides* sensu Vollesen, Op. Bot. 59: 93, 1980, non (Kunth) C. B. Clarke; *B. vaginosa* Kük.; *Abildgaardia boeckleriana* (Schweinf.) Lye var. *boeckeleriana* R. W. Haines & Lye], with mostly head-like inflorescences; – var. **transiens** (K. Schum.) R. W. Haines [bas.: *Fimbristylis transiens* K. Schum.; syn.: *Bulbostylis transiens* (K. Schum.) C. B. Clarke; *Abildgaardia boeckeleriana* var. *transiens* (K. Schum.) Lye], with laxer inflorescences.

"*B. boeckeleriana* has been much confused with other species, such as *B. collina*, *B. cinnamomea*, *B. schoenoides*…" (Gordon-Gray, o.c.: 30). However, it is "not difficult to recognise". – Very close to *B. contexta* (See that species below).

B. boeckeleriana cited by Thiombiano & al., Cat. pl. vascul. Burkina Faso: 41, 2012, is probably an error. They cite *Schoenoplectus corymbosus* var. *brachyceras* (Hochst. ex A. Rich.) Lye, and *Scirpus brachyceras* Hochst. ex A. Rich. as synonyms. These names are then to be found on p. 56 as *Schoenoplectus corymbosus*, which seems correct.

B. bozumensis Cherm.; Bull. Jard. Bot. Natl. Belg. 55: 232−233, 1985.

Perennial densely caespitose herb with very short rhizome sometimes absent; stems 20−75 cm long, 3−4 mm ∅ at apex, shortly but densely *scabrid*; leaves numerous, filiform, 15−25 cm long, 1−2 mm wide, *scabrid*; sheaths reddish, with long white hairs at mouth; inflorescence head-like, 0,6−1 cm ∅, ovoid, dense, with many spikelets 6−7 × 2−2,5 mm.

Wooded savanna on dry gravel.

17 specimens from Shaba, enumerated by Goetghebeur & Coudijzer (reference cited above), are provisionally referred to this species; they may "represent a southern subspecies".

(***B. brunneoacuminata*** Larridon & Roalson, Phytotaxa 418: 113, 2019 nom. inval.; idem in Phytotaxa 420: 300, 2019). – See under **Nemum megastachyum** (Cherm.) J. Raynal

B. buchananii C. B. Clarke; Bull. Jard. Bot. Natl. Belg. 55: 244, 1985; Gereau & al., Lake Nyasa florist. checklist: 45, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Africa: 114, 1983; Fl. Eth. & Eritrea 6: 418, 1997.

syn.: *Abildgaardia buchananii* (C. B. Clarke) Lye

Densely tufted annual or short-lived perennial herb 5−35 cm tall; stems 0,3−0,6 mm ∅, angular, scabrid or glabrous; leaves filiform, 2−20 cm long, 2−6 mm ∅, scabrid; sheaths pale brown with long hairs at mouth; inflorescence a terminal head of few to many spikelets, 0,5−1,2 cm ∅; spikelets lanceolate, 3−6 × 1−2 mm.

Brachystegia, *Julbernardia*, *Parinari* woodland; open areas with sandy or lateritic soil; swamp; sandy or gravelly lake fringes, stream edges; rock outcrops, etc.; open bushland; 350−1650 m alt.

B. burchellii (Ficalho & Hiern) C. B. Clarke; Sabonet News 9/1: 18, 2004 (Cyper. in Namibia); Fl. Trop. E. Afr., Cyper.: 91, 2010. – Icon.: Haines & Lye, Sedges & rushes, E. Africa: 112−113, 1983; Gordon-Gray in Strelitzia 2: 28, 1995 (nutlet).

bas.: *Fimbristylis burchellii* Ficalho & Hiern

syn.: *F. huillensis* Ridl.; *F. hispidula* Boeckeler in Linnaea 37: 27, 1871, p.p.; *Abildgaardia burchellii* (Ficalho & Hiern) Lye; *Stenophyllus capillaris* fa. *major* H. Pfeiff.

Densely tufted perennial herb 15−60 cm tall with woody rhizome; stems and leaves crowded; stems angular, 0,3−0,6 mm ∅, scabrid; leaves filiform, 5−20 cm long, densely scabrid; sheaths brown, scabrid to hairy with long white hairs at mouth; inflorescence open, umbelliform, of 7−20 spikelets, often with 2−4 secondary umbels; spikelets lanceolate, 4−70 mm long, 1−2 mm wide.

Open coastal forest on sandy soil; marginal mangrove vegetation; in dense masses over large areas with *Xyris* and *Ascolepis*; plentiful in thicket-grown pastures at wood edges; 10−75 m alt.

S. Africa, Botswana, Swaziland, Namibia.

B. capitata (Lye) Lye; Lidia 1: 37, 1985 (under *Abildgaardia*).

bas.: *Abildgaardia capitata* Lye

Annual herb; inflorescence simple, of 3−5 spikelets; glumes 2−2,5 mm long; nutlet transversely rugose (from the brief Latin diagnosis).

Shallow soil overlying laterite and sandstone.

Known only from the type collected in 1961 (Robinson 4409).

B. cardiocarpoides Cherm.; Bull. Jard. Bot. Etat, Brux. 13: 282, 1935; Bull. Jard. Bot. Natl. Belg. 55: 234, 1985; Fl. Trop. E. Afr., Cyper.: 103−104, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 122, 1983; Fl. Gabon 44, Cyper.: 14, 2012.

syn.: *Abildgaardia cardiocarpoides* (Cherm.) Lye; *Bulbostylis puberula* sensu Robyns & Tournay in Fl. Parc. Natl. Albert 3: 264, 1955, non (Poir.) C. B. Clarke; *B. puberula* (Poir.) C. B. Clarke var. *viguieri* sensu Bodard in Ann. Fac. Sci. Univ. Dakar 9: 69, 1963, non *B. viguieri* Cherm.

Tufted perennial herb 6−20 cm tall with the new shoots appearing amongst the old which are usually rotted or burnt; stems 0,4−0,5 mm ∅, *almost glabrous*, leaves 4−8 cm long, 0,2−0,4 mm wide, sometimes with a few spine-like hairs particularly near apex; sheaths pale or reddish brown with many hairs 3−5 mm long at throat; inflorescence of 3-many sessile spreading spikelets forming a head or cross; spikelets 3−5 mm long, 1−1,5 wide.

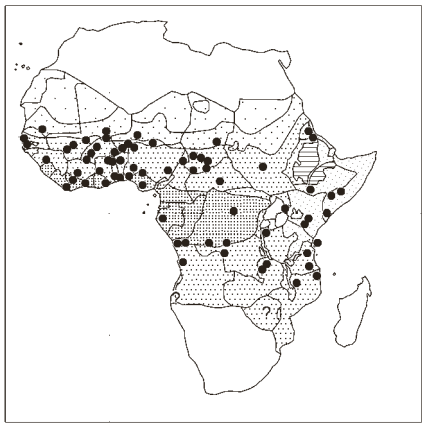
Disturbed dry sandy *Loudetia kagerensis* grassland; open sandy ground on raised beach near lake; road sides; tree savanna; forest fringes; esobe; 200−1200 m alt.

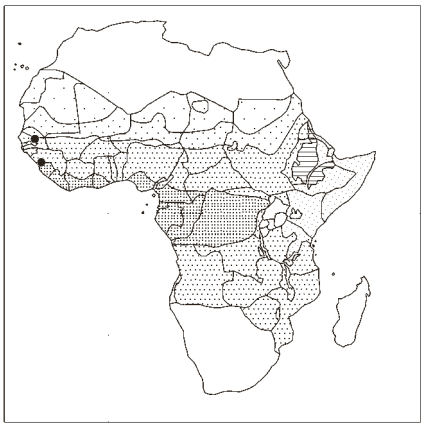
The specimens collected near Lake Edouard (Zaire) are cited as Lebrun 4765 (or 4785).

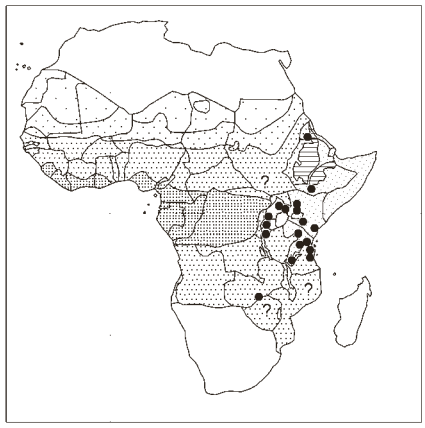
(**B. cinnamomea** (Boeckeler) C. B. Clarke)

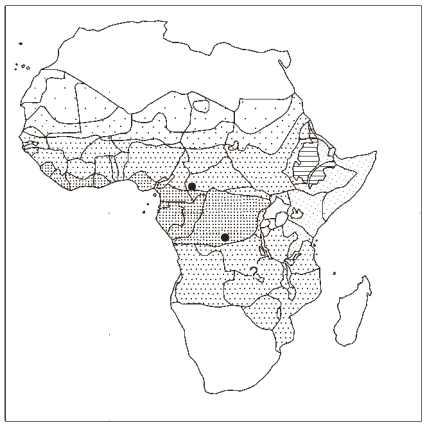
"This species is doubtfully kept separate from *B. schoenoides* (Kunth) C. B. Clarke, with blackish glumes, often smaller stems and a southern African distribution" (Goetghebeur & Coudijzer in Bull. Jard. Bot. Natl. Belg. 55: 227, 1985).

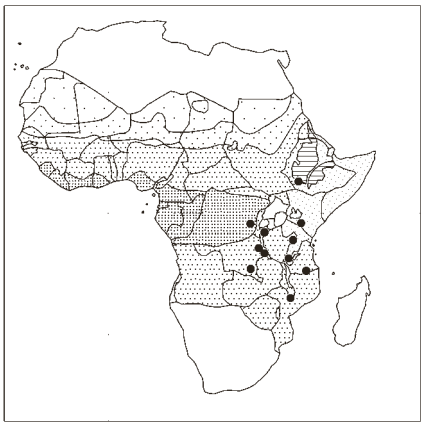
In, e.g., Fl. Ethiopia & Eritrea 6: 414−415, 1997, and Fl. Trop. E. Afr., Cyper.: 76−77, 2010, *B. cinnamomea* is considered to be a synonym of **B. schoenoides**. We follow these two treatments

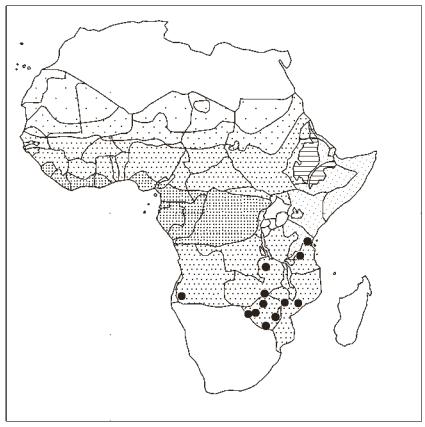

Bulbostylis barbata subsp. barbata

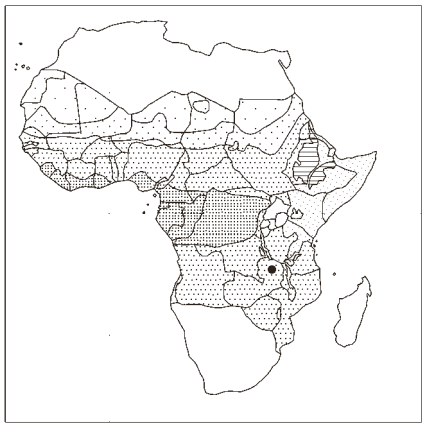

Bulbostylis bodardii

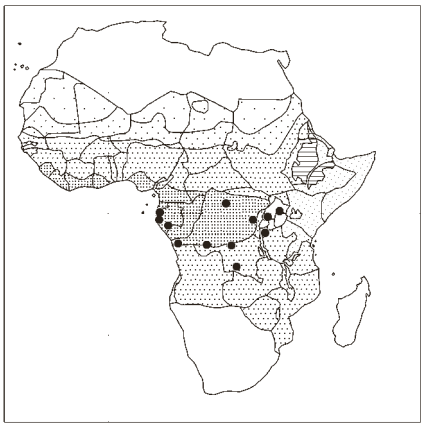

Bulbostylis boeckeleriana

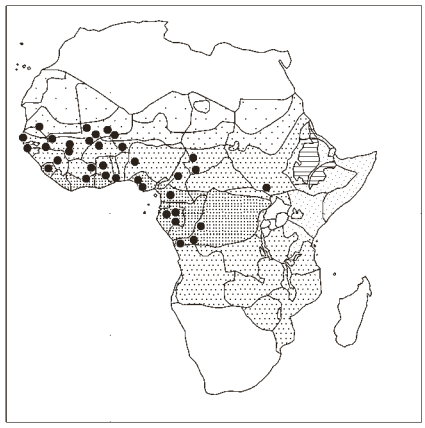

Bulbostylis bozumensis

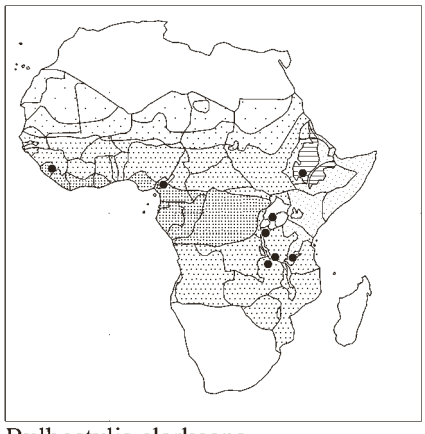

Bulbostylis buchananii

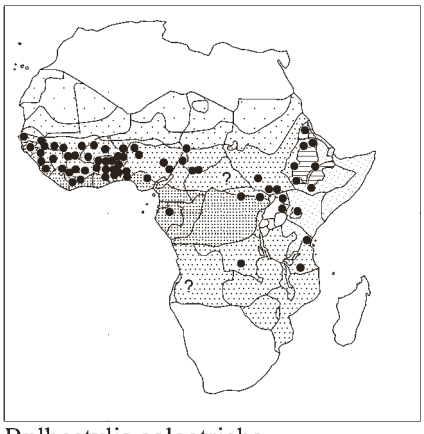

Bulbostylis burchellii

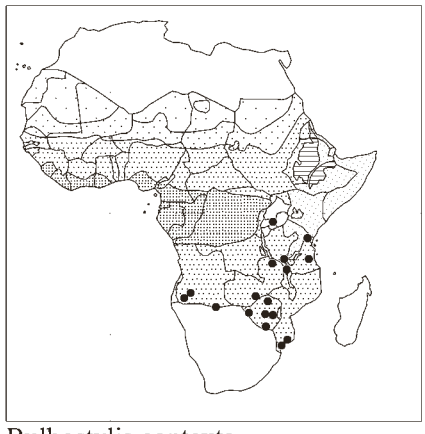

Bulbostylis capitata


Bulbostylis cardiocarpoides


Bulbostylis cioniana


Bulbostylis clarkeana


Bulbostylis coleotricha


Bulbostylis contexta

of the species complex. Haines & Lye (Sedges & rushes E. Afr.: 101, 1983) maintain the genus *Abildgaardia*: *B. schoenoides* there figures under *A. erratica* (Hook.) K. Lye subsp. *schoenoides* (Kunth) C. B. Clarke.

B. cioniana (Pi. Savi) Lye; Bull. Jard. Bot. Natl. Belg. 55: 218, 1985; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 41, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015; Schmidt & al. in Phytotaxa 304: 47, 2017 (map). – Icon.: Berhaut, Fl. ill. Sénégal 9: 156, 1988; Fl. Gabon 44, Cyper.: 15, 17, 2012.

bas.: *Fimbristylis cioniana* Pi. Savi

syn.: *F. hispidula* (Vahl) Kunth var. *cioniana* (Pi. Savi) Boeckeler; *F. vermoesenii* De Wild.

Annual caespitose herb 8−30 cm tall; stems 3-angular, subwinged under inflorescence, striate, hispidulous to scabrid, leaf-less; leaf sheaths densely hairy, hairs hyaline, 2−5 mm long; blades < 10 cm long, 0,3−0,5 mm wide, with hyaline hairs; inflorescence umbel-like, 1−3 cm wide, with 6−8 rays, *erect to obliquely patent*, often divided near apex; spikelets > 12 in an umbel, 3−5 mm long.

Dry sandy places, in particular in sandy beds of seasonal rivers; riverbanks; sandy shores, sand banks; sandy grassland; margins of pond; -300−700 m alt.

Morocco; extinct in (N) Italy, SW Spain.

Three specimens from Zaire, Shaba, cited by Goetghebeur & Coudijzer (l.c.) are perhaps *B. cioniana*, or a form of *B. hispidula* (not figuring on our map). *B. cioniana* is near *B. hispidula*.

B. clarkeana Hutch. ex Bodard; Bull. Jard. Bot. Natl. Belg. 55: 228, 1985; Fl. Trop. E. Afr., Cyper.: 78, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 102, 1983; Fl. Eth. & Eritrea 6: 416, 1997.

syn.: *Abildgaardia clarkeana* (Hutch. ex Bodard) Lye

Perennial herb *50−80 cm tall* with *creeping rhizome* and ± closely set stems 0,4−0,8 mm wide, angular, glabrous or minutely scabrid above; stem base covered by brown-dark purple leaf sheaths ending in lobes to 2 cm long, blades absent; inflorescence of 1 terminal spikelet, sometimes with 1−2 additional spikelets, peduncle 1−6 mm long; spikelets ovate, 8−12 × 2−4 mm.

Miscanthus swamp with *Sphagnum* and other perennial wet bogs; marshy land; seepage zone; 1200−2000 m alt.

B. clarkeana is treated as s synonym of *B. oritrephes* by Lisowski, Fl. Rép; Guinée 1: 393, 2009. But in Fl. Trop. E. Afr., Cyperaceae (l.c.) *B. clarkeana* is maintained as a good species. The specimen Scott-Elliot 5244 from Guinea cited by Lisowski, is probably *B. clarkeana*, a plant growing in permanent wet bogs; the other specimens from Guinea cited by Lisowski (l.c.) are *B. oritrephes*, a plant growing on laterite. The gathering Scott-Elliot 5244 is treated as *B. festucoides* by C. B. Clarke, Fl. Trop. Afr. 8: 430, 1902.

A very rare plant, perhaps overlooked.

B. coleotricha (Hochst. ex A. Rich.) C. B. Clarke, excl. var. *lanifera* (Boeckeler) C. B. Clarke (cf. above under *B. abortiva*; and below under *B. lanifera*); Bull. Jard. Bot. Natl. Belg. 55: 243, 1985; Cabezas & al. in Belg. J. Bot. 137: 5, 2004; Martins & al. in Garcia de Orta, Ser. Bot. 17: 78, 2006; Steentoft, Flow. pl. W. Africa: 317, 2008; Lisowski, Fl. Rép. Guinée 1: 392, 2009; Fl. Trop. E. Afr., Cyper.: 97−98, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 42, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015; Schmidt & al. in Candollea 71: 273, 2016, and in Phytotaxa 304: 47, 2017 (map). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 118, 1983; Berhaut, Fl. ill. Sénégal 9: 157, 1988; Fl. Eth. & Eritrea 6: 421, 1997; Fl. Gabon 44, Cyper.: 17, 2012.

bas.: *Fimbristylis coleotricha* Hochst. ex A. Rich.

syn.: *Abildgaardia coleotricha* (Hochst. ex A. Rich.) Lye; *Scirpus coleotrichus* (Hochst. ex A. Rich.) Boeckeler

Annual tufted slender herb 8−40 cm tall, all parts hairy; stems 0,3−0,8 mm ∅, deeply grooved, ridges scabrid-hairy; leaf sheaths with hairs 3−10 mm long; blades distinctly ridged, 3−15 cm long, 0,2−0,5 mm wide, with short stiff dense hairs; inflorescence lax, with 1 sessile spikelet and 2−8 stalked spikelets, or groups of spikelets, sometimes only 1−3 spikelets; these ovoid, 2−5 × 1,5−3 mm.

Degraded savanna; seasonally damp grassland; dry meadows on inselbergs; cracks in granite boulders or sandstone rocks; laterite outcrops; in shallow soil overlying rock outcrops and crevices; dry river beds; cultivations; 70−2900 m alt.

Comprises 2 vars.: – var. **coleotricha** [syn.: *Bulbostylis seretii* De Wild.] with large spikelets (2−3 mm wide); – var. **miegei** (Bodard) R. W. Haines [bas.: *B. miegei* Bodard; syn.: *Abildgaardia miegei* (Bodard) Lye; *A. coleotricha* var. *miegei* (Bodard) Lye] with small spikelets (1−2 mm wide).

B. contexta (Nees) Bodard; Meneses in Garcia de Orta 4: 254, 1956 (as *B. zeyheri*); Sabonet News 8/1: 18, 2003; ibid. 9/1: 18, 2004 (Namibia); Burrows & Willis, Pl. Nyika Plateau, Malawi: 297, 2005; – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 103, 1983; Strelitzia 2: 28, 1995 (nutlet); Cyperaceae of Namibia: 61, 85 (map), 1999.

bas.: *Trichelostylis contexta* Nees

syn.: *Fimbristylis contexta* (Nees) Kunth; *Isolepis collina* Kunth; *Scirpus zeyheri* Boeckeler; *Bulbostylis zeyheri* (Boeckeler) C. B. Clarke; *B. collina* (Kunth) C. B. Clarke 1894, p.p. excl. cited specimens (Fl. Trop. Afr. 8: 432, 1902), non *Fimbristylis collina* Ridl. 1884 (= *Bulbostylis scabricaulis*); *B. kirkii* C. B. Clarke; *B. burkei* C. B. Clarke; *Abildgaardia contexta* (Nees) Lye; *Stenophyllus collinus* (Kunth) Chiov.; *Scirpus collinus* Boeckeler; *S. macrolepis* Boeckeler ex C. B. Clarke, nom. invalid.; *S. trispiculatus* Boeckeler ex C. B. Clarke, nom. invalid.; *S. burkei* (C. B. Clarke) K. Schum.; *S. kirkii* (C. B. Clarke) K. Schum.

Perennial tussocky herb 15−50 cm tall with a short woody rhizome; stems angular or ± flattened, 0,4−0,8 mm ∅, scabrid or shortly hairy; leaves basal, tufted; sheaths pale reddish brown, glabrous or shortly hairy, throat with long hairs; blades to 10 cm long, 0,3−0,5 mm wide, shortly hairy or scabrid; inflorescence open or compact, 1−3 cm wide, of 1 sessile spikelet and 2−5 stalked spikelets, and sometimes 1−2 additional spikelets at base of the stalked ones; peduncles 5−15 mm long; spikelets 5−12 mm long, 2−3 mm wide.

Rocky hillsides; c. 1650 m alt. (F.T.E.A.-area).

Namibia, Botswana, Swaziland, S. Africa.

"Extremely common in Natal, polymorphic and taxonomically difficult" (according to Gordon-Gray, fide Fl. Trop. E. Afr., Cyper.: 80, 2010). It is not for certain "that *B. boeckeleriana* should be kept distinct from *B. contexta* and the specimen is not really different from *B. boeckeleriana* var. *transiens*".

B. craspedota Chiov.; Thulin, Fl. Somalia 4: 109, 1995.

syn.: *Stenophyllus craspedotus* (Chiov.) Chiov., nom. inval.

Tufted perennial herb with a woody horizontal rhizome and crowded shoots at the growing end; stems 20−70 cm long, 0,5−1,5 mm ∅, angular, with minute spine-like hairs below inflorescence; leaf sheaths light brown, with long flexuose hairs at throat; blades 1−15 cm long, 0,5−1 mm wide; inflorescence of

2−12 spikelets in a head or with 1−3 additional stalked spikelets or spikelet-clusters; spikelets ovoid, 6−10 × 2−4 mm.

Dry grassland; near 0−100 m alt.

? N Kenya (no specimens seen for Fl. Trop. E. Afr., Cyper.: 112, 2010).

B. cruciformis (Lye) R. W. Haines – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 127, 1983; Fl. Eth. & Eritrea 6: 423, 1997.

bas.: *Abildgaardia cruciformis* Lye

Tufted annual herb 4−18 cm tall; stems angular, 0,2−0,4 mm wide, scabrid below inflorescence; leaves 1−3 cm long, 0,2−0,4 mm wide, main ribs and margins scabrid; sheaths straw-coloured to pale brown, scabrid to hairy with long hairs at mouth; inflorescence a head of 3−5 sessile spikelets often *arranged in a cross*, 5−8 mm wide.

Open sand in dry open bushland; dwarf woodland with *Acacia*, *Lannea alata*, *Euphorbia matabelensis* and a ground cover of perennial grasses; woodland with *Commiphora*, *Cordia*, *Acacia*, *Euphorbia*; 200−1300 m alt.

Known only from Kenya fide Fl. Trop. E. Afr., Cyper.: 108, 2010, but indicated from Ethiopia (Sidamo; specim. Friis & al. 2870), and eventually Bale (specim. Smeds 1, 1109) according to Fl. Eth. & Eritrea: l.c.

B. cupricola Goetgh.; Bull. Jard. Bot. Natl. Belg. 54: 92, 93 (fig.), 1984; ibid. 55: 246, 1985; Faucon & al. in Pl. Ecol. Evol. 143: 9, 2010. – Icon.: Malaisse & al., Copper-cobalt flora & Upper Katanga: 323, 2016.

Annual herb 5−15 cm tall; stems solitary or fasciculate, sulcate, shortly hairy like leaves and inflorescence branches; leaves several to many; leaf sheath throat with long white hairs; blade 3−8 cm long, 0,2 mm wide, uniformly sulcate below; inflorescence open, of 2−20 spikelets, pedicels 0,4−2 cm long, pilose or sparsely so; spikelets acute, multiflowered, 3−5 mm long, 1−1,5 mm wide.

Dried mud flats of copper contaminated soil; cobalt steppe; copper polluted soils and on sites of washing of extracted rocks; periodically very humid compact soil (plant forming greensward); 1200−1400 m alt.

"Great interest, even if it is an annual plant. Able to develop into a closed lawn" (Malaisse & al., l.c.).

B. cylindrica C. B. Clarke; Figueiredo & Smith, Pl. Angola: 178, 2008.

Slender annual herb; stems tufted, 10−15 cm tall, setaceous except at top; leaves to 2,5 cm long, setaceous; sheaths with a few long very slender white hairs at throat; inflorescence of 1 sessile + 2 long-pedicelled spikelets; spikelets narrow-cylindrical, 8 × 2 mm, rusty brown.

Ecology unknown.

B. densa (Wall.) Hand.-Mazz.; Garcia de Orta 4/2: 253, 1956; Wickens, Fl. Jebel Marra, Kew Bull., Add. Ser. 5: 161, map 685, 1976; Bull. Jard. Bot. Natl. Belg. 55: 251, 1985; Simpson & Inglis in Kew Bull. 56: 260−261, 2001; Sosef & al., Check-list pl. vascul. Gabon: 135, 2006 (but not figuring in Fl. Gabon 44, Cyper., 2012); Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 149, 2010 (both varieties); Lisowski, Fl. Rép. Guinée 1: 392−393, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 42, 2012, and Schmidt & al. in Phytotaxa 304: 47, 2017 (map); Onana & Cheek, Red Data Book flow. pl. Cameroon: 364−365, 2011 (var. **cameroonensis**); Onana, Fl. Cameroon 40: 222, 2013 (idem); Gereau & al., Lake Nyasa florist checklist: 45, 2012; Darbyshire

& al., Pl. Sudan & S. Sudan: 102, 2015. – Icon.: J. Agric. Trop. Bot. Appl. 8: 117, 1961 (as *Fimbristylis marrana*); Haines & Lye, Sedges & rushes E. Afr.: 120, 1983 (subsp. **afromontana**); Bull. Jard. Bot. Natl. Belg. 55: 252, 1985; Berhaut, Fl. ill. Sénégal 9: 158, 1988; Strelitzia 2: 28, 1995 (nutlet); Fl. Eth. & Eritrea 6: 419, 1997; OH, Young Cha, Korean Cyperaceae: 34, 2000; Ravi & Mohanan, Common tropical and sub-tropical sedges and grasses: 14, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 296, 2005; Fl. Trop. E. Afr., Cyper.: 99, 2010; Fl. China, Ill. 23 : 293−294, 2012.

bas.: *Scirpus densus* Wall.

syn.: *Isolepis densa* (Wall.) Schult.; *Fimbristylis densa* (Wall.) T. Koyama & T. I. Chuang 1960, nom. illeg., non *Abildgaardia densa* (Wall.) Lye 1974; *Bulbostylis tenuissima* Nakai 1952, nom. illeg.; *Isolepis tenuissima* D. Don 1825, nom. illeg.

Tufted variable annual herb 5−30 cm tall, glabrous or with scattered short spine-like hairs on stem and leaves; stems deeply grooved, 0,2−0,4 mm ∅; leaf sheaths with many slender hairs 1−2 mm long; blades caniculate, grooved, 0,2−0,3 mm wide; inflorescence of 1 sessile spikelet and to 8 stalked spikelets each one 2−5 × 1,5−3 mm.

Aquatic biotopes; margins of water bodies; grassland, both dry and bordering swampy streams; murram pits, dry rocky places with thin or eroded soil particularly in *Juniperus*, bamboo forest clearings, damp rocks of waterfalls; *Combretum*, *Acacia* scrub; *Loudetia arundinacea* grassland with scattered trees, on rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* spp. and many annuals; meadows; lava plains; crops; weed in cultivated fields, rice fields, waste places, roadbanks; 5−500−3300 m alt.

Bioko/Fernando Poo; S. Africa, Lesotho, Swaziland. Widespread in the Old World tropics from tropical Africa through the Indian subcontinent, Sri Lanka, Pakistan, Bangladesh (new, See Bangladesh J. Pl. Taxon. 9: 61, 2002), China, Russian Far East, Japan, Nepal, Thailand, Vietnam, Malesia, through to Indonesia – Australia – Pacific Islands.

Comprises in Africa: – subsp. **afromontana** (Lye) R. W. Haines [bas.: *Abildgaardia densa* (Wall.) Lye subsp. *afromontana* Lye; syn.: *Isolepis trifida* Nees; *Bulbostylis capillaris* (L.) C. B. Clarke var. *trifida* (Nees) C. B. Clarke; *B. trifida* (Nees) Nelmes, nom. superfl., incl. var. *biegensis* Cherm.; *Fimbristylis minutissima* Maire; *F. marrana* Miré & Quézel, non rite publ.], widespread in Africa, with nutlets with ± obscure tubercles and glumes with distinct keel; – var. **cameroonensis** S. S. Hooper [syn.: *Bulbostylis puberula* (Poir.) C. B. Clarke var. *cameroonensis* C. B. Clarke, nom. in Dur. & Schinz, Consp. Fl. Afr. 5: 615, 1895, nom. nud.], with nutlets with very clearly seen tubercles and glumes rounded on back; a Cameroon endemic "differing from all other species in Africa in having spikelets on short pedicels producing a compact inflorescence and glumes with a distinctly excurrent nerve". – Until the 1990s, this variety was known only from the type collection (Mann 1360b) on Mt Cameroon, believed to be from the Mann's Spring area. It was then rediscoverd there in 1992 (*Thomas* 9407)… Subsequently it has been recorded at other montane grassland sites…" (Onana & Cheek, o.c.: 364−365, 2011). Cf. also Cable & Cheek, Pl. Mt Cameroon: LXVI, 1998; Harvey & al., Pl. Bali Ngemba…: 70−71, 135, 2004; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 105, 2010. – In grassland; 1800−3000 m alt. – subsp. **densa** occurs in tropical Asia, E Australia [var. **capitata** (Miq.) Ohwi from China to temperate E. Asia].

"*B. densa* and *B. pusilla* are not always easily distinguished and a number of specimens with neither tuberculate nor transversely

rugulose sculpture, but with merely reticulate cell pattern, resemble both…" (Fl. Trop. E. Afr., Cyper.: 100, 2010).

B. densicaespitosa (Lye) R. W. Haines; Fl. Trop. E. Afr., Cyper.: 75, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 99, 1983.

bas.: *Abildgaardia densicaespitosa* Lye

Perennial herb forming a *dense clump* 25−60 cm tall with a thick woody rhizome c. 5 mm ∅; stems many, crowded, 0,5−1,5 mm ∅, triangular, scabrid or almost glabrous; leaf sheaths light reddish brown, *densely woolly* with very long white hairs at throat; blades c. 1 cm long, filiform, scabrid; inflorescence of 1 central sessile spike and 2−5 stalked spikelets on 1−2,2 cm long stalks, the whole 4−6 cm wide; spikelets ovoid, *8−12 mm long*, *4−5 mm wide*.

On black clay soil admixed with sand, scattered *Terminalia*, *Euphorbia*, *Acacia* with tangled shrub clumps of *Grewia*, *Lannea*, *Commiphora*, *Lecaniodiscus*, *Cordia*, *Boswellia*, *Strychnos*, *Combretum*; *Cynometra*, *Brachylaena* coastal forest; 50−300 m alt.

"…the only species of …*Bulbostylis* with a typical open *Fimbristylis*-like inforescence…" (Haines & Lye, o.c.: 100).

B. densiflora (Lye) Lye

bas.: *Abildgaardia densiflora* Lye

Annual herb; inflorescence of 1 spikelet; glumes 2−3 mm long; nutlet transversely rugose (from the brief Latin diagnosis).

Top of waterfalls; 1260 m alt.

Only known from the type collected in 1957 (Richards 9339).

B. elegantissima (Lye) R. W. Haines; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 111, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 129−130, 1983.

bas.: *Abildgaardia elegantissima* Lye

Annual herb 10−20 cm tall with tufted stems; stems glabrous below but with spine-like teeth below inflorescence; leaves to 5 cm long, 0,5 mm wide, margins and ribs scabrid, sheath with long white hairs at throat; inflorescence open with 1 sessile and 1−8 stalked spikelets and sometimes extra basal stalked spikelets; peduncles scabrid.

Grassland; sandy trackside; 750−850 m alt.

B. erratica (Hook. f.) C. B. Clarke; Chapman & Chapman, Forests Taraba & Adamawa States Nigeria: c49, 2001; Cabezas & al. in Belg. J. Bot. 137: 5, 2004; Onana, vascul. pl. Cameroon…: 159, 2011. – Icon.: Velayos & al., Flora Guinea Equat. 11: 327, 2014.

bas.: *Schoenus erraticus* Hook. f.

syn.: *Abildgaardia erratica* (Hook. f.) Lye, non incl. *A. erratica* subsp. *schoenoides* (Kunth) Lye (= *B. schoenoides*), an E. African plant; *Scirpus kamerunensis* K. Schum. ex C. B. Clarke

Perennial tufted herb with a stout, very short woody rhizome, with a lurid red colouring at swollen carbonized base; stems 10−40 cm tall, trigonous and minutely hairy at top; leaves setaceous, inrolled, nearly as long as stems; leaf sheaths pale brown, *throat glabrous*; inflorescence of 1 head with 3−5 bright chestnut-brown to black sessile spikelets each one cylindric-lanceolate 1,2 × 0,3−0,4 cm.

Temporary swamp with black thin soil; burnt meadow with *Cyperus nduru*; grassland; 1550−3000 m alt.

Bioko/Fernando Poo.

There has been confusion about the synonyms: C. B. Clarke in Fl. Trop. Afr. 8: 435, 1902, cites *Isolepis schoenoides* Hook. f., *Chaetospora nigricans* Boeckeler, p.p., etc. as synonyms.

(**B. festucoides** (Poir.) C. B. Clarke); Fl. Trop. Afr. 8: 430, 1902.

A tufted annual herb 5−20 cm tall, with striate stems and setaceous leaves with hairy sheaths with long white hairs at mouth; inflorescence of 1 spikelet.

Cited from "French Guinea, Sulimania, Erimakuna" (Scott Elliott 5244) by C. B. Clarke, l.c.; Lisowski, Fl. Rép. Guinée 1: 393, 2009, mentions this gathering under *B. oritrephes*, but in Fl. Trop. E. Afr., Cyper.: 78, 2010, it is considered as **B. clarkeana** (See above under that species).

B. festucoides occurs in the W Indian Ocean islands.

B. filamentosa (Vahl) C. B. Clarke, incl. var. *metralis* (Cherm.) R. W. Haines, but excl. var. *scabricaulis* (Cherm.) Bodard (= *B. scabricaulis*) and var. ? *barbata* C. B. Clarke in Durand & Schinz, Conspect. Fl. Afr. 5: 614, 1894 (= *B. barbata*); M. Renier, Fl. Kwango 1: 73, 1948 (incl. *B. cardiocarpa*); Meneses in Garcia de Orta 4: 253, 1956; Bull. Jard. Bot. Natl. Belg. 55: 231, 256 (fig. nutlet), 1985; Lebrun, Cat. pl. vascul. Mauritanie: 267, 1998; Burrows & Willis, Pl. Nyika Plateau, Malawi: 297, 2005; Strugnell, Checklist spermat. Mt. Mulanje: 75, 2006; Figueiredo & Smith, Pl. Angola: 178, 2008; Dobignard & Chatelain, Index synon. fl. Afrique N. 1: 104, 2010; Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 42, 2012, and Schmidt & al. in Phytotaxa 304: 47, 2017 (map); Schmidt & al. in Candollea 71: 273, 2016. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 120−121, 1983; Fl. Trop. E. Afr., Cyper.: 102, 2010; Fl. Gabon 44, Cyper.: 19, 2012; Malaisse & al., Copper-cobalt flora Upper Katanga: 324, 2016.

bas.: *Scirpus filamentosus* Vahl

syn.: *Isolepis filamentosa* (Vahl) Roem. & Schult.; *Fimbristylis filamentosa* (Vahl) K. Schum.; *Abildgaardia filamentosa* (Vahl) Lye, incl. var. *metralis* (Cherm.) Lye; *Bulbostylis metralis* Cherm.; *B. filamentosa* var. *metralis* (Cherm.) R. W. Haines; *B. rehmannii* C. B. Clarke, nom. inval.; *B. cardiocarpa* C. B. Clarke 1894; *Fimbristylis cardiocarpa* Ridl. 1884, nom. illeg., non F. v. Muell. 1859; *Bulbostylis junciformis* var. *filamentosa* (Vahl) H. Pfeiff.

Perennial caespitose herb 0,2−1 m tall; stems crowded on a short rhizome 0,6−1 mm ∅; stems and leaves glabrous or minutely hairy; leafy sheaths brownish, throat with long hairs, *old sheaths often fibrillose*; blades 10−15 cm long, 0,3−0,5 mm wide, strongly scabrid; inflorescence a dense crowded head of 6−20 spikelets 0,5−1,5 cm ∅; spikelets 5−8 mm long. The plant resembling *Juncus jacquinii*.

Seasonally wet habitats; grassland; *Terminalia*, *Lannea*, *Pappea* and *Brachystegia* woodland; crevices in rock faces; poor soils on laterite; savanna; rather dry grassland; wooded savannas; mostly on sandy soil or shallow soil overlying outcropping rocks; copper rocky sites; also a weed (Naczi & Ford, Sedges: uses…: 77, 2008); c. 0−2700 m alt.

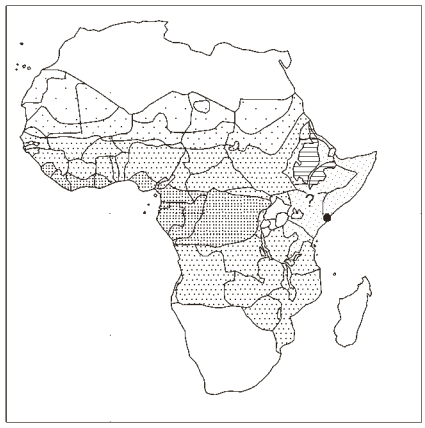
S. Africa, Botswana, Swaziland. Record from Namibia erroneous (Sabonet News 9/1: 18, 2004). – Also in Equat. Guinea ?

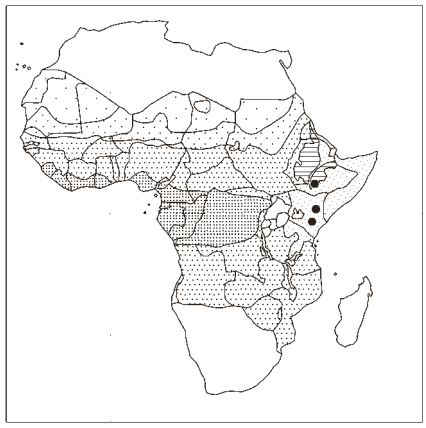
Very close to *B. scabricaulis*.

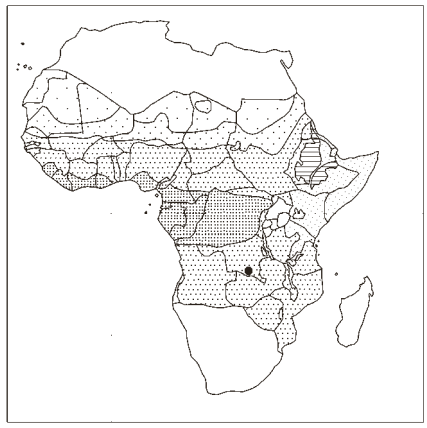
B. fimbristyloides C. B. Clarke; Meneses in Garcia de Orta 4: 253, 1956 (as *B. cyrtathera*); Bull. Jard. Bot. Natl. Belg. 55: 235, 1985.

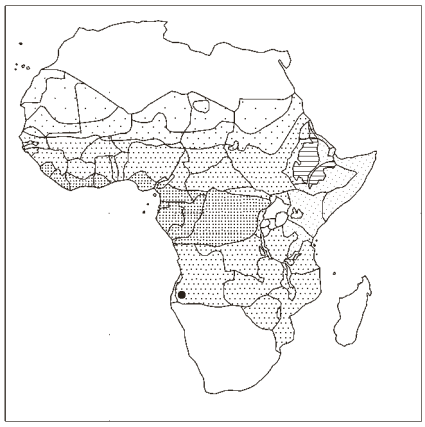
syn.: *B. cyrtathera* Cherm.

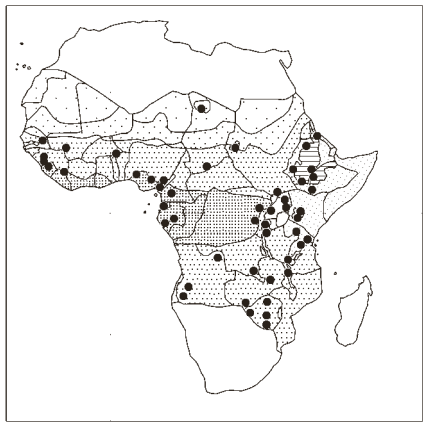
Annual herb, tufted, 15−20 cm tall; basal leaves filiform, 5−8 cm long, sparingly hairy with long white hairs; sheaths reddish;

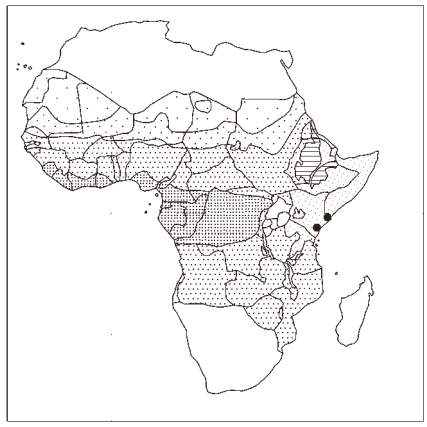

Bulbostylis craspedota

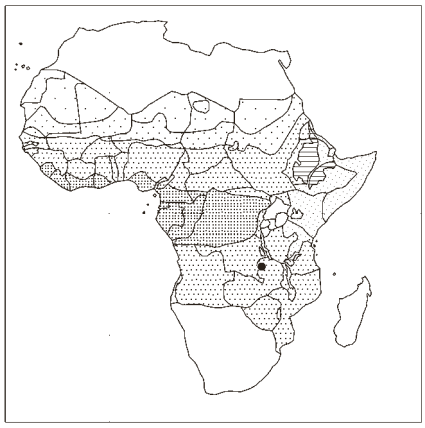

Bulbostylis cruciformis

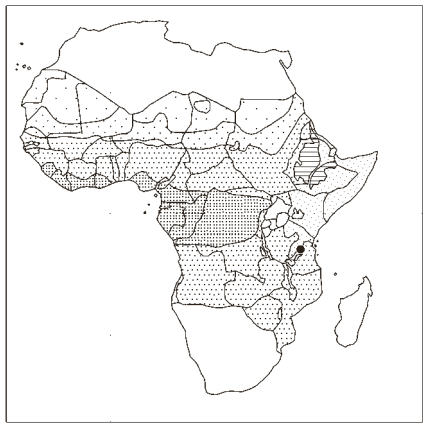

Bulbostylis cupricola

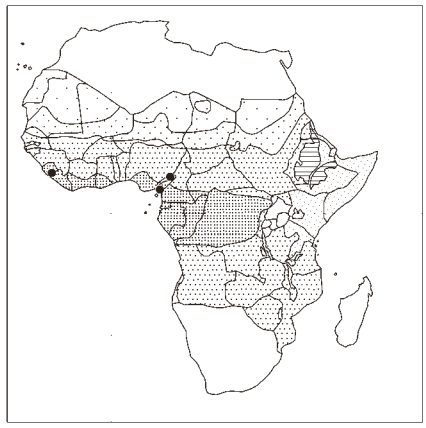

Bulbostylis cylindrica

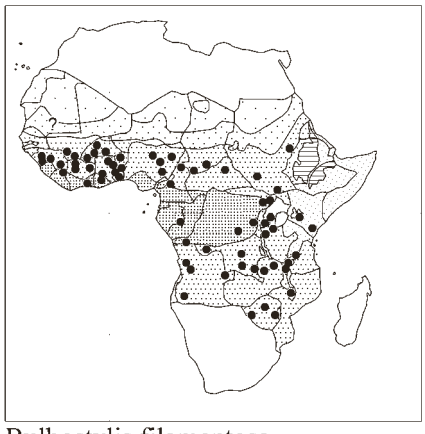

Bulbostylis densa

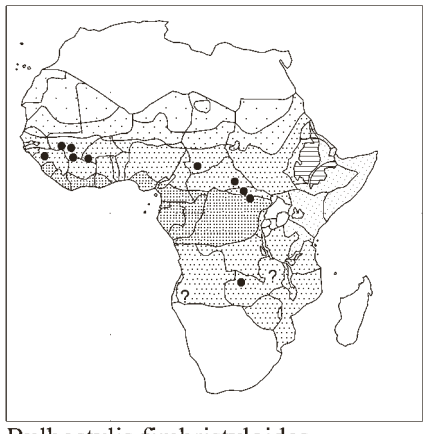

Bulbostylis densicaespitosa

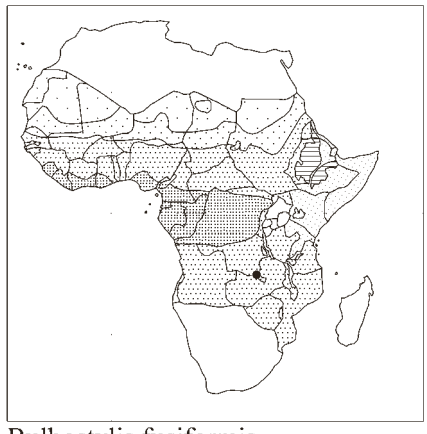

Bulbostylis densiflora


Bulbostylis elegantissima


Bulbostylis erratica


Bulbostylis filamentosa


Bulbostylis fimbristyloides


Bulbostylis fusiformis

inflorescence globose, sessile, 5−8 mm ∅, red-brown; spikelets reflexed, ovate, compressed, 3 mm long, minutely hispid.

Damp places in savanna; temporary hollow on sand; vegetation on laterite; humid gravel.

Undercollected.

B. fusiformis Goetgh.; Faucon & al. in Pl. Ecol. Evol. 143: 8, 2010. – Icon.: Bull. Jard. Bot. Natl. Belg. 55: 239, 1985; Malaisse & al., Copper-cobalt flora Upper Katanga: 324, 2016.

Annual tufted herb 5−20 cm tall, "with the habit of a robust *B. pseudoperennis*"; stems sulcate, scabrid; leaves several, with long white hairs at mouth of sheaths; blades scabrous, 2−10 cm long, c. *0,3 mm wide*; inflorescence umbel-like or reduced to one spikelet; spikelets spindle-shaped, 9−14 mm long, 2−3 mm wide, acute, multiflowered.

Copper steppe savanna and sward; strictly endemic of Cu-rich soil (Faucon & al., l.c.).

B. glaberrima Kük.; Fl. Trop. E. Afr., Cyper.: 106, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 124−125, 1983.

syn.: *Abildgaardia glaberrima* (Kük.) Lye; *Bulbostylis heterostachya* sensu Bodard in Ann. Fac. Sci. Univ. Dakar 9: 63, 1963, non Cherm. (conspecific fide Lye, 2010).

Annual herb to 2 cm tall, base covered with many pale multiveined prophylls; stems green, ridged, 0,2 mm ∅, glabrous or with few hairs; leaves c. 1 cm long, 0,2−0,4 mm wide, glabrous, with few teeth at apex; sheaths pale; inflorescence of 1 spikelet and (less often) 1−2 additional ones; spikelet 2−4 mm long.

Marshes; rocky outcrops in *Erica* belt; 3000−3600 m alt.

"Closely related to (and perhaps conspecific with) the Madagascarian species [*Abildgaardia*] *Bulbostylis heterostachya* Cherm."

B. guineensis Cherm. ex Bodard; Lisowski, Fl. Rép. Guinée 1: 393, 2009.

Perennial herb, erect, tufted with woody base, 0,2−1,25 m tall; leaves basal, canaliculate, of the same length; sheaths glabrous at mouth; panicle spreading with 20−35 spikelets, each 5−6 × 1−2 mm, reddish-black, neat elliptic.

Swamp on hard-pan; wet places in savanna; 1600 m alt.

B. hensii (C. B. Clarke) R. W. Haines – Here treated in the sense of Haines & Lye, Sedges & rushes E. Africa: 109−110, 1983, and of Fl. Trop. E. Africa, Cyper.: 88, 2010. – Bull. Jard. Bot. Natl. Belg. 55: 215−217, 1985, excl. syn. *Fimbristylis hispidula* subsp. *brachyphylla*, *F. exilis* var. *brachyphylla*, *Abildgaardia hispidula* subsp. *brachyphylla* (all = *F. hispidula* subsp. *brachyphylla*). – Icon.: Haines & Lye, o.c.: 109; Nord. J. Bot. 1: 756, 1981 (nutlet; as *Abildgaardia subumbellata*); Fl. Gabon 44, Cyper.: 20−21, 2012.

bas.: *Fimbristylis hensii* C. B. Clarke

syn.: *F. hispidula* (Vahl) Kunth subsp. *hensii* (C. B. Clarke) J. Raynal; *F. exilis* (Kunth) Lye var. *levinux* C. B. Clarke, nom. nud.; *Abildgaardia hensii* (C. B. Clarke) Lye; *A. subumbellata* Lye; *Bulbostylis subumbellata* (Lye) R. W. Haines

Perennial tussocky herb to 20−40 cm tall (difficult to tell in some specimens if they are perennial or annual) with a short erect rhizome; stems ridged, 0,3−0,6 mm ∅, with dense hairs c. 0,5 mm long; leaves with similar hairs; sheaths greenish or pale reddish brown; blades green, filiform, 1−2 cm long; inflorescence a simple

umbel-like structure with 2−5 (rarely 1) spikelets, each ovoid, acute, 5−15 mm long, 2−3 mm wide.

Dry grassland in hilly areas; roadside banks; old quarry floor; open swampy places, often in meadows or savanna; 0−1400 m alt.

Near *B. hispidula* but usually forming larger tufts, and with a simple darker umbel with 2−5 spikelets or rarely 1, and *nutlets* smooth (not transversely wrinkled). *B. hensii* "could also be regarded as a subspecies of *B. hispidula*" (Haines & Lye, o.c.: 110).

Not in Angola: Loango (Soyaux 151); confusion with Congo-Brazzaville.

B. hispidula (Vahl) R. W. Haines; Enum. 4: 597, 1997 (under *Abildgaardia*); Ridley in Trans. Linn. Soc. London, Ser. 2, 2: 152, 1884 (Welwitsch Herbarium); Belg. J. Bot. 55: 215−217 (*B. hensii* p.p.), 217−218 (*B. hispidula*), 1985; Simpson & Inglis in Kew Bull. 56: 261, 2001; Cabezas & al. in Belg. J. Bot. 137: 5, 2004 (subsp. *brachyphylla*, Equat. Guinea); Naczi & Ford, Sedges: uses…: 77, 2008; Gereau & al., Lake Nyasa florist. checklist: 45, 2012 (subspp. *brachyphylla, filiformis, hispidula*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 42, 2012, and Schmidt & al. in Candollea 71: 273, 2016 (under *Abildgaardia*), and in Phytotaxa 304: 47, 2017 (map); Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015 (subsp. *hispidula*. – Icon.: Amer. J. Bot. 39: 378, 1952 (as *Fimbristylis exilis*); Mitt. Bot. Staatss. München 10: 540 (typical form), 542 (glabrous form with erect rhizome), 544 (dry country form), 546 (form with "Bulbostylis-stylebase" often named *B. congolensis* = ? *B. pusilla* subsp. *congolensis*), 1971; Bot. Not. 127: 496, 1974 (subsp. *pyriformis*); Haines & Lye, Sedges & rushes E. Afr.: 104−107, 1983 (subspp. *hispidula*, *brachyphylla*, *halophila*, *filiformis*, *intermedia*, *pyriformis*); Berhaut, Fl. ill. Sénégal 9: 159−160, 1988 (subspp. *brachyphylla*, *hispidula*, *senegalensis*); Strelitzia 2: 28, 32, 1995 (subsp. *pyriformis*); Thulin, Fl. Somalia 4: 110, 1995 (subspp. *hispidula*, *macroglumis*); Fl. Eth. & Eritrea 6: 416, 1997 (subsp. *hispidula*); Fl. Trop. E. Afr., Cyper.: 81, 2010; Fl. Gabon 44, Cyper.: 22, 2012.

bas.: *Scirpus hispidulus* Vahl

syn.: *Fimbristylis hispidula* (Vahl) Kunth; *Abildgaardia hispidula* (Vahl) Lye – Complete synonymy in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, for all subspecies.

Tufted perennial herb, highly polymorphic, 10−80 cm tall with a short woody creeping rhizome, with remains of burnt-off basal leaves, or annual herb with slender root system; stems angular, ridged, 0,3−1 mm ∅, glabrous to densely set with transparent hairs; leaves flat or channelled, 1−15 cm long, 0,2−0,5 mm wide, usually densely hairy; leaf sheaths densely hairy with long (to 15 mm) slender hairs at mouth; inflorescence simple or compound, lax, with 1 sessile and 2-many additional stalked spikelets or groups of sessile and stalked spikelets, or rarely all spikelets sessile.

Grassland often with scattered shrubs or trees; bushland often on seasonally water-logged soil but also in shallow soils over rocks; coastal wooded grassland; *Terminalia, Julberlinia, Uapaca* woodland; *Acacia* scrub; muddy tidal inlets; sandy beaches; old cultivations; weed in cultivated fields, crops, ricefields, roadsides, lake fringes, aquatic biotopes; niayes; inselbergs; mostly on sandy soil; member of the *Abildgaardio abortivae-Indigoferetum geminatae* association (Wittig & al. in Phytocoenologia 41: 130, 2011) in the Sudanian and Sahelian zone; thousands of individuals growing in large sandy plains of S Ennedi with *Panicum turgidum*; 0−2000 m alt.

Cape Verde Isl.; Annobón; Namibia, Swaziland (Bothalia 27: 145, 1997), Botswana, S. Africa; Madagascar, Seychelles; tropical Asia; tropical America. – Pantropical.

This polymorphic species is divided into 10 subspecies (cf. World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew), and even into 11 subspecies if *B. hensii* (See that species above) is added (that species "could also be regarded as a subspecies of *B. hispidula*" (Haines & Lye, o.c.: 110). Keys to relevant subspecies (and with different interpretations) are found in: Fl. W. Trop. Afr., ed. 2, 3/2: 319−320, 1972 (under *Fimbristylis*); Haines & Lye, Sedges and rushes E. Afr.: 94, 1983 (under *Abildgaardia*); Thulin, Fl. Somalia 4: 109, 1995; Fl. Eth. & Eritrea 6: 416−417, 1997; Fl. Trop. E. Afr., Cyper.: 80−81, 2010. – subsp. **hispidula** [syn.: *Fimbristylis exilis* (Kunth) Roem. & Schult., incl. var. *hirsutissima* Cherm.; See also under *B. mlangoyajehenum*; *Isolepis exilis* Kunth; *Scirpus exilis* (Kunth) Poir.; *Bulbostylis exilis* (Kunth) Lye; *Isolepis abyssinica* Hochst. ex C. B. Clarke; *Fimbristylis hispidula* (Vahl) Kunth var. *confertispicata* Kük. and var. *glabra* Kük.; *Scirpus hildebrandtii* Boeckeler; *S. granulato-hirtellus* Boeckeler ex Schinz; *Fimbristylis trichophora* Steud. ex C. B. Clarke; *F. hildebrandtii* (Boeckeler) Ridl.; *Isolepis perrottetii* Steud.; *Isolepis pubiculmis* Boeckeler; etc.], widely distributed in Africa and in the World; – subsp. **brachyphylla** (Cherm.) R. W. Haines [bas.: *Fimbristylis exilis* (Kunth) Roem. & Schult. var. *brachyphylla* Cherm.; syn.: *F. hispidula* var. *brachyphylla* (Cherm.) Podl.; *F. hispidula* subsp. *brachyphylla* (Cherm.) Napper; *Abildgaardia hispidula* subsp. *brachyphylla* (Cherm.) Lye], a perennial plant with a short rhizome, in tropical W-C-E (to Uganda) Africa; formerly considered to be a synonym of *Bulbostylis hensii*; – subsp. **capitata** Verdc., a tufted annual with capitate inflorescence of sessile spikelets, in Uganda-Tanzania; – subsp. **filiformis** (C. B. Clarke) R. W. Haines [bas.: *Bulbostylis filiformis* C. B. Clarke; syn.: *Stenophyllus filiformis* (C. B. Clarke) H. Pfeiff.; *Abildgaardia hispidula* var. *filiformis* (C. B. Clarke) Lye and subsp. *filiformis* (C. B. Clarke) Lye], a small annual pubescent plant with inflorescence of 1−2 spikelets in tropical E Africa; – subsp. **halophila** (Lye) R. W. Haines [bas.: *Abildgaardia hispidula* subsp. *halophila* Lye], a robust plant of sea-shores in E Tanzania (T6); – subsp. **intermedia** (Lye) R. W. Haines [bas.: *Abildgaardia hispidula* subsp. *intermedia* Lye] a rather small tufted annual known only from the type collected near sea-level in SE Kenya (K7); – subsp. **longispicata** Lye [syn.: *Abildgaardia hispidula* subsp. *longispicata* (Lye) J.-P. Lebrun & Stork; *A. longispicata* Lye, Lidia 1: 35, 1986; *Bulbostylis longispicata* (Lye) Lye, Nord. J. Bot. 28: 517, 2010], a "tussocky perennial with a suberect woody rhizome and many crowded culms" and large spikelets (10−15mm long), growing on sand in wadis, S Ethiopia; – subsp. **macroglumis** Lye [syn.: *Abildgaardia hispidula* subsp. *macroglumis* (Lye) J.-P. Lebrun & Stork], a densely tussocky annual, densely pubescent, with a simple, umbel-like rather small inflorescence, growing in cracks in granite outcrops in S Somalia; similar to subsp. *brachyphylla*; – subsp. **pyriformis** (Lye) R. W. Haines [bas.: *Abildgaardia hispidula* var. *pyriformis* Lye; syn.: *A. hispidula* subsp. *pyriformis* (Lye) Lye], a slender tufted annual, densely short hairy, with a simple lax umbel-like inflorescence; the nutlets are prominently stalked; occurring in E Africa from Eritrea S-wards to C Tanzania, in grassland and bush and disturbed vegetation; – subsp. **senegalensis** (Cherm.) Vanden Berghen [bas.: *Fimbristylis exilis* (Kunth) Roem. & Schult. var. *senegalensis* Cherm.; syn.: *F. hispidula* (Vahl) Kunth subsp. *senegalensis* (Cherm.) Napper; *Abildgaardia hispidula* subsp. *senegalensis* (Cherm.) J.-P. Lebrun & Stork], a slender annual with a widely spreading inflorescence, growing in sandy soils in W tropical Africa from Senegal E-wards to Nigeria – Niger. – Other unnamed eventual subspecies figure in Fl. Trop. E. Afr., Cyper.: 84−85, 2010.

B. humilis (Kunth) C. B Clarke 1894, non *Fimbristylis humilis* Peter 1936 (= *B. schimperiana*); Archer & Craven in Sabonet News 9/1: 18, 2004. – Icon.: Clarke & Mannheimer, Cyper. Namibia: 61, 86 (map), 1999.

bas.: *Isolepis humilis* Kunth

syn.: *I. humillima* Hochst. ex C. B. Clarke, nom. inval.; *I. breviculmis* Kunth; *Abildgaardia humilis* (Kunth) Lye; *Scirpus breviculmis* (Kunth) Boeckeler; *S. arenarius* (Nees) Boeckeler; *Bulbostylis breviculmis* (Kunth) C. B. Clarke; *Fimbristylis arenaria* Nees [*Bulbostylis arenaria* (Nees) Lindem. is *B. juncoides* (Vahl) Kük. ex Osten !, a plant from S USA, Mexico, West Indies, C. & S. America].

Tufted annual herb 1,5−20 cm tall; leaves 4−10 cm long, glabrous; inflorescence of 1−2 greenish-brown spikelets each 5−8 mm long.

Ecology unknown in Mozambique. According to Naczi & Ford, Sedges: Uses…: 68, 77, 2008, it is probably a wool alien, and a weed in gardens, potted plants.

Yemen (fide Wood, Handbook Yemen flora: 331, 1997, who puts *B. striatella* C. B. Clarke in synonymy); S. Africa, Namibia.

Note: Under *Abildgaardia striatella* (C. B. Clarke) Lye, Haines & Lye (Sedges and rushes E. Afr.: 125, 1983) write: *A. striatella* "is sometimes included in *Bulbostylis humilis* (Kunth) C. B. Clarke from South Africa…, a species which is closely related to *A.* [*Abildgaardia*] *sphaerocarpa*". On the other hand, Gordon-Gray (Cyper. Natal: 29−30, 1995) consider *Bulbostylis humilis* as a synonym of *B. arenaria*. And adds: "In tropical Africa, *B. striatella* is kept distinct at specific level…, whereas *B. arenaria* (*B. humilis*) seems to be known under the later name, *B. sphaerocarpha* [sic !] (Boeck.) C. B. Clarke". – *Isolepis humillima* Hochst. ex C. B. Clarke is also cited as a synonym of *Bulbostylis striatella*.

B. humilis sensu Cufod. 1970−71, non (Kunth) C. B. Clarke is *B. striatella*. *B. humilis* sensu Napper 1965 is *B. johnstonii*.

A continental revision of the complex *B. humilis, B. striatella, B. sphaerocarpa* is needed.

B. humpatensis Meneses – Icon.: Garcia de Orta 4: 255, 1956.

Annual tufted herb; stems 10−20 cm long, erect, almost setaceous, grooved, glabrous, somewhat hispid at apex; leaves setaceous, acute, hispid, measuring half the length of the stems; sheaths membranous, red-brown, mouth ciliate; inflorescence of 1 sessile and 1−2 stalked spikelets; peduncle 7−10 mm long; spikelet ovate, 8−11 × 3−4 mm.

Sub-shrubby vegetation on river side; 1800 m alt.

Near *B. cylindrica*.

B. igneotonsa Raymond; Fl. Trop. E. Afr., Cyper.: 71−72, 2010. – Icon.: Naturaliste Canad. 99: 29, 1972; Flora 176: 63, 1985 (under *Abildgaardia*).

syn.: *Abildgaardia igneotonsa* (Raymond) Kornaś

Perennial herb 13−60 cm tall with *thick strong horizontal rhizome*; stems many, *the old ones burnt* right *down leaving stubs of ± equal length* on the rhizome and new leaves and flowering shoots arising from within these burnt bases; stems 1 mm ∅, sulcate, graceful but stiff, glabrous or very shortly pilose; leaves with sheaths cinnamon-coloured, acute, with multicellular hairs to 2 cm long at mouth, often forming tangled woolly masses; inflorescence pale to dark brown, capitate, obturbinate, ± 1 × 1 cm, mostly with long white hairs at base but sometimes glabrous; spikelets 2−5, sessile, oblong, acute.

Brachystegia woodland; rocky grassy places near streams; 1100−2100 m alt.

Fire resisting plant, very common in Zambia.

The specimen Richards 18536 from Tanzania (Mbeya Distr.) has some inflorescences with 1−2 of the spikelets with pedicels 10−15 mm long.

B. johnstonii C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 107−108, 2010. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 126, 1983 (under *Abildgaardia*).

syn.: *Abildgaardia johnstonii* (C. B. Clarke) Lye

Tufted annual or short-lived perennial herb 10−30 cm tall with creeping rhizome; stems glabrous; leaves filiform, to half the length of the stems, scabrid; sheaths hairy with long white hairs at margins of mouth; inflorescence open with 1−5 solitary stalked spikelets, 5−9 mm long, 2 mm wide.

Hillside; valley grassland; *Erica-Agauria* associations; mossy areas with *Lycopodium*; swamps; seasonally wet ground in bush-savanna; 300−2000 m alt.

B. kanongaensis Goetgh.; Bull. Jard. Bot. Natl. Belg. 55: 246, 1985. – Icon.: idem, ibid. 54: 95, 1984.

Annual (? sometimes perennial) herb; stems 20−25 cm tall, tufted, erect, ribbed, sometimes minutely scabrous; leaves numerous, filiform; blade 8−12 cm long, conspicuously curved, transversely concave-trigonous, scabrid; mouth of sheaths fimbriate; inflorescence umbel-like, with 5−15 many-flowered acute spikelets each 5,5−7,5 mm long, 1,5−2 mm wide.

River bed on large lateritic rock slabs; c. 700 m alt.

B. lacunosa (Lye) Lye – Icon.: Nord. J. Bot. 7: 45, 1987 (under *Abildgaardia*).

bas.: *Abildgaardia lacunosa* Lye

Annual herb 5−15 cm tall; stems 0,2−0,4 mm ∅, ridged, minutely scabrid to short hairy; leaves from near base of stems, ± 3; sheaths with long flexuous whitish hairs at mouth; blades 1−3 cm long, 0,2−0,4 mm ∅, with a prominent midrib and 1−2 prominent lateral veins on either side *beneath*; inflorescence of 1−3 spikelets; glumes ovate, 2,5−3 mm long; nutlet pyriform, pitted due to many prominent depressions.

Seasonally damp soil, shallow soil over laterite; pans; 1350−1650 m alt.

Two collections made in 1961 and 1962, respectively, from N Zambia cited by Lye.

B. laniceps C. B. Clarke ex T. Durand & Schinz; M. Renier, Fl. Kwango 1: 73, 1948; Meneses in Garcia de Orta 4: 254, 1956; Jaeger & Adam, Végét. vascul. Mts Loma 2: 213, 1981; Brunel & al., Fl. analyt. Togo in Englera 4: 533, 1984; Bull. Jard. Bot. Natl. Belg. 55: 234, 1985; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 607, 1985; Cabezas & al. in Belg. J. Bot. 137: 5−6, 2004; Lisowski, Fl. Rép. Guinée 1: 393, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011; Onana, Vascul. pl. Cameroon…: 159; 2011; Mesterházy in Lidia 7/5: 102, 2012. – Icon.: Amer. J. Bot. 39: 376, 1952; Adam, Fl. descr. Mts Nimba 6: pl. 1045/16, 1983; Fl. Gabon 44, Cyper.: 24, 2012.

bas.: *Fimbristylis laniceps* K. Schum.

syn.: *F. atacorensis* A. Chev.; *Bulbostylis wittei* Cherm.

Perennial, densely tufted herb, erect, 15−55 cm tall; stems trigonous, glabrous; leaves filiform with red sheaths as base; inflorescences c. 1 cm ∅, spherical, dense, white-woolly when young, of c. 20 spikelets each lanceolate, c. 3 mm long.

Meadows on pans; in light, poor soils; swamps; esobe; dambo; lateritic soils; burned-, humid- and grassy savannas; seashores; 0−800 m alt.

B. lanifera (Boeckeler) Kük., excl. var. *glabra* (Ridl.) Kük. (= *B. andongensis*); Fl. Trop. Afr. 8: 442, 1902; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 607, 1985. – Icon.: Berhaut, Fl. ill. Sénégal 9: 161, 1988.

bas.: *Scirpus laniferus* Boeckeler

syn.: *Fimbristylis lanifera* (Boeckeler) K. Schum.; *Abildgaardia lanifera* (Boeckeler) Lye; *Bulbostylis coleotricha* (A. Rich.) C. B. Clarke var. *lanifera* (Boeckeler) C. B. Clarke p.p. quoad specim. ex Afr. occid.; *B. togoensis* Cherm.

Tufted perennial herb 11−22−30 cm tall with a thick felt of brownish hairs at base; leaves filiform, often nearly as long as stems, with short stiff hairs; lower part of old flowering stems persisting, stiff; flowering stems thin, c. 0,25 mm ∅; inflorescence small, a simple umbel of 1 terminal spikelet, usually with 2 branches from near the base, sometimes more, or only one; spikelets brown, ovoid, 3−4 × 1−1,5 mm.

Savanna woodland or grassland; humid savanna.

B. laxispicata (Lye) Lye – Icon.: Lidia 1: 36, 1986.

bas.: *Abildgaardia laxispicata* ("laxespicata") Lye

Annual herb; inflorescence lax; glumes 1,7−2 mm long; nutlets smooth (from the brief Latin diagnosis; the figure shows a tufted plant with filiform leaves hairy at the mouth of sheaths, and a branched inflorescence of stalked long spikelets and branches ending in stalked spikelets).

Ecology unknown.

Known only from the type collected in 1966.

B. leiolepis (Kük.) R. W. Haines; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 110, 2010. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 128, 1983.

bas.: *Bulbostylis schimperiana* (A. Rich.) C. B. Clarke var. *leiolepis* Kük.

syn.: *Abildgaardia leiolepis* (Kük.) Lye

Tufted annual herb 15−30 cm tall; stems ridged, glabrous; leaves c. 6 cm long, 0,5 mm wide, minutely scabrid, sheaths with scattered long hairs; inflorescence a small head 4−8 mm ∅ of 2−3 sessile spikelets but appearing umbellate when lower glumes and nutlets are shed; spikelets ovoid, 4−8 × 2,5−3,5 mm.

Wet ground over rocks; 1250−1400 m alt.

Only known from the type (Peter 37918) collected in 1926, and another gathering (Peter 38496) .

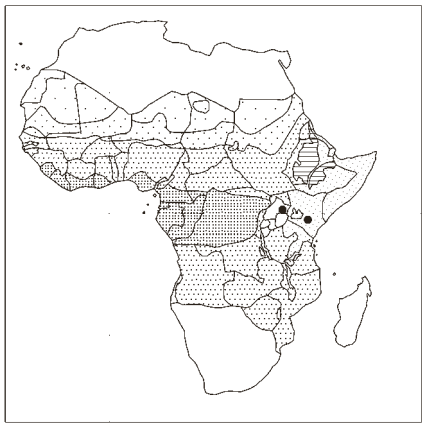
B. lineolata Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 55: 250, 1985.

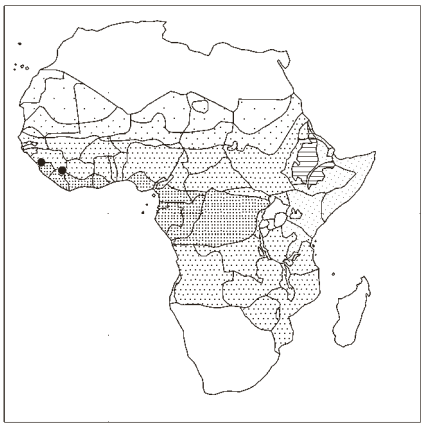
Annual tufted herb 10−20 cm tall; stems sulcate, glabrous; leaves numerous with long white hairs at mouth of sheaths; blade 2−5 cm long, 0,2 mm wide; inflorescence an umbel of many stalked spikelets and additional stalked spikelets from base of stalked spikelets; spikelets acute, 3−4 mm long, 1−1,3 mm wide, many-flowered.

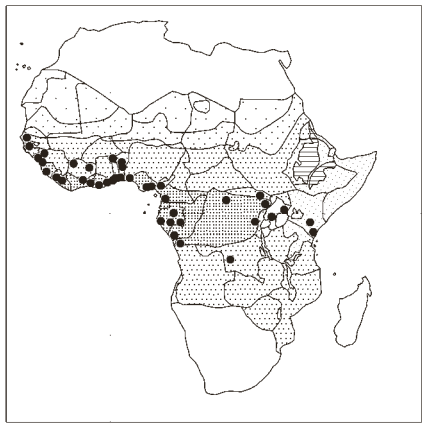
Ecology not recorded; river plains.

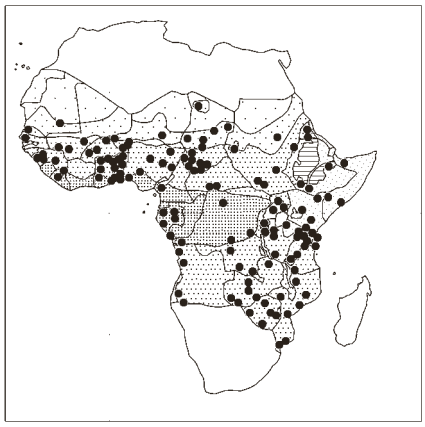
Closely resembling *B. densa*, *B. pusilla*.

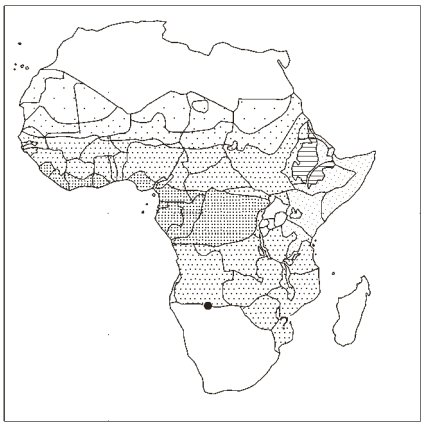
Presence in Tanzania (Peter 34840) not confirmed by Fl. Trop. E. Afr., Cyperaceae, 2010 (not cited).

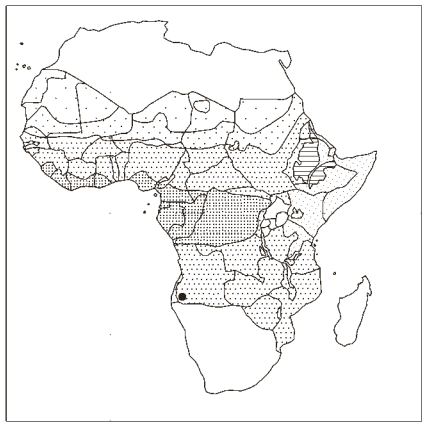

Bulbostylis glaberrima

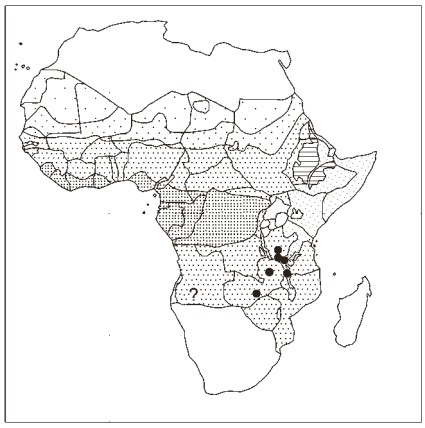

Bulbostylis guineensis

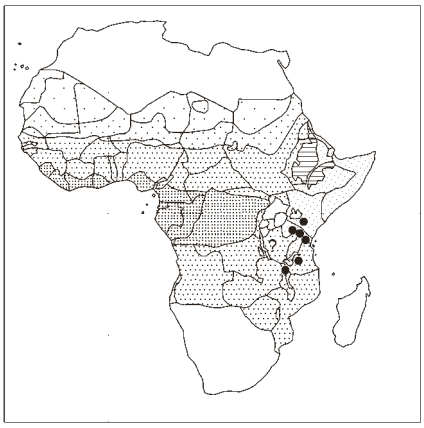

Bulbostylis hensii

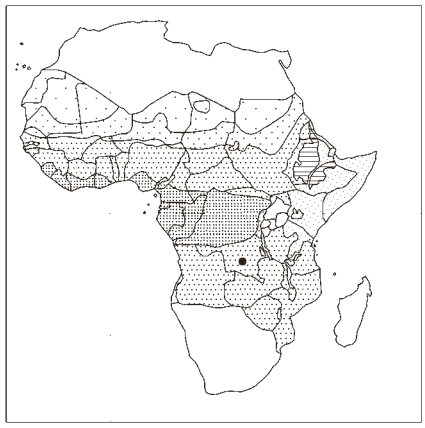

Bulbostylis hispidula

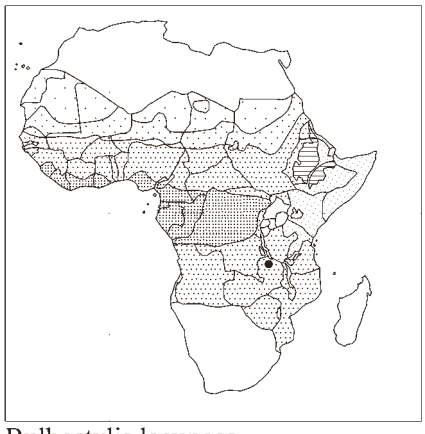

Bulbostylis humilis

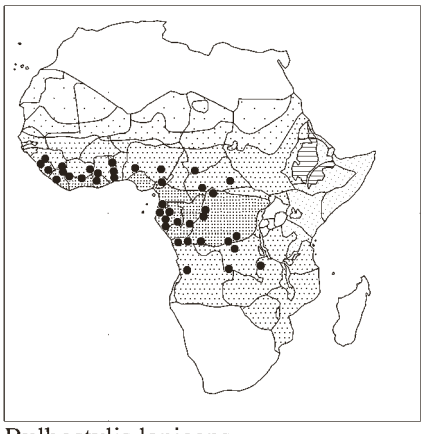

Bulbostylis humpatensis

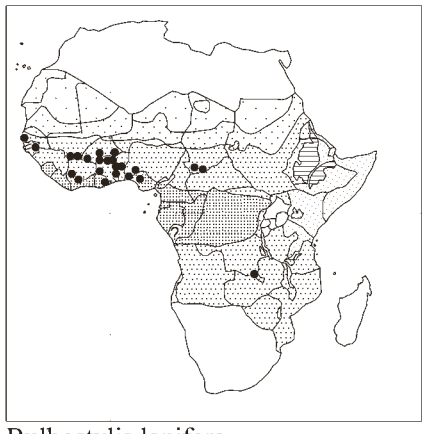

Bulbostylis igneotonsa


Bulbostylis johnstonii


Bulbostylis kanongaensis


Bulbostylis lacunosa


Bulbostylis laniceps


Bulbostylis lanifera

B. lolokweensis Verdc., Fl. Trop. E. Afr., Cyper.: 111−112, 2010.

Tufted annual herb 8−20 cm tall with very reduced rootstock; leaf sheaths with long hairs; blades linear, to 8 cm long with sparse short spine-like hairs; inflorescence of 1 terminal spikelet or with a second beneath but with separated subsessile bracts 2−4 mm long or sometimes absent; spikelets c. 5 mm long, 1,5−3,5 mm wide.

Rocks with semi-permanent stream and wet flushes, with *Myrothamnus*, *Isoetes, Utricularia*; c. 1650 m alt.

Only known from the type (Gilbert 5377) collected in 1979. Verdcourt explains the complicated mixture of the Kew specimen; most of the specimens belong to *B. densa*.

B. longiradiata Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 55: 221, 254, 1985.

Annual tufted herb; stems 15−30 cm tall, erect, grooved, slightly hispid; leaves several; throat of sheaths with many white long hairs; blade 4−12 cm long, c. 0,3 mm wide, hispid; inflorescence (twice) umbellate of 0−2 branched peduncles to 4 cm long; spikelets < 10, 5−8 mm long, c. 1,5 mm wide, acute, multi-flowered.

Ecology not recorded.

Often confused with *B. pusilla* subsp. *congolensis*, and also with *B. hispidula*. The single specimen from Zaire is said to differ from those in Burundi.

(**B. longispicata** (Lye) Lye, Nord. J. Bot. 28: 517, 2010); Lye in Biol. Skr. 54: 204, 2001.

bas.: *Abildgaardia longispicata* ("longespicata") Lye, Lidia 1, 35, 1986.

A perennial herb with a lax compound inflorescence of 1−5 groups of spikelets (diagnosis in Lidia, l.c.).

The name *B. longispicata* is based on specimen Corradi 1484 from S Ethiopia (Omo region, Murle wadi, 1939). The same specimen figures under *B. hispidula* subsp. *longispicata* (See above under that taxon).

B. macra (Ridl.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 124, 1899; Bull. Jard. Bot. Natl. Belg. 55: 227, 1985; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006; Figueiredo & Smith, Pl. Angola: 178, 2008; Fl. Trop. E. Afr., Cyper.: 72, 2010; Géreau & al., Lake Nyasa florist. checklist: 45, 2012; Veltjen & al. in Phytotaxa 201: 222, 2015 (in comparative table). – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 97, 1983.

bas.: *Fimbristylis macra* Ridl.

syn.: *F. zambesica* K. Schum. ("sambesica"); *Bulbostylis zambesica* (K. Schum.) C. B. Clarke; *Abildgaardia macra* (Ridl.) Lye

Tufted perennial herb 5−35 cm tall with ± swollen base; stems slender, 0,2−0,5 mm ∅, angular, scabrid below the inflorescence; leaves numerous, filiform, bright emerald green, 2−12 cm × 0,3−0,5 mm, scabrid or slightly hairy; sheaths with dense long whitish hairs at mouth; inflorescence *a solitary terminal* ovoid to lanceolate, *spikelet* 6−13 × 2−4 mm.

Rather poor thicket-grown pastures on river; dambo; *Brachystegia* woodland on rocky hilltops and slopes; dry grassland; miombo woodland; 800−1900 m alt.

B. macroanthela (Lye) Lye

bas.: *Abildgaardia macroanthela* Lye

Annual herb; inflorescence lax; glumes 2−2,5 mm long; nutlets 0,7−0,9 mm long, transversely rugose (from the brief Latin diagnosis).

Sandy woodland.

Only known from the type collected in 1966 (Robinson 6877).

B. macrostachya (Lye) R. W. Haines; Fl. Trop. E. Afr., Cyper. : 71, 2010. – Icon. : Haines & Lye, Sedges and rushes E. Afr.: 97, 1983.

bas.: *Abildgaardia macrostachya* Lye

Densely tufted perennial herb 25−80 cm tall with thick swollen base covered with old flattened leaf sheaths, often with dense thick long greyish silky hairs within; stems 0,6−1,5 mm ∅, very scabrid; leaf blades 5−20 cm long, 0,3−0,5 mm wide, strongly scabrid, straw-coloured to brown; inflorescence of 1 sessile and 3−5 stalked spikelets; peduncles flattened, 0,5−4 cm long, densely-scabrid; spikelets 1−4 cm long, 3−5 mm wide.

Bushland; rocky hillsides in miombo woodland with *Brachystegia spiciformis*, *Julbernardia*, *Isoberlinia angolensis*, *Burkea*, *Monotes africanus*; 1350−1600 m alt.

B. malawiensis (Lye) Lye

bas.: *Abildgaardia malawiensis* Lye

Perennial herb; inflorescence simple of 1−3 spikelets; glumes 3−4,5 long; nutlets minutely papillose (from the brief Latin diagnosis).

Mountains; 2200 m alt.

Only known from the type collected in 1962 (Robinson 5307).

B. megastachys (Ridl.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 125, 1899; Meneses in Garcia de Orta 4/2: 254, 1956; Bull. Jard. Bot. Natl. Belg. 55: 223, 254 (fig. nutlet), 1985.

bas.: *Fimbristylis megastachys* Ridl.

syn.: *Abildgaardia megastachys* (Ridl.) Lye; *Bulbostylis stricta* Turrill

Perennial herb with stems densely tufted, 30 cm tall; stems rigid, glabrous at top; leaves hardly 8 cm long, filiform, glabrous or minutely scabrous on margins; mouth of leaf sheaths glabrous; inflorescence a simple umbel of *3−5-solitary* oblong *spikelets*, each 1,1 × 0,3 cm and more, many-flowered, rusty brown.

Rather dry low hills at edges of woods; dambo; wet grassland: 1150−1538 m alt.

Also in Namibia ? (Archer & Craven in Sabonet News 9/1: 19, 2004).

B. melanocephala (Ridl.) C. B Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 124, 1899.

bas.: *Fimbristylis melanocephala* Ridl.

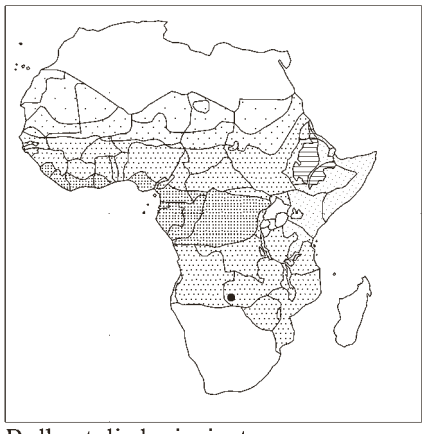
Stems 2,5−5 cm tall, erect, canaliculate, glabrous; leaves numerous, filiform, acute, glaucescent, shorter than stems; sheaths purple, hispid, membranous; inflorescence of 1 spikelet (rarely 2), chestnut-red, ovoid globose, c. 0,3−0,4 cm long; nutlets unknown.

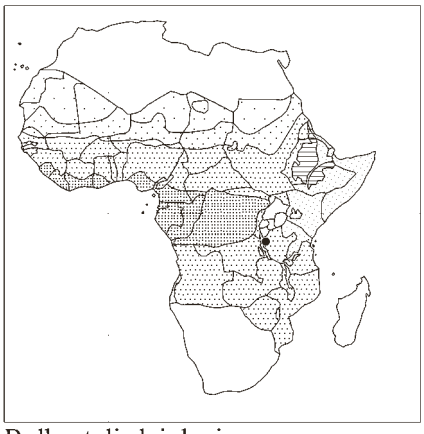
Pastures among short herbage with *Xyris*, *Eriocaulon, Fimbristylis schoenoides* (Retz.) Vahl in places full of thorn-bushes.

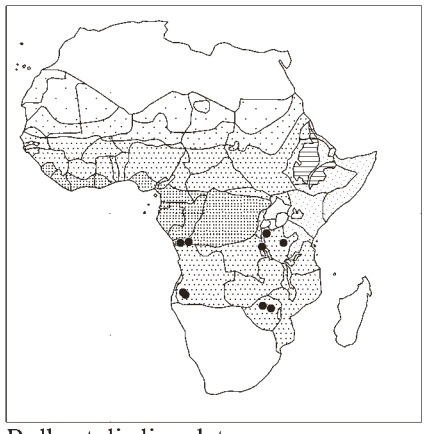
S. Africa (Transvaal).

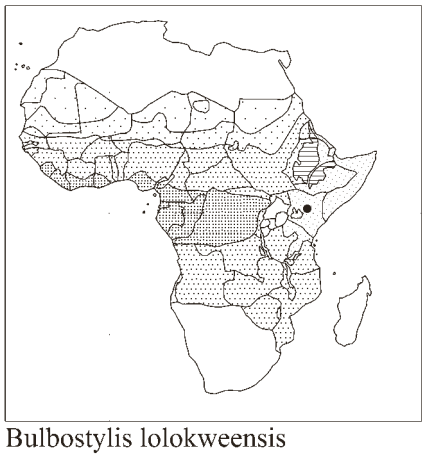
B. meruensis Verdc., Fl. Trop. E. Afr., Cyper.: 109, 2010.

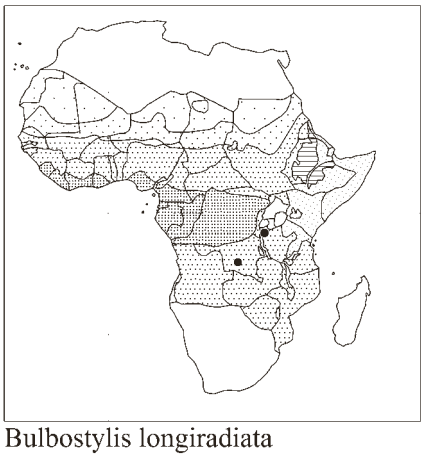
Tufted annual herb *1,5−3 cm* tall with reduced rootstock with a few slender roots; stem scarcely developed; leaves overtopping the very short flowering stems, linear, 1,5−3 cm long ; sheaths with long hairs; blades grooved with very short spine-like hairs and many brown dots; inflorescences 1 to several per plant, shorter than leaves, each with one spikelet; peduncles to 1 cm long.

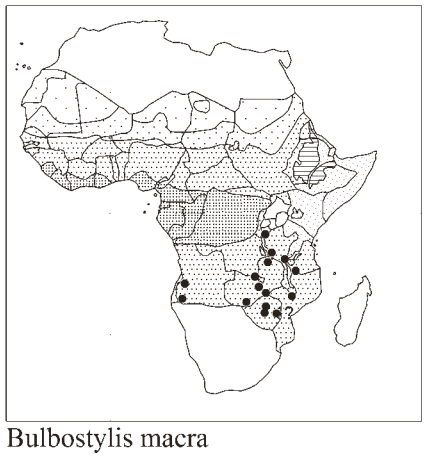

Bulbostylis laxispicata

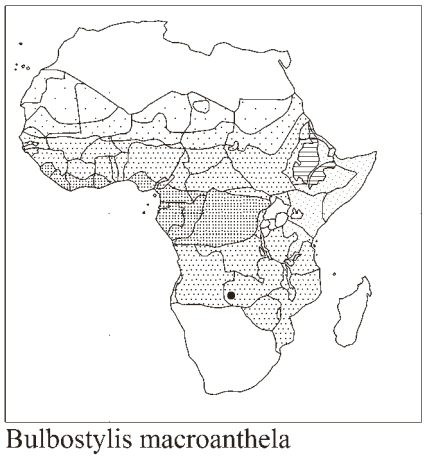

Bulbostylis leiolepis

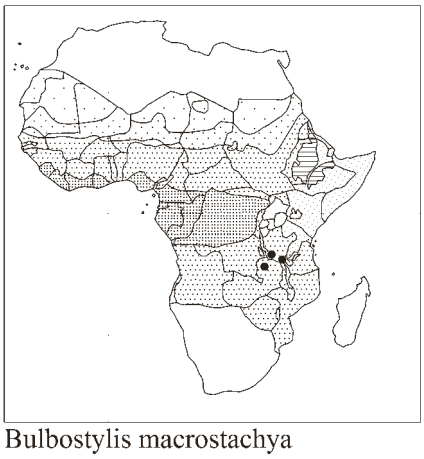

Bulbostylis lineolata

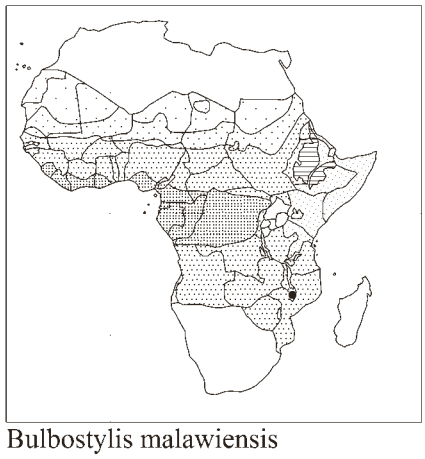

Bulbostylis lolokweensis

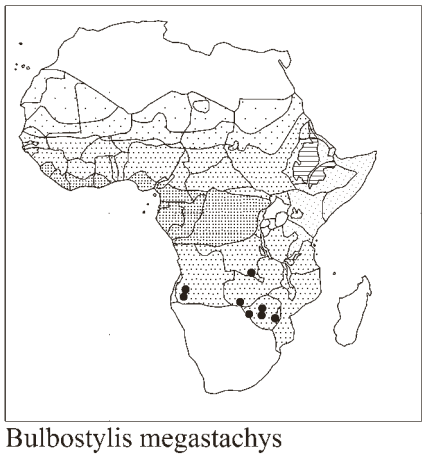

Bulbostylis longiradiata

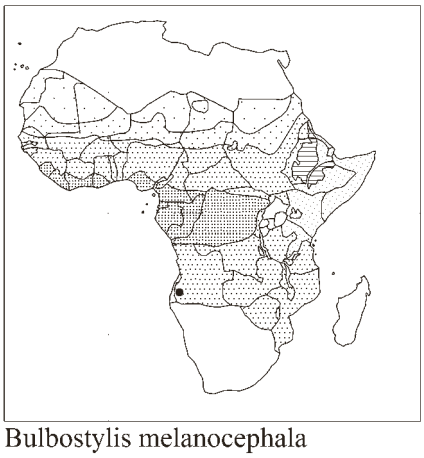

Bulbostylis macra

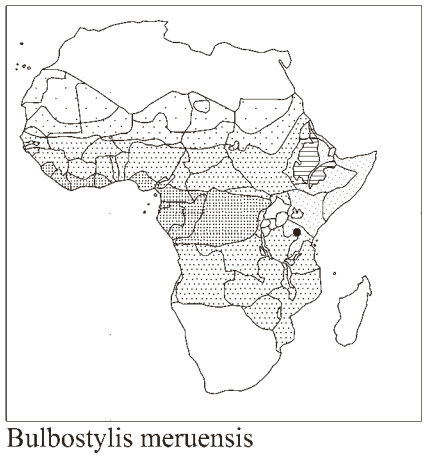

Bulbostylis macroanthela


Bulbostylis macrostachya


Bulbostylis malawiensis


Bulbostylis megastachys


Bulbostylis melanocephala


Bulbostylis meruensis

Along track, W flank of Mt Meru, dense moor-like shrub formation; c. 2610 m alt.

Only known from the type collected in 1985.

B. microcarpa (Lye) R. W. Haines; Bull. Jard. Bot. Natl. Belg. 55: 240, 1985; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop.E. Afr., Cyper.: 90−91, 2010. – Icon.: Nord. J. Bot. 3: 235, 1983; Haines & Lye, Sedges and rushes E. Afr.: 112, 1983.

bas.: *Abildgaardia microcarpa* Lye

Tufted annual herb 5−20 cm tall; stems 2−4 mm ∅, with prominent ridges, *strongly scabrid*; leaves dense, many, filiform, 1−10 cm long, scabrid; sheaths scabrid and with long white hairs at mouth; inflorescence 1,5−3 cm wide of 1 sessile and 1−3 pedunculate spikelets; spikelets ovoid, 4−6 × 2−4 mm, often with spreading glumes, 10−20-flowered.

Saline grassland with bushes on ± bare sandy soils; savanna; 400−600 m alt.

Endemic in Tanzania. However, Goetghebeur & Coudijzer (Bull. Jard. Bot. Natl. Belg. 55: 240, 1985) report the plant from Zaire. They state that the 3 Zairean specimens are somewhat deviating from the original description. And that eventually, one specimen from Shaba might be included. Presence in Zaire uncertain (not mapped by us).

B. microelegans (Lye) R. W. Haines; Bull. Jard. Bot. Natl. Belg. 55: 253, 1985; Fl. Trop. E. Afr., Cyper.: 96, 2010. – Icon. : Nord. J. Bot. 1: 757, 1981 (nutlet); Haines & Lye, Sedges and rushes E. Afr.: 117, 1983; Fl. Eth. & Eritrea 6: 420, 1996.

bas.: *Abilgaardia microelegans* Lye

Tufted annual herb 5−25 cm tall; stems grooved, 0,2−0,3 mm ∅, glabrous; leaf blades channelled, c. 2 mm wide; leaves glabrous save for some flexuous hairs c. 3 mm long on sheaths; inflorescence umbel-like of 1 sessile and 2−6 stalked spikelets in groups of sessile and stalked spikelets, these long, narrow, 3−5 × 0,7−1 mm.

Grassland and scrub on poor soil; wet grassland; lateritic pans; shallow wet soil over rocks; bare soil at edge of grassland paths; murram pits; recently disturbed soil; c. 500−1800 m alt.

Most similar to *B. pusilla* but nutlets different.

B. micromucronata Goetgh., Bull. Jard. Bot. Natl. Belg. 54: 96−97 (illustrations), 1984; idem, ibid. 55: 236, 1985.

Tiny tufted annual herb 4−12 cm tall; stems ribbed, glabrous; leaves numerous, filiform, with numerous long white hairs at mouth of sheaths; blade 2−5 cm long, 2 mm wide, margins scabrous; inflorescence umbel-like of 3−8 spikelets, branches 0,2 to 1 cm long; spikelets long, acute, many-flowered, 2,5−3,5 × 2 mm; glumes with a conspicuous, recurved mucro.

Grassy plateau; dried up swamp.

Known only from the type collected in 1933, and perhaps another collection in S Zaire.

Near *B. mucronata* C. B. Clarke from Namibia (? and Angola).

B. microrotundata (Lye) Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Nord. J. Bot. 7: 48, 1987 (under *Abildgaardia*).

bas.: *Abildgaardia microrotundata* Lye, Lidia 1/1: 33, January 1986; Nord. J. Bot. 7/1: 47, March 1987.

Annual herb with few to many stems and a minute root-system, sometimes forming slender erect rhizomes; stems 15−18 cm long, 0,2−0,3 mm ∅, triangular with 6−9 prominent rounded ridges, glabrous; leaves from the basal 3 cm only, usually 2 on each stem, all with blades; sheaths pallid to light reddish brown, glabrous or with a few scattered hairs and with 1−2 mm long flexuose whitish hairs at mouth, usually with 3 slender nerves on each side of midrib; blades 2−6 cm long, 0,2−0,3 mm wide, scabrid at least on margins; lower surface with 3 prominent nerves; upper surface without nerves; inflorescence a 0,5−1,2 cm wide and 0,5−2 cm long, lax, often simple umbel of 1 sessile spikelet subtended by 2−5 stalked spikelets; peduncles 2−9 mm long, 0,2 mm ∅, angular, glabrous; spikelets ± ovate, 2−3 × 1,5−2 mm, apex obtuse, with numerous densely set spirally arranged glumes, 25−40-flowered; nutlets triangular-pyriform, 0,4−0,5 mm long.

Sandy roadside; shallow soil over flat rocks; 1700 m alt.

Only known from the type collected in 1983 (Lye 9694).

Near *B. taylorii* (with spikelets 2 mm long, less hairy glumes, nutlets 0,8−1 mm long).

Not in Fl. Trop. E. Afr., Cyper., 2010.

B. mlangoyajehenum Verdc., Fl. Trop. E. Afr., Cyper.: 85, 2010 (epithet meaning "Hell's gate" in Swahili).

Very densely tufted perennial herb 15−40 cm tall with up to several hundred rigidly erect narrowly striate stems with *dense upwardly directed hairs* c. 0,5 mm long; leaf sheaths pale yellow-brown, to 5 cm long, densely appressed-pubescent with long hairs at mouth; blades 1,2 cm long; inflorescences obtriangular of 1 sessile spikelet and 4−5 stalked spikelets; stalks stout, 5−7 mm long, strongly-striate; spikelets 9 mm long.

Very hot soil by stream-jets; 1700−1950 m alt.

"It is extraordinary that this plant, well know to the many visitors to Hell's Gate, appears to be new. It has mostly been named "*Fimbristylis exilis*" but differs from *B. hispidula* indumentum, habit and nutlet; it has also been confused with four other quite different species" (Verdcourt, l.c.). *Fimbristylis exilis* (Kunth) Roem. & Schult. is cited as a synonym of *Bulbostylis hispidula* subsp. *hispidula* by Haines & Lye, Sedges and rushes E. Afr.: 104, 1983 (See above under that species).

B. multispiculata Cherm., Arch. Bot. 4, Mém. 7: 38, 1931.

Perennial herb with a short, woody rhizome; stems 50−80 cm long, 1−1,5 mm ∅, shortly hairy, grooved, base not bulbous; leaves 35−45 cm long, 0,5 mm wide, flexuose, subcanaliculate, shortly hairy; sheaths pale brown, mouth pilose; infloresence compound, 3,5 cm ∅, with 30−100 spikelets; primary branches 8−12, erect, unequal, to 5−8 cm long; secondary branches 0,6−0,3 cm long; spikelets single, lanceolate, acute, 6−8 × 2 mm.

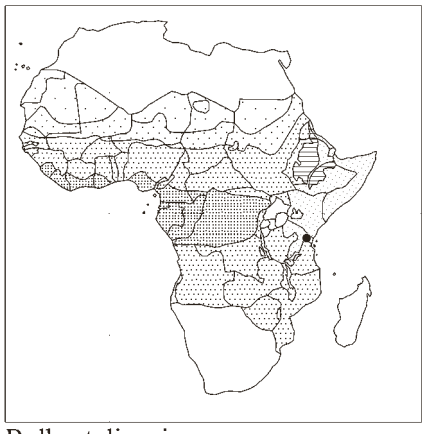
Rocks.

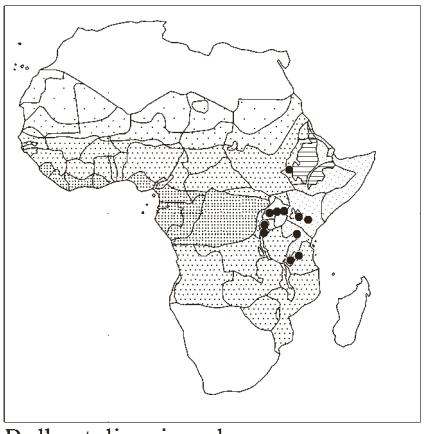
Near *B. argenteobrunnea* from Kenya.

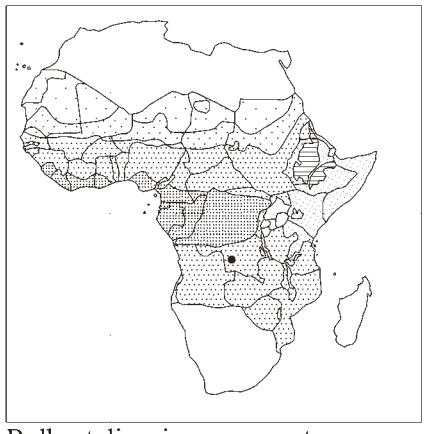
B. nemoides Goetgh., Bull. Jard. Bot. Natl. Belg. 54: 98, 99 (fig.) 1984; idem, ibid. 55: 253, 1985; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Ntore & al., Red List of the endemic and range-restricted vascular plants of Burundi: 158, 2018.

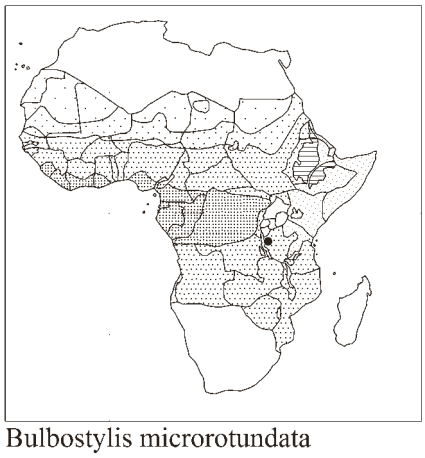
Annual herb; stems 8−20 cm tall, solitary or clustered, erect, ribbed or grooved, glabrous, sometimes scabrous at apex; leaves few or several; mouth of sheaths with several long, white hairs; blades 3−10 cm long, 0,3 mm wide, scabrid below; inflorescence a simple umbel of 2−5 spikelets, rarely 1; branches to 1,5 cm long, glabrous, sometimes slightly scabrous at apex; spikelets spherical or subcylindric, 3,5−6,5 × 3−3,5 mm, obtuse, multiflowered.

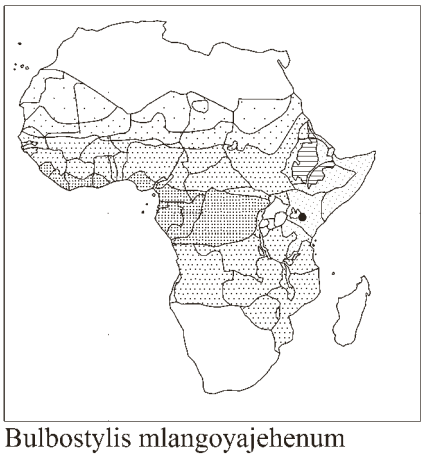
On sand; palm savanna; steppe with *Bulbine abyssinica*; 780−800 m alt.

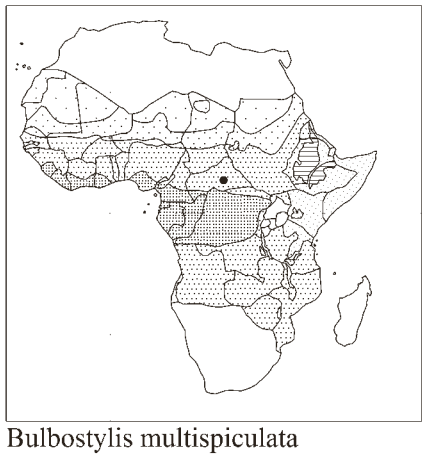

Bulbostylis microcarpa

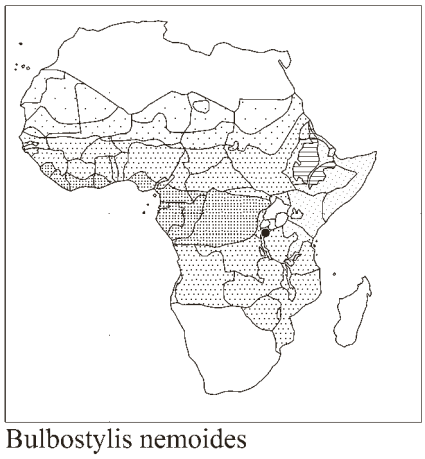

Bulbostylis microelegans

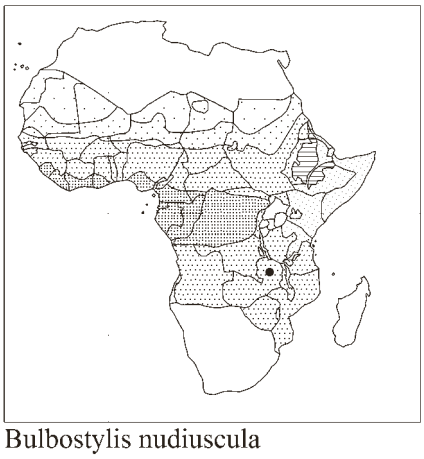

Bulbostylis micromucronata

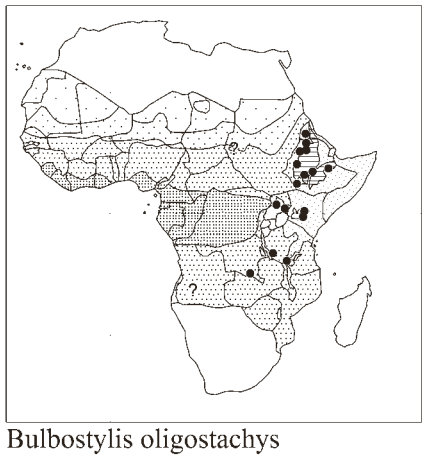

Bulbostylis microrotundata

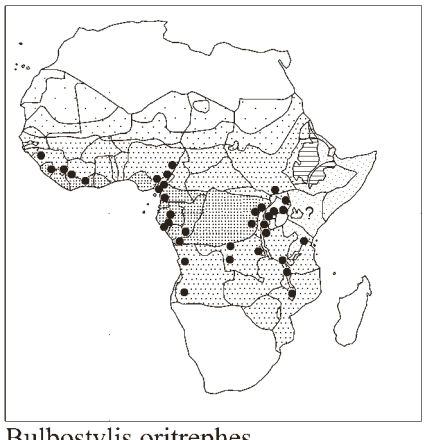

Bulbostylis mlangoyajehenum

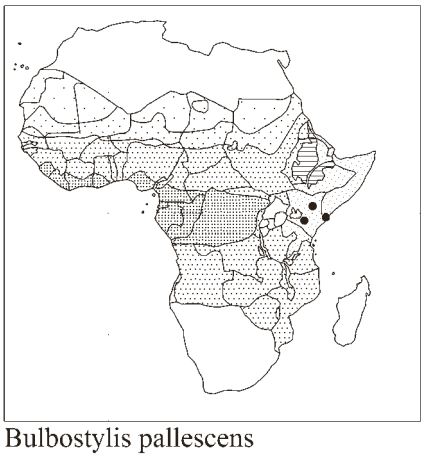

Bulbostylis multispiculata

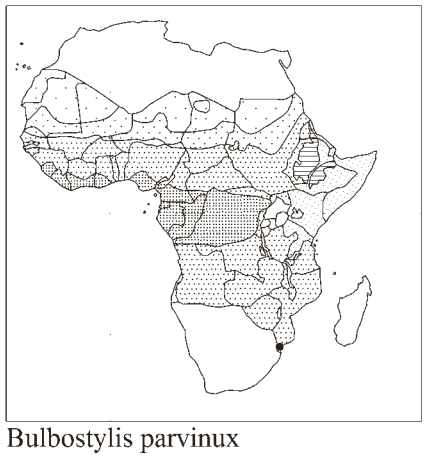

Bulbostylis nemoides


Bulbostylis nudiuscula


Bulbostylis oligostachys


Bulbostylis oritrephes
subsp. oritrephes


Bulbostylis pallescens


Bulbostylis parvinux

B. nudiuscula (Lye) Lye – Icon.: Lidia 1: 34, 1986.

bas.: *Abildgaardia nudiuscula* Lye

Annual herb without leaves (blades); inflorescence a lax simple umbel, 2−3-radiate; glumes 5−7 mm long; nutlets transversely rugose (from the brief Latin diagnosis).

Shallow laterite pan, seasonally damp.

Only known from the type collected in 1961 (Robinson 4622).

B. oligostachys (Hochst. ex A. Rich.) C. B. Clarke; Bull. Jard. Bot. Natl. Belg. 55: 218, 1985; Fl. Trop. E. Afr., Cyper.: 87, 2010. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 108, 1983; Fl. Eth. & Eritrea 6: 417, 1997 (as *B. hispidula* subsp. *oligostachys*).

bas.: *Fimbristylis oligostachys* Hochst. ex A. Rich. [*oligostachya* (Hochst. ex A. Rich.) K. Schum., orth. var.].

syn.: *Scirpus oligostachys* (Hochst. ex A. Rich.) Boeckeler; *S. purpureoater* Boeckeler; *Abildgaardia hispidula* (Vahl) Lye var. *oligostachys* (Hochst. ex A. Rich.) Lye; *A. oligostachys* (Hochst. ex A. Rich.) Lye; *Fimbristylis purpureoatra* (Boeckeler) C. B. Clarke ex Engl.

Tufted annual herb 5−45 cm tall with many stems 0,7 mm wide, deeply ridged, glabrous to densely shortly pubescent; leaf sheaths glabrous to densely hairy; blades 5−15 cm long, 0,5 mm wide, densely hairy or glabrous, or with short spine-like hairs; inflorescence condensed umbel-like with sessile and shortly stalked spikelets, ± triangular in outline; stalks to 5 mm long; spikelets short with few glumes.

Wet rocks and flushes in wooded grassland; peat pans at base of granite outcrops; silty roadside ditches; seasonally wet soils, especially on shallow soils over rocks; 900−2700 m alt.

Also in Angola according to Figueiredo & Smith, Pl. Angola: 178, 2008.

Fimbristylis sp. sensu Wickens, Fl. Jebel Marra, on riverbanks, represents perhaps this species (Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015).

B. oritrephes (Ridl.) C. B. Clarke subsp. **oritrephes**; Bull. Jard. Bot. Natl. Belg. 55: 228, 1985; Chapman & Chapman, Forests Taraba & Adamawa States, Nigeria: c49, 2001; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006; Lisowski, Fl. Rép. Guinée 1: 393, 2009; Fl. Trop. E. Afr., Cyper.: 77−78, 2010; Onana, Vascul. pl. Cameroon…: 159, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 102, 2015; Veltjen & al. in Phytotaxa 201: 222, 224, 2015. – Icon.: Jaeger & Adam, Végét. vascul. Mts Loma 2: 214, 1981; Haines & Lye, Sedges and rushes E. Afr.: 101, 1983; Strelitzia 2: 34, 1995 (nutlet); Fl. Gabon 44, Cyper.: 95, 2012.

bas.: *Fimbristylis oritrephes* Ridl.

syn.: *Abildgaardia oritrephes* (Ridl.) Lye; *Bulbostylis trichobasis* (Bak.) C. B. Clarke var. *leptocaulis* C. B. Clarke, var. *uniseriata* C. B. Clarke, var. *caespitosa* (Peter) Kük.; *B. caespitosa* Peter; *B. oritrephes* var. *major* Meneses; *B. oritrephes* sensu Fl. W. Trop. Afr., ed. 2, 3/1: 317, 1972, p.p., excl. syn. *B. clarkeana* Hutch. ex Bodard

Perennial herb 3−40 cm tall with rhizome composed of characteristic confluent swollen stem bases; stems in rows, 0,3−0,5 mm ∅ with many white spreading hairs 0,2−0,4 mm long below, almost glabrous above; leaves 2−6 cm long, 0,2−0,5 mm wide, flat, usually densely hairy; many leaves reduced to their sheaths; sheaths grey to reddish or golden brown, glabrous or pubescent with few to many flexuous hairs at mouth; inflorescence capitate to umbel-like, with 3–(?10) spikelets, 1 sessile surrounded by 1−2 stalked ones; spikelets ovate, 4−8 × 2 mm.

Burnt and (over) grazed grassland; grassy hillsides; wooded grassland; shallow rocky soil, dried-up swamps; roadsides; mostly dry places; grassy savannas; disturbed areas; 0−2400 m alt.

S. Africa (subsp. **australis** B. L. Burtt).

B. pallescens (Lye) R. W. Haines; Thulin, Fl. Somalia 4: 111−112, 1995; Fl. Trop. E. Afr., Cyper.: 105−106, 2010. – Icon.: Nord. J. Bot. 1: 752, 1981; Haines & Lye, Sedges & rushes E. Afr.: 124, 1983.

bas.: *Abildgaardia pallescens* Lye

Tufted annual herb 5−12 cm tall with minute root system; stems 0,3−0,5 mm wide, prominently ribbed, with short spine-like hairs; leaves basal; blades 1−5 cm long, 0,3−0,7 mm wide, margins and ribs densely scabrid; sheaths straw-coloured to pale brown, densely scabrid and with long flexuous hairs at mouth; inflorescence 5−20 mm wide, of 2−5 crowded spikelets; these straw and brown or pale green, ovoid, 3−6 × 2−4 mm.

Open sandy soil in shrubland; *Commiphora*, *Euphorbia*, *Cordia*, *Acacia* bush with sparse ground cover; 20−250−? 1800 m alt.

B. parvinux C. B. Clarke; Gordon-Gray in Strelitzia 2: 35, 1995; Ngwenya in Sabonet News 8/1: 18, 2003. – Icon.: Raymond in Naturaliste Canad. 99: 30, 1972 (as *B. mozambica*); Gordon-Gray, o.c.: 34 (nutlet).

syn.: *B. mozambica* Raymond; *Scirpus parvinux* (C. B. Clarke) K. Schum.; *Abildgaardia parvinux* (C. B. Clarke) Lye; *Bulbostylis collina* Kunth in herb. (fide Raymond, l.c.).

Perennial densely tufted herb with an oblique hard rhizome c. 1 cm ∅, brown, with long rigid roots; stems many (7−8), 45−55 cm long, slender but rigid, striate, glabrous; leaves reduced to sheaths ending in short acute blades, woolly hairy at mouth and apex; inflorescence a dense globular head 1,5−2 cm ∅ of ovate flattened distichous spikelets each 7 mm long, woolly hairy when young later glabrescent.

Wetland; on sandy, white and pale red soils…in *Terminalia* and *Acacia burkei* woodland (S. Africa).

S. Africa.

The German plant collector F. R. R. Schlechter (1872−1925) worked in S Mozambique (Lourenço Marques) in 1897. His collection of this plant, 11543 (30−11−1897) and the type of the name *B. mozambica* Raymond (J. G. da Costa 23, 1958), "are so alike that they seem to have been collected from the same clump, at an interval of 60 years" (Raymond, l.c.). Distributed as *B. collina* Kunth to various herbaria, "a variable species whose correct name is *B. contexta* (Nees) Bodard… [which] has little in common with *B. mozambica*".

Vegetatively resembling *B. boeckeleriana*.

B. pilosa (Willd.) Cherm., non (Steud.) Beetle; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 124, 1899 (as *B. aphyllanthoides*); Brunel & al., Fl. analyt. Bénin in Englera 4: 533, 1984; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 608, 1985; Bull. Jard. Bot. Natl. Belg. 55: 229, 1985; Simpson & Inglis in Kew Bull. 56: 261, 2001; Fl. Trop. E. Afr., Cyper.: 70−71, 2010; Onana, Vascul. pl. Cameroon…: 159, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 42, 2012; Schmidt & al. in Phytotaxa 304: 47, 2017 (map). – Icon.: Bot. Not. 126: 327, 1973 (under *Abildgaardia*); Haines & Lye, Sedges and rushes E. Afr.: 96, 1983; Berhaut, Fl. ill. Sénégal 9: 162, 1988 (under *Abildgaardia*); Fl. Gabon 44, Cyper.: 27, 2012.

bas.: *Schoenus pilosus* Willd.

syn.: *Abildgaardia pilosa* (Willd.) Nees; *Isolepis pilosa* (Willd.) Steudel; *Fimbristylis pilosa* (Willd.) K. Schum. 1895, non (Poir.) Vahl 1805, nom. illeg.; *F. africana* C. B. Clarke 1894, nom. nud., and C. B. Clarke 1902; *F. aphyllanthoides* Welw. ex Ridl.; *Bulbostylis aphyllanthoides* (Welw. ex Ridl.) C. B. Clarke; "*Fimbristylis* (*Abildgaardia pilosa*)" Nees

Densely tufted perennial herb 20−80 cm tall with a stout creeping rhizome; stems crowded, 0,5−2 mm ∅, scabrid above, and minutely hairy below inflorescence, glabrous or hairy towards base; leaves 5−25 cm long, 1−3,5 mm wide, flat, ribbed, minutely hairy; sheaths brown or reddish brown, hairy and with long white hairs on margins of mouth; inflorescence a terminal *head* of 3−10 clustered *compressed* ovoid spikelets, each 8−15 × 3−8 mm.

Seasonally flooded wooded grassland; mangrove swamps; low sunny wooded hills near river; bushland; *Brachystegia* etc. woodland; coconut groves; burnt grassland; savanna on deep soil; often on white sand; fallows; gallery forest; 1−1400 m alt.

Stems and whole plant used in Ghana to make brooms.

"Simulating *Statice*".

B. pluricephala (Lye) Lye – Icon.: Nord. J. Bot. 7: 49, 1987.

bas.: *Abildgaardia pluricephala* Lye, Lidia 1: 35, 1985.

Annual herb with 1-few stems 1−15 cm long, 0,2−0,3 mm ∅, angular with 3−6 rounded longitudinal ridges, glabrous; leaves from the basal 3 cm only, usually 4−6 on each stem and at least the 2−4 upper with well developed blades; sheaths light reddish brown with many prominent glabrous longitudinal ridges; the oblique mouth with many long flexuose whitish hairs; blades to 6 cm long, 0,2−0,3 mm wide, flat or canaliculate, often minutely scabrid near tip, and with 3 prominent nerves beneath; both surfaces sometimes reddish-dotted; inflorescence umbel-like, 0,4−3 cm long, 0,5−5 cm wide, of 1 sessile group of spikelets subtended by 1−3 stalked groups of spikelets; major peduncles 0,5−3 cm long; spikelets ovate and angular, 3−4 × 1−2 mm, apex acute with few spirally arranged glumes, 5−10-flowered.

Sandy hills; 1200−1400 m alt.

B. pseudoperennis Goetgh.; Faucon & al. in Pl. Ecol. Evolution 143: 9, 2010. – Icon.: Bull. Jard. Bot. Natl. Belg. 55: 237, 255, 1985; Malaisse & al., Copper-cobalt flora Upper Katanga…: 325−326, 2016.

Annual tufted herb 1−3−10−15 cm tall; stems grooved, ± scabrous; leaves numerous; blades 2−8 cm long, 0,2 mm wide, scabrous, with long white hairs at mouth of sheaths; inflorescence umbel-like or completely condensed; spikelets ± ovate, many-flowered, 4−7 mm long.

Copper-contaminated soils; steppe savannas on copper outcrops; copper polluted soils.

Rather variable.

Copper-belt vicariant of *B. mucronata* C. B. Clarke (Namibia).

(***B. puberula*** (Kunth) C. B. Clarke = **B. thouarsii**).

B. pusilla (Hochst. ex A. Rich.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 125, 1899 (as *B. parva*); Bull. Jard. Bot. Natl. Belg. 55: 244−245 (*B. congolensis*), 246−247, 255 (fig. nutlet), 1985; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 607, 608, 1985 (incl. *B. congolensis*); Harvey & al., Pl. Bali Ngemba…: 136, 2004; Cabezal & al. in Belg. J. Bot. 137: 6, 2004 (Equat. Guinea); Burrows & Willis, Pl. Nyika Plateau, Malawi: 297, 2005; Figueiredo & Smith, Pl. Angola: 178, 2008 (incl. *B. congolensis*);

Steentoft, Flow. pl. W. Africa: 317, 2008; Lisowski, Fl. Rép. Guinée 1: 392, 2009 (incl. *B. congolensis*); Onana, Vascul. pl. Cameroon…: 159, 2011 (incl. var. *congolensis*); Onana & Cheek, Red Data Book flow. pl. Cameroon: 364, 2011; Mesterházy in Lidia 7/5: 102, 2012 (idem); Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012, with maps by Schmidt & al. in Phytotaxa 304: 47, 2017; Darbyshire & al., Pl. Sudan & S. Sudan: 102−103, 2015. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 115−116, 1983; Berhaut, Fl. ill. Sénégal 9: 162, 1988; Strelitzia 2: 34, 1995 (nutlet); Fl. Eth. & Eritrea 6: 418 (*B. pusilla* subsp. *yalingensis*), 419 (*B. pusilla* subsp. *congolensis*), 1997; Fl. Trop. E. Afr., Cyper.: 94, 2010; Fl. Gabon 44, Cyper.: 19 (*B. congolensis*), 27 (*B. pusilla* subsp. *yalingensis*), 2012.

bas.: *Fimbristylis pusilla* Hochst. ex A. Rich.

syn.: *Abildgaardia pusilla* (Hochst. ex A. Rich.) Lye; *Scirpus hochstetteri* Boeckeler, nom. superfl.; *Stenophyllus capillaris* var. *striatinux* H. Pfeiff.

Tufted slender annual herb 3−40 cm tall ; stems few to many, crowded, angular, 0,2−0,5 mm ∅, glabrous to densely hairy; leaf sheaths straw-coloured to light brown, scabrid to hairy with long white hairs at mouth; blades to 40 cm long, 2−4 mm wide, scabrid or hairy; inflorescence simple or compound, lax with 1 sessile spikelet and 1−10 stalked spikelets and additional groups of sessile and stalked spikelets, to 40 spikelets in all, the whole to 5 cm long; spikelets ovoid or lanceolate, 2−5 × 1−2 mm.

Loudetia kagerensis grassland; marshes by lakes, etc.; shallow soil on rock outcrops with seepage; open *Acacia*, *Juniperus*, *Olea* woodland; moist grassy or marshy places; disturbed areas; sand banks; esobe; often on sandy soil; wooded marshes; soil pockets on rocks; wet places in savanna; lateritic flats; wet flushes; iron ore cliffs; 0−2300 m alt.

Comprises 2 subspp.: – subsp. **congolensis** (De Wild.) R. W. Haines [bas.: *B. congolensis* De Wild.; syn.: *Abildgaardia congolensis* (De Wild.) Lye; *A. pusilla* (Hochst. ex A. Rich.) Lye subsp. *congolensis* (De Wild.) Lye; *Bulbostylis polytricha* Cherm.; *B. holotricha* Peter, incl. fa. *depauperata* Peter] with stems and leaves densely short hairy, glumes 1,5−2 mm long; – subsp. **pusilla** [syn.: *Scirpus gracillimus* Boeckeler; *Fimbristylis parva* Ridl.; *Bulbostylis parva* (Ridl.) C. B. Clarke; *Abildgaardia parva* (Ridl.) Lye; *A. yalingensis* (Cherm.) Lye; *A. pusilla* subsp. *yalingensis* (Cherm.) Lye; *Bulbostylis yalingensis* Cherm.; *B. pusilla* subsp. *yalingensis* (Cherm.) R. W. Haines; *B. elegans* Cherm. 1931, nom. illeg., non Gardner 1846 (a synonym of *Ayapana amygdalina* (Lam.) R. M. King & H. Rob. (*Asteraceae*; cf. Taxon 47: 155−156, 1998); *B*. sp. nov. sensu Cheek & al., Pl. Mt Oku…: 77, 2000 (= *B. pusilla* subsp. *yalingensis* fide Onana & Cheek, Red Data Book … Cameroon: 364, 2011)], with stems and leaves not densely pubescent, glumes ± glabrous, c. 1 mm long. – subsp. **yalingensis** is sometimes recognised as a distinct taxon: glumes often short hairy, nutlets < 1 mm long and transversely ridged, surface with elongate cells (cf. Fl. Trop. E. Afr., Cyper.: 95, 2010; Fl. Gabon 44, Cyper.: 11, 2012).

The record of *B. pusilla* subsp. *pusilla* from Kordofan, El Abiad, Sudan, has not been confirmed by Darbyshire & al. (l.c.) – it is perhaps a misidentification.

The difference between *B. pusilla* and *B. densa* is not always very clear (fide Goetghebeur & Coudijzer, Bull. Jard. Bot. Natl. Belg. 55: 247, 1985): Especially overripe specimens of *B. pusilla* can be problematic, when their glumes are becoming ± patent before shedding. Some specimens of *B. pusilla* are approaching *B. multispiculata*.

B. quaternella (Ridl.) Goetgh.; Rendle, Cat. Welwitsch's Afr. pl. 2/1: 125, 1899 (in synonymy of *B. andongensis* var. *glabra* p.p.); Fl. Trop. Afr. 8: 443−444, 1902 (idem); Goetghebeur in Bull. Jard. Bot. Natl. Belg. 55: 223, 224 (fig.) 1985**.**

bas.: *Fimbristylis quaternella* Ridl.

Tufted perennial herb to c. 32 cm tall; stems glabrous (but minutely scabrous above), bases thickened and covered by enlarged hard, brownish-blackish, shining old leaf sheaths; leaves linear, short, glabrous; inflorescence umbel-like with 1−5 spikelets, branches *minutely scabrous*, *equal in length*.

Treeless lateritic flats; sunny wooded places.

The 4 syntypes of *Fimbristylis quaternella* Ridl. are: Welwitsch 6820, 6821, 6827 and 6830b.

(**B. rarissima** (Steud.) C. B. Clarke in Durand & Schinz, Consp. Fl. Afric. 5: 615 !, 1894; Fl. Trop. Afr. 8: 431, 1902.)

bas. : *Cyperus rarissimus* Steud.

Stems filiform, 5−8 cm long with 1 spikelet or 2 sessile spikelets together, glabrous; leaves nearly glabrous, sheaths not ciliate at mouth; spikelets 3 by c. 2 mm, 8−12-flowered; "resembling small examples of *B. barbata*" (Fl. Trop. Afr., l.c.). – Schimper s.n.

Not figuring in Fl. Eth. & Eritrea 6, 1997.

B. rhizomatosa (Lye) R. W. Haines; Fl. Trop. E. Afr., Cyper.: 72, 2010; Veltjen & al. in Phytotaxa 201: 222, 224, 2015. – Icon.: Nord. J. Bot. 1: 751, 1981 (under *Abildgaardia*); Haines & Lye, Sedges and rushes E. Afr.: 98, 1983.

bas.: *Abildgaardia rhizomatosa* Lye, non *Fimbristylis rhizomatosa* Pires de Lima 1924.

Perennial slender herb 20−60 cm tall with solitary stem or 2−3 well-spaced stems from a *horizontal rhizome* 2−5 cm long, 3−4 mm ∅, covered with blackish acuminate scales; stems triangular, glabrous to ± scabrid, 0,7−1,3 mm ∅; leaves from the lower 10 cm only; sheaths green to light reddish brown, minutely scabrid, with long (5−10 mm) white or reddish hairs at mouth; blades 1−18 cm long, 0,7−1,5 mm wide, margins densely scabrid; inflorescence umbel-like, 1−3 cm wide, 1−4 cm long, of 1 sessile and 2−4 stalked spikelets on 5−30 mm long peduncles; spikelets ovoid, 4−9 × 2−3 mm, 5−10-flowered.

Rather dry open *Brachystegia* woodland; 1200−1300 m alt.

When young, may be mistaken for a *Fimbristylis*.

B. rotundata (Kük.) R. W. Haines; Fl. Trop. E. Afr., Cyper.: 89, 2010. – Icon.: Feddes Repert. Spec. Nov. Regni Veg. Beih. 40/1, Anh.: pl. 89/1 a-c, 1937; Haines & Lye, Sedges and rushes E. Afr.: 110, 1983.

bas.: *Fimbristylis rotundata* Kük.

syn.: *Abildgaardia rotundata* (Kük.) Lye

Annual herb 10−30 cm tall; stems few to many, crowded, 0,4−0,6 mm ∅, angular, distinctly ribbed, scabrid and sometimes with scattered hairs; leaves filiform, 5−10 cm long, scabrid or slightly hairy; inflorescence of 1 sessile and 1−4 stalked spikelets, peduncles 0,2−2 cm long; spikelets reddish brown, ovoid, 4−7 × 2−4 mm.

Seasonally flooded grassland; open *Combretum-Terminalia* woodland; 1200−1350 m alt.

B. rumokensis Cherm. ex Goetgh., Bull. Jard. Bot. Natl. Belg. 54: 100, 101−102 (fig.), 1984; idem, ibid. 55: 245, 1985.

Annual tufted herb *10−25 cm* tall; stems ribbed, shortly hairy; leaves several, shortly hairy, with some long white hairs at mouth of sheaths; blade 7−17 cm long, 0,3 mm wide, sulcate and shortly hairy beneath; inflorescence umbel-like of 4−16 spikelets, branches 0−4, to 2 cm long, *glabrous*; spikelets ovate, 4−5,5 × 1,2−2 mm, acute, many-flowered.

Old lava fields; volcanic ashes; fissures in granitic rocks; 1450−1800 m alt.

A member of the *B. pusilla* complex.

B. scabricaulis Cherm.; Fl. Trop. Afr. 8: 434, 1902 (as *B. cardiocarpa* var. *holubii*); Bull. Jard. Bot. Natl. Belg. 55: 233, 1985; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 608, 1985; Burrows & Willis, Pl. Nyika Plateau, Malawi: 297, 2005; Lisowski, Fl. Rép. Guinée 1: 393, 2009; Fl. Trop. E. Afr., Cyp.: 103, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012, and Schmidt & al. in Phytotaxa 304: 48, 2017 (map); Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 121, 122, 1983; Berhaut, Fl. ill. Sénégal 9: 164, 1988; Strelitzia 2: 34, 1995 (nutlet); Fl. Gabon 44, Cyper.: 29, 2012.

syn.: *Fimbristylis collina* Ridl., non *Bulbostylis collina* (Kunth) C. B. Clarke 1894 (= *B. contexta*); *Abildgaardia collina* (Ridl.) Lye; *A. filamentosa* (Vahl) Lye var. *holubii* (C. B. Clarke) Lye; *Bulbostylis cardiocarpa* (Ridl.) C. B. Clarke var. *holubii* C. B. Clarke; *B. filamentosa* var. *scabricaulis* (Cherm.) Bodard; *B. filamentosa* auctt., non (Vahl) Kunth, e.g. sensu Andews, Fl. Pl. Sudan 3: 329, 1956.

Tufted perennial herb 15−50 cm tall with small clusters of bulb-like persistent woody stem-bases remaining attached to each other and new ones arising within the broadened and hardened lower leaf sheaths; stems 0,1−1 mm ∅, glabrous or with short adpressed hairs below and much denser ones above that render stems scabrid; leaf sheaths pale to dark reddish brown or golden brown with long flexuous hairs at mouth; blades filiform or channelled, to 25cm × 0,5 mm, shortly hairy; inflorescence of many sessile or very shortly stalked spikelets each 5−8 × 0,5−2 mm, forming dark brown to almost black heads.

Seasonal grassland with bracken and *Protea*; near swamps, swamp margins; soil in crevices on rocky slopes; open forests; savannas; dwarf *Brachystegia taxifolia* woodland; bowal; often ± pioneering on disturbed ground; 0−2100 m alt.

S. Africa, Botswana, Lesotho, Swaziland; Madagascar.

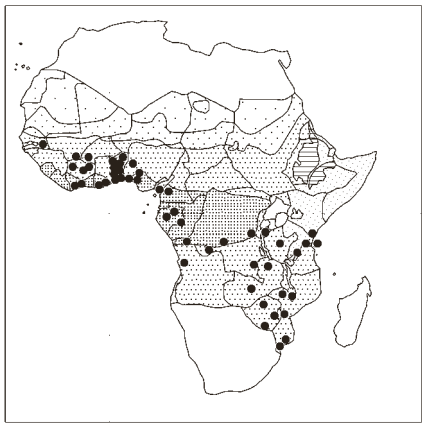
Very closely related to *B. filamentosa*.

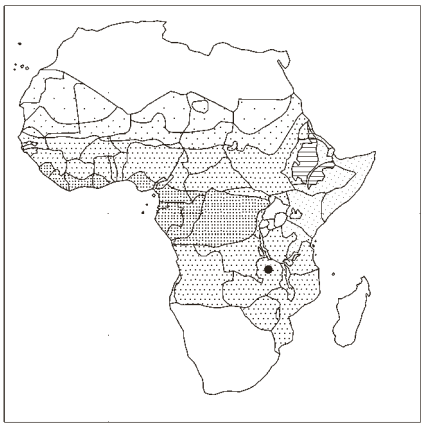
B. schimperiana (Hochst. ex A. Rich.) C. B. Clarke, excl. var. *leiolepis* Kük. (= *B. leiolepis*); Fl. Trop. E. Afr., Cyper.: 110−111, 2010. – Icon.: Peter, Repert. Spec. Nov. Regni Veg. Beih. 40/1, Anh.: pl. 88, 1936 (as *Fimbristylis humilis*); Haines & Lye, Sedges and rushes E. Afr..: 129, 1983; Fl. Eth. & Eritrea 6: 422, 1997.

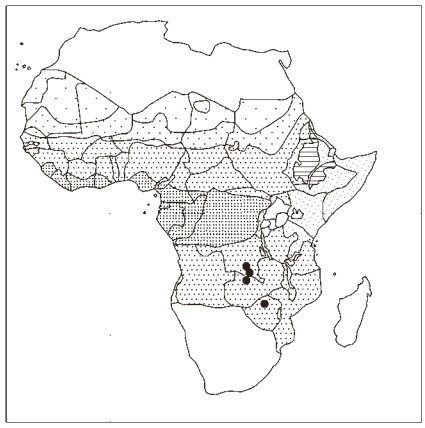
bas.: *Isolepis schimperiana* Hochst. ex A. Rich.

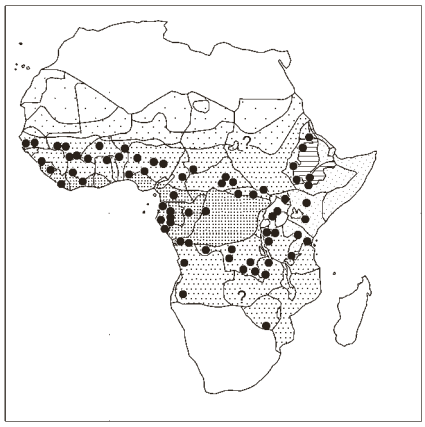
syn.: *Scirpus schimperianus* (Hochst. ex A. Rich.) Boeckeler; *Trichelostylis schimperiana* (Hochst. ex A. Rich.) Hochst. ex Boeckeler; *Fimbristylis schimperiana* (Hochst. ex A. Rich.) K. Schum. 1895, nom. illeg.; *F. schimperiana* Boeckeler 1858; *F. humilis* Peter; *Abildgaardia schimperiana* (Hochst. ex A. Rich.) Lye

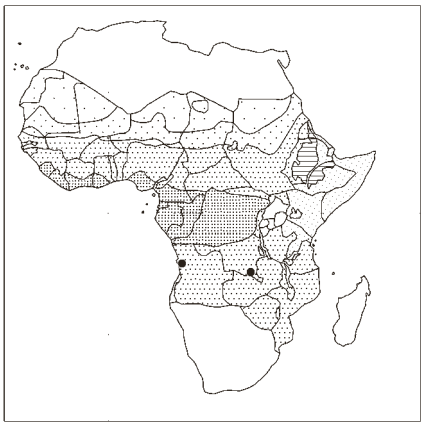
Tufted annual herb 5−25 cm tall; stems 0,4−1 mm ∅, ridged, glabrous; leaves to 8 cm long, 1 mm wide, glabrous or with scattered hairs and 2−5 mm long hairs at mouth of sheath; inflorescence usually a single head of dark spikelets but sometimes an additional stalked head, or with 1 sessile and 1−8 stalked spikelets, each *dark*, 4−7 mm long, 2−2,5 mm wide.

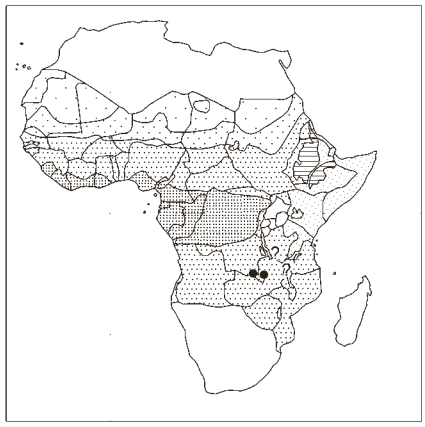

Bulbostylis pilosa

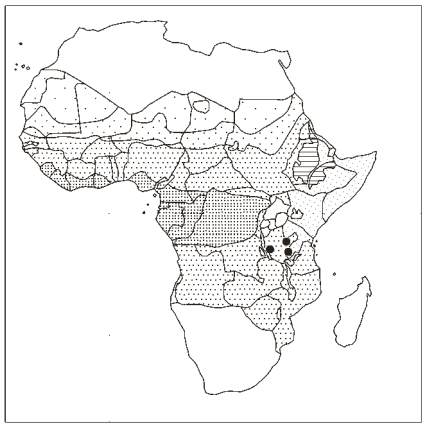

Bulbostylis pluricephala

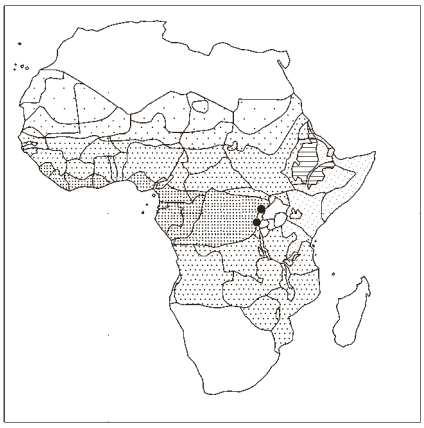

Bulbostylis pseudoperennis

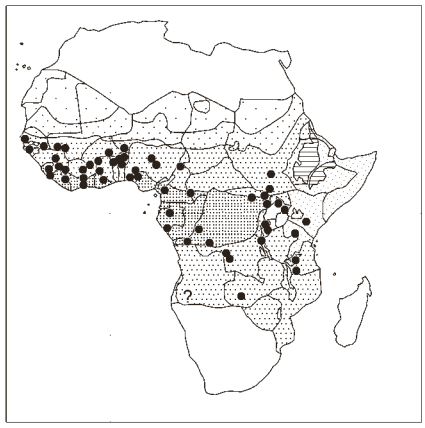

Bulbostylis pusilla

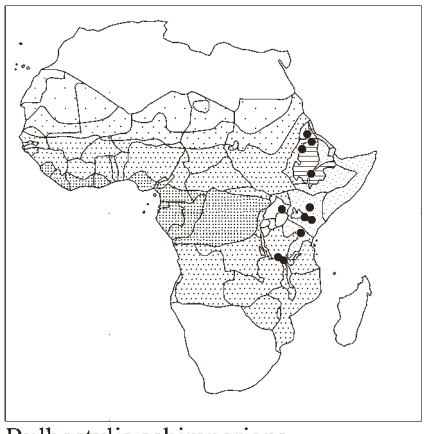

Bulbostylis quaternella

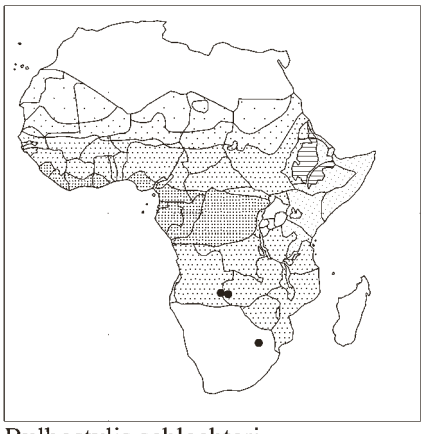

Bulbostylis rhizomatosa

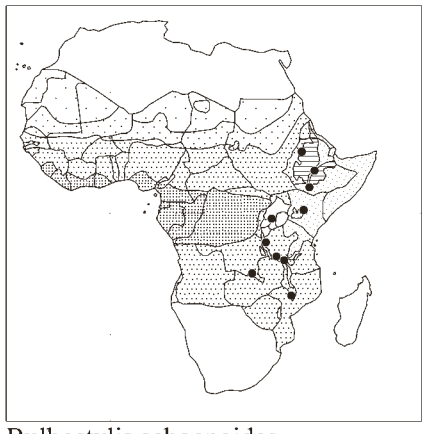

Bulbostylis rotundata


Bulbostylis rumokensis


Bulbostylis scabricaulis


Bulbostylis schimperiana


Bulbostylis schlechteri


Bulbostylis schoenoides

Grassland; *Acacia* woodland; *Tarchonanthus-Acacia* thicket; wet crevices in rockfaces; roadside ditches; weed in experimental plots; seasonally wet soil, often near seepage in grassland; 1200−2900 m alt.

B. schimperiana sensu Napper 1965 quoad descr. et distr. = *B. ugandensis*.

B. schlechteri C. B. Clarke; Figueiredo & Smith, Pl. Angola: 178, 2008; Veltjen & al. in Phytotaxa 201: 222, 224, 2015.

syn.: *Abildgaardia schlechteri* (C. B. Clarke) Lye

Perennial herb with thin creeping rhizome c. 3 mm ∅, 0,1−1 cm between plantlets; stems numerous, solitary, c. 20 cm tall, conspicuously striate (11−14 grooves), almost leafless; tip of leaf sheath 1−2 cm long, barely leaf like, to absence of blade, with few to no hairs at mouth; inflorescence of 1 terminal spikelet, chestnut-red, dense, ovoid, 8 mm long; glumes c. 3 mm long, (dark) reddish brown, pubescent, margins filamentous-pilose.

Ecology not reported.

S. Africa (Transvaal).

B. schoenoides (Kunth) C. B. Clarke; Bull. Jard. Bot. Natl. Belg. 55: 226−227, 1985 (as *B. cinnamomea*); Figueiredo & Smith, Pl. Angola: 178, 2008 (erroneous ?); Fl. Trop. E. Afr., Cyper.: 76−77, 2010. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 100, 1983; Strelitzia 2: 34, 1995 (nutlet); Fl. Eth. & Eritrea 6: 415, 1997; Malaisse & al., Copper-cobalt fl. Upper Katanga…: 322, 2016 (as *B. cinnamomea*).

bas.: *Isolepis schoenoides* Kunth

syn.: *Fimbristylis schoenoides* (Kunth) K. Schum. 1895, nom. illeg., non (Retz.) Vahl 1805; *F. cinnamomea* (Boeckeler) K. Schum., incl. var. *longigluma* Kük.; *Scirpus cinnamomeus* Boeckeler; *Abildgaardia erratica* (Hook. f.) Lye subsp. *schoenoides* (Kunth) Lye; *Bulbostylis cinnamomea* (Boeckeler) C. B. Clarke; *Scirpus transvaalensis* Boeckeler ex C. B. Clarke, nom. inval.; *S. pretorianus* Boeckeler ex C. B. Clarke, 1894, nom. inval. – *Bulbostylis cinnamomea* (Boeckeler) C. B. Clarke [bas.: *Scirpus cinnamomeus* Boeckeler; syn.: *S. pretorianus* Boeckeler ex C. B. Clarke, nom. inval.; *S. transvaalensis* Boeckeler ex C. B. Clarke, nom. inval.; *Bulbostylis cinnamomea* var. *longigluma* Kük.] is treated as a synonym of *B. schoenoides* in Fl. Trop. E. Afr., Cyper.: 78, 2010, but maintained as a distinct species in the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. It was also maintained as distinct by Goetghebeur & Coudijzer (Bull. Jard. Bot. Natl. Belg. 55: 226−227, 1985) who, however, remarked that it is "doubtfully kept separate from *B. schoenoides*…, with blackish glumes, often smaller stems and a southern African distribution". – *B. schoenoides* forms a species complex.

Densely tufted perennial herb 10−50 cm tall; basal part with many blackened burnt-off old leaf bases; stems 0,5−0,8 mm ∅, glabrous; leaves 5−25 cm long, 0,5−2 mm wide, flat or slightly channelled, 3−5-ridged beneath, glabrous except for spiny margins; young *sheaths* pale brown to *wine red*, glabrous except for hairy mouth; inflorescence a compact head of 1−5 obtuse very dark spikelets, each 6−10 × 2−3 mm.

Swampy grassland; upland grassland with shrubs; riverine swamps; dembos; wet copper polluted soils; black clay soil; seasonally waterlogged areas; 1200−2350 m alt.

S. Africa, Lesotho, Swaziland; Madagascar, Mauritius.

Similar to *B. boeckeleriana*.

B. scleropus C. B. Clarke; Bull. Jard. Bot. Natl. Belg. 55: 225, 1985; S. Afric. J. Bot. 54: 566, 1988. – Icon.: Fries, Wiss. Erg. Schwed. Rhodesia-Kongo-Exp. 1911−1912: pl. 1/5, 1921 (as *B. grandibulbosa*); Raymond, Naturaliste Canad. 99: 28, 1972 (nutlet); Gordon-Gray, Cyper. Natal: 34, 1995 (nutlet).

syn.: *B. grandibulbosa* Kük.; *Scirpus scleropus* (C. B. Clarke) K. Schum.; *Abildgaardia scleropus* (C. B. Clarke) Lye

Densely tufted perennial herb; stems glabrous, 25−40 cm long, enclosed at base by 0,5 cm broad, harsh, chestnut-black, striate sheaths glabrous at top; leaves often 2/3 the length of stem, c. 0,5 mm wide, channelled, minutely scabrous on the edges; inflorescence head-like or reduced to a single spikelet; spikelets cylindric-lanceolate, 6−10 × 4 mm, chestnut-black.

Wet grassland; dembo; edges of lakes; often on superficially semi-dry sandy soil overlying lateritic bed; dry forest on burned soil; c. 2000 m alt.

S. Africa, Lesotho.

A variable plant; a member of the *B. schoenoides* complex.

B. scrobiculata (Lye) Lye – Icon.: Lidia 1: 39, 1986.

bas.: *Abildgaardia scrobiculata* Lye

Annual herb; leaves short; inflorescence lax, a compound umbel-like structure, with pedunculate spikelets in groups; glumes 1,4−1,6 mm long; nutlets minutely pitted (*scrobiculatus*; drawing in Stearn, Bot. Latin, under fig. "Types of surfaces and seeds"). From the brief Latin diagnosis and the drawing in Lidia 1: 39, 1986.

Sand pits on seasonally damp sand.

Only known from the type collected in 1962 (Robinson 5043).

B. somaliensis Lye – Icon.: Fl. Somalia 4: 110, 1995 (subsp. *somaliensis*); Edinb. J. Bot. 53: 224−226, 1996.

Tussocky annual herb; stems 5−25 cm tall, 0,3−0,6 mm ∅, angular, densely short-hairy; leaf sheaths pale to light reddish brown with green central part; blades 2−6 cm long, 0,2−0,5 mm wide, flat or inrolled, densely hairy on midrib and margins; inflorescence a lax umbel to 2 × 2 cm consisting of 1 sessile spikelet and 1−4 stalked ovate to lanceolate angular spikelets, each 4−7 × 2−2,5 mm, with acute tip, 10−15-flowered.

Sand over flat open limestone rocks; open grassland often on sand or shallow soils over rocks; sandy seasonally damp soil; 0−350 m alt.

Comprises 3 subspp.: – subsp. **somaliensis** with almost globose nutlets, in C Somalia, < 100 m alt.; – subsp. **confusa** Lye, with obovate-triangular nutlets in S Somalia; – subsp. **microcarpa** (Chiov.) Lye (bas.: *Fimbristylis cioniana* Savi var. *microcarpa* Chiov.) with prominent red basal leaf sheaths with long white hairs at mouth, nutlets obovate, in S Somalia.

B. sphaerocarpa (Boeckeler) C. B. Clarke ; Fl. Eth. & Eritrea 6 : 417, 1997 (without fig. !); Fl. Trop. E. Afr., Cyper.: 92−93, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon. : Haines & Lye, Sedges and rushes E. Afr.: 114−115, 1983. – Note: The figure cited in Fl. Trop. E. Afr., l.c., as of Fl. Eth. & Eritrea 6: 417, fig. 212: 40, 1997, represents *B.* (*hispidula* subsp.) *oligostachys* !

bas.: *Scirpus sphaerocarpus* Boeckeler

syn.: *S. nindensis* Ficalho & Hiern; *Fimbristylis sphaerocarpa* (Boeckeler) K. Schum.; *Abildgaardia sphaerocarpa* (Boeckeler) Lye

Annual herb forming tufts with many stems 3−10 cm tall; leaves filiform, 2−10 cm long, scabrid; inflorescence a terminal spikelet, with additional cleistogamous flowers at base of stem, which give rise to underground fruits; spikelet ovoid-ellipsoid, 3−8 × 1−1,5 mm, 5−10-flowered.

Rather bare soil in *Brachystegia* woodland; seasonally damp soil; 1000−2000 m alt.

B. squarrosa (Lye) Verdc.; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 108−109, 2010. – Icon.: Nord. J. Bot. 7: 40, 1987.

bas.: *Abildgaardia squarrosa* Lye

Very bright green annual herb 12−20 cm tall; stems 0,2−0,4 mm ∅, triangular, ridged, with scattered minute spine-like hairs; leaf sheaths light reddish brown, with 5−7 prominent veins with short spine-like teeth, with 1−2 mm long hairs at mouth; blades flat with incurved margins, 1−5 cm long, 0,2−0,3 mm wide, strongly dotted with dark reddish brown glands, veins and margins with dense scabrid hairs; inflorescence congested, 3−6 mm long, 4−10 mm wide, of 2−7 sessile erect or spreading linear-lanceolate spikelets each 3−6 × 1,2−1,5 mm.

Dense mixed bushland with *Boswellia*, *Commiphora*, *Lannea*, *Acacia*; c. 200 m alt.

Only known from the type collected in 1977.

B. striatella C. B. Clarke; Naczi & Ford, Sedges: Uses…: 68, 2008; Fl. Trop. E. Afr., Cyper.: 106−107, 2010. – Icon.: J. E. Africa Nat. Hist. Soc. 25 (110): fig. 2, 1965 sub nom. *Bulbostylis humilis* [sensu Napper, non (Kunth) C. B. Clarke]; Haines & Lye, Sedges and rushes E. Afr.: 125−126, 1983; Fl. Eth. & Eritrea 6: 422, 1997.

syn.: *Abildgaardia striatella* (C. B. Clarke) Lye; *Bulbostylis arenaria* sensu Gordon-Gray, Cyper. Natal: 29−30, 1995, p.p., non (Nees) Lindau; *B. humilis* sensu auctt., non (Kunth) C. B. Clarke (cf. above under *B. humilis*).

Tufted annual or short-lived perennial herb 12−25 cm tall, often forming dense cushions c. 5 cm tall; stems angular, 0,2−0,4 mm ∅, glabrous; leaf sheaths pale brown; blades 2−6 cm long, 0,3−0,8 mm wide, flat but appearing almost filiform, densely scabrid; inflorescence of 1 solitary terminal spikelet or 2−3 clustered spikelets on peduncles 1−12 cm long but often with additional sessile spikelets at plant base; normal spikelets 3−8 mm long, 2−4 mm wide, often with spreading glumes.

Rocky river slopes; sandy soil in rock crevices; *Pennisetum* grassland; roadsides; weed in grass plots; seasonally damp soil in disturbed grassland or among rocks; 1800−2800 m alt.

S. Africa, Botswana, Swaziland, Namibia.

As a weed: wool alien (cf. Naczi & Ford, l.c.).

B. tanzaniae (Lye) R. W. Haines; Bull. Jard. Bot. Natl. Belg. 55: 241, 1985; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 91−92, 2010. – Icon.: Nord. J. Bot. 1: 754, 1981 (under *Abildgaardia*); Haines & Lye, Sedges and rushes E. Afr.: 113, 1983.

bas.: *Abildgaardia tanzaniae* Lye

Annual herb growing in small tussocks, 5−25 cm tall, each with 1−10 stems 0,5−0,8 mm ∅, scabrid or shortly hairy at least above; leaves 5−10 mm long, < 0,5 mm wide, strongly scabrid on margins; inflorescence of 1 sessile ovate spikelet and few to several stalked spikelets or additional groups of sessile and stalked spikelets, each spikelet 5−9 × 2 mm; involucral bracts with long white hairs.

Seasonally wet grassland; often on sandy soil; also limestone and dry rocky areas; on shallow soil overlying outcropping rocks or laterite; beaches; copper contaminated soil; often weedy; 800−2000 m alt.

Specimens from central Africa are very similar to *B. abortiva*; further collections needed.

B. taylorii C. B. Clarke; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 89−90, 2010. – Icon.: Haines & Lye, Sedges and rushes E. Afr.: 110−111, 1983.

syn.: *Fimbristylis taylorii* K. Schum., nom. nud.; *Abildgaardia taylorii* (K. Schum.) Lye

Tufted annual herb 3−13 cm tall; stems 0,3−0,6 mm ∅, angular, almost glabrous; leaf blades 1−5 cm long, 0,4−0,8 mm wide, flat, margins scabrid; sheaths hairy, light brown and straw-coloured, mouth with longer hairs; inflorescence of 1 sessile spikelet and 1−3 stalked spikelets on 2−7 mm long peduncles; spikelets almost black, ovoid, 3−5 × 2−3 mm, apex obtuse.

Open *Brachystegia*, *Pterocarpus* woodland with rock outcrops; 400−1550 m alt.

The exact locality of the gathering W. E. Taylor s.n. is unclear (cited as Zanzibar; cf. Fl. Trop. E. Afr., l.c.).

(**B. thouarsii** (Roem. & Schult.) Lye ex Veldkamp & Verloove, Blumea 59: 10, 2014). – Figuring as *B. puberula* (Kunth) C. B. Clarke or (Poir.) C. B. Clarke in floras or other floristic treatises. – Simpson & Inglis in Kew Bull. 56: 261, 2001; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 110, 2010; Verloove & al. in Fl. Mediterr. 24: 199, 2014. – Icon.: Ravi & Mohanan, Common trop. & sub-trop. sedges and grasses: 16, 2002; Prasad & Singh, Sedges of Karnataka (India)… in J. Econ. Taxon. Bot., Add. Ser. 21: 54, 2002; Fl. China, Ill. 23: 294, 2012 (details).

bas.: *Scirpus thouarsii* Roem. & Schult.

syn.: *S. puberulus* Poir. 1805, non Michx. 1803; *Isolepis thouarsii* (Roem. & Schult.) Nees 1834, non *I. thuarsii* A. Dietr. 1803, nom. illeg.; *I. puberula* Kunth; *Bulbostylis puberula* (Kunth) C. B. Clarke, nom. illeg.; *Stenophyllus puberulus* (Kunth) Killip, nom. superfl. – Perhaps also *Fimbristylis puberula* Backh. ex Steenis, nom. nud.

Annual herb 10−35 cm tall; stems very slender, 0,4−0,5 mm ∅, puberulous or glabrous; leaves much shorter than stem, 0,3−0,5 mm wide, lower surface and margins puberulous, some of the leaves reduced to sheaths with mouth with long white hairs; inflorescence usually simple, often congested to a head-like inflorescence, rarely reduced to 1 spikelet, 1−1,5 cm wide, with 1 to few spikelets, these solitary, ovoid, 3−5 × 1,5−2 mm.

Sandy places at low altitudes, often near the sea. A common weed in paddy fields.

In Fl. Trop. Afr. 8: 439, 1902, the specimens cited from Cameroon, i.e. Mann 1360 partly and 2093 partly, figure under the name *B. puberula* Kunth. In Fl. W. Trop. Afr., ed. 2, 3/2: 318, 1972, the specimen Mann 2093 is cited under *B. densa* var. *densa*, whereas the specimens Mann 1360b and 2093b figure under *B. densa* var. *cameroonensis*. Cable & Cheek in their checklist "Plants of Mount Cameroon" (p. 153, 1998; *Cyperaceae* by Lye) follow Fl. W. Trop. Afr., l.c.

All specimens from tropical Africa (incl. coll. Smith fromZaire and Whyte from Malawi) are in need of revision.

The true *B. thouarsii* is known from an area from Madagascar and the Indian Ocean Island E-wards to SE China, W Malaysia (cf. Fl. China text, 23: 218−219, 2010).

Not mapped by us.

B. trabeculata Rendle ! (Cat. Welwitsch's Afric. Pl. 2/1: 126, 1899); C. B. Clarke in Fl. Trop. Afr. 8: 437, 1902; Archer & Craven, Cyper. Namibia: 19, 2004; Fl. Trop. E. Afr., Cyper.: 105, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 123−124, 1983; Clarke & Mannheimer, Cyper. Namibia: 61, 86 (map), 1999.

syn.: *Abildgaardia trabeculata* (Rendle !) Lye

Annual herb 3−10 cm tall; stems few to many, 0,2−0,3 mm ∅, angular, ridged, almost glabrous; leaf sheaths whitish to pale brown with long hairs at mouth; blades to 2 cm long, 0,3 mm wide, scabrid on margins and ribs; inflorescence a head 3−6 mm wide of 1−4 sessile spikelets, each 2−4 mm long, 1−1,5 mm wide.

Seasonal swamp on mud under *Acacia seyal*; gravelly soil; here and there on sandy sea-shore; lofty short-grassed mountain places; rather damp places on river banks; 1−660 m alt.

Namibia, Botswana (var. **trabeculata**).

Comprises 2 vars.: – var. **trabeculata** [syn.: *Fimbristylis barbata* sensu Ridley in Trans. Linn. Soc., Ser. 2, Bot. 2: 152, 1884, non (Rottb.) Benth.; *F. barbata* var. *subtristachya* sensu Ridley, l.c., non *Isolepis subtristachya* Boeckeler], in NW Kenya; known only from the type; – var. **microglumis** (Lye) R. W. Haines [bas.: *Abildgaardia trabeculata* (Rendle) Lye var. *microglumis* Lye], in Angola – Namibia – Botswana, with smaller glumes (1,2−1,5 mm long).

B. trullata Goetgh.; Bull. Jard. Bot. Natl. Belg. 55: 247−249 (fig.), 1985.

Annual delicate herb; stems 5−20 cm tall, clustered, erect, grooved, glabrous; leaves several; mouth of sheaths with several long white hairs; blades 1−4 cm long, 0,2 mm wide, bases grooved, scabrous; inflorescence umbel-like with 2−3 spikelets on peduncles to 2 cm long, glabrous, smooth; spikelets angular-ovate, 5−7 × 1,5−2 mm, acute, many-flowered.

On dry schistose soils and fine lateritic gravels; lateritic plateau periodically flooded.

Near *B. pusilla*.

B. ugandensis (Lye) R. W. Haines; Fl. Trop. E. Afr., Cyper.: 109, 2010. – Icon.: J. E. Africa Nat. Hist. Soc. 25 (110): fig. 16, 1965; Haines & Lye, Sedges & rushes E. Afr.: 127−128, 1983; Bull. Jard. Bot. Natl. Belg. 55: 254, 1985 (nutlet).

bas.: *Abildgaardia ugandensis* Lye

syn.: *Fimbristylis subumbellata* K. Schum.; *Bulbostylis subumbellata* (K. Schum.) Prain, non (Lye) R. W. Haines; *B. schimperiana* sensu Napper, J. E. Africa Nat. Hist. Soc. 25 (110): 4, 1965, quoad descript. et distr., non (A. Rich.) C. B. Clarke

Rather densely tufted annual or perennial herb 5−50 cm tall ; stems 0,3−0,5 mm ∅, glabrous save for some scattered spine-like hairs beneath the inflorescence; leaves 5−20 cm long, 0,3−0,7 mm wide, with short spine-like hairs on the ridges; hairs at mouth of sheaths to 1 cm long; inflorescence a compact *head of 3−10 sessile spikelets* each 4−8 mm long, 2−3 mm wide, obtuse.

Loudetia, *Andropogon*, *Eragrostis* grassland over laterite ironstone platforms; water-logged sandy soil, by rock pools; forest margins; savanna to wet grassland; 1100−2700 m alt.

B. vanderystii Cherm.; Bull. Jard. Bot. Natl. Belg. 55: 232, 1985; Fl. Trop. E. Afr., Cyper.: 86, 2010. – Icon.: Fl. Gabon 44, Cyper.: 29, 2012.

syn.: *Abildgaardia vanderystii* (Cherm.) Lye

Tufted herb 25−45 cm tall with horizontal, short, woody rhizome; stems 0,5−0,75 mm ∅, smooth, glabrous, striate; leaves: all burnt off ± 5 cm above top of roots in cited specimens (F.T.E.A., l.c.); described as 10−20 cm long, 0,25 mm wide, channelled, slightly scabrid, glabrous; sheaths red-brown, mouth densely long-pilose; inflorescence a head 7−10 cm wide of 6−10 spikelets each lanceolate, 6−8 × 2−2,5 mm, acute.

Grassland, sometimes wet; sand overlying rock; burnt savanna; savanna-forest border; 400−1710 m alt.

Goetghebeur & Coudijzer in Bull. Jard. Bot. Natl. Belg. 55, l.c., did not find the holotype (Vanderyst 16050) at BR nor at P, and proposed a neotype: Vanderyst 28319b at BR. However, Verdcourt (Fl. Trop. E. Afr., l.c.) indicates Vanderyst 16050 as present at BR, thus not lost.

B. viridecarinata (De Wild.) Goetgh.; Fl. W. Trop. Afr., ed. 2, 3/2: 325, 1972 (as *Fimbristylis tisserantii*); Bull. Jard. Bot. Natl. Belg. 55: 222, 1985; Fl. Trop. E. Afr., Cyper.: 86, 2010 (as *Bulbostylis lyei*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012.

bas.: *Fimbristylis viridecarinata* De Wild.

syn.: *F. tisserantii* Cherm., non *Cyperus tisserantii* Cherm. (= *Cyperus niveus* var. *tisserantii*); *Bulbostylis tisserantii* (Cherm.) Lye 1971, nom. illeg., non Cherm. 1931, nom. nov. for *B. fasciculata* Cherm. 1931, nec Uittien 1925 (Guyanas); *B. lyei* Verdc. 2010, nom. nov.; *Fimbristylis exilis* (Kunth) Roem. & Schult. var. *rufescens* Cherm.; *F. ruziziensis* Germain in sched.

Annual tufted herb 30−90 cm tall; stem base ascending, rooting and branching from the lower nodes, or perennial with centrifugal growth, stem base with red-brown cataphylls; stems 0,4−0,7 mm ∅, ridged, scabrid to shortly hairy or spreading hairy; leaf sheaths with a few long white hairs 5−10 mm long at mouth; blades flat, 10−25 cm long, 0,5−1,5 mm wide, scabrid to densely shortly hairy; inflorescence simple or compound umbel-like, with 1−3 sessile spikelets and with 1−8 rays each with a solitary spikelet or a group of 1 sessile and 1−3 stalked spikelets; spikelets ovoid, 8−15 × 2,5−4 mm.

Miombo; humid grassland, often overgrazed; marsh border; often on sandy soils; abandoned shallow flooded cultivations; 650−1750 m alt.

B. lyei Verdc. subsp. ? in Fl. Trop. E. Afr., Cyper.: 87, 2010, from S Tanzania (Kilwa Distr., T8), with syn.: *B. contexta* sensu Vollesen in Opera Bot. 59: 92, 1980, non (Nees) Bodard, is in need of further study.

B. wombaliensis (De Wild.) R. W. Haines; Bull. Jard. Bot. Natl. Belg. 55: 220, 1985; Fl. Trop. E. Afr., Cyper.: 87−88, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 109, 1983; Bull. Jard. Bot. Natl. Belg. 54: 103, 1984 (nutlet).

bas.: *Fimbristylis wombaliensis* De Wild.

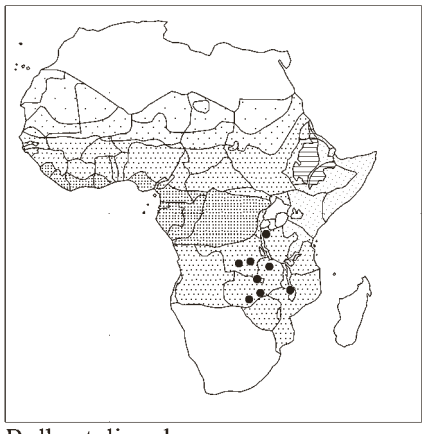
syn.: *Abildgaardia wombaliensis* (De Wild.) Lye

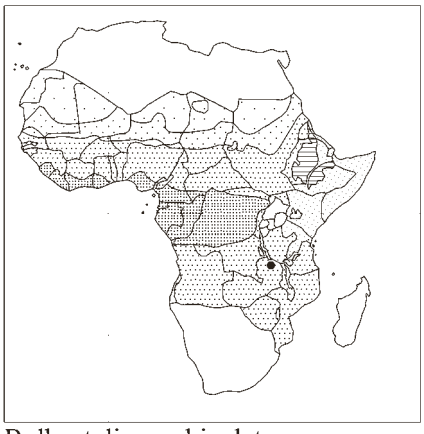
Annual herb with crowded stems 5−30 cm tall from a slender erect rhizome 0,5−1 mm ∅ with remains of scales; stems 0,1−0,5 mm ∅, riged, glabrous; leaf sheaths glabrous but margins of mouth with hairs 0,5−2 mm long; blades mostly only 3−5 mm long, 0,1−0,3 mm wide, margins scabrid; inflorescence a simple or sometimes subcompound umbel-like head; spikelets narrow, 5−8 mm long, acute.

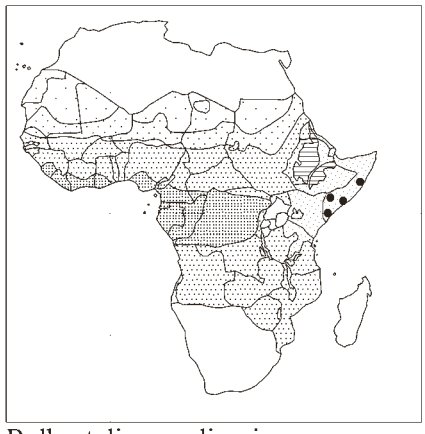
Flat grassy patches on rock outcrop; poor sandy raised grazed beaches; swamp; 1100−1200 m alt.

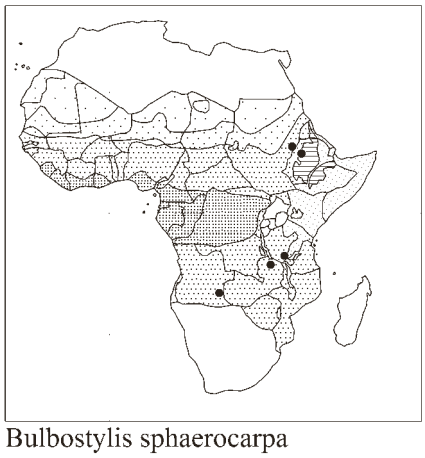
SYNONYMS:

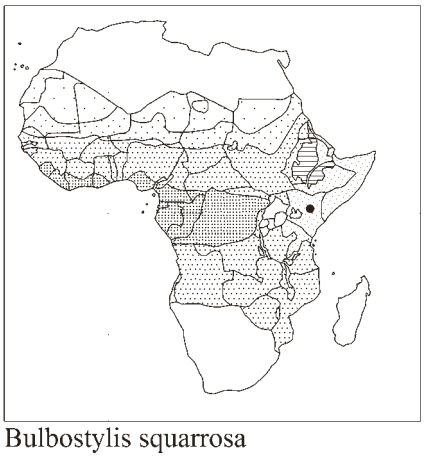
Bulbostylis andongensis (Ridl.) C. B. Clarke var. *glabra* Ridl. in Rendle, Cat. fl. pl. Welwitsch, excl. syn. *Fimbristylis quaternella* = **Bulbostylis andongensis**

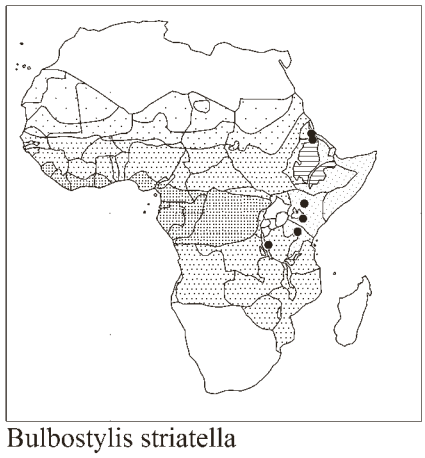

Bulbostylis scleropus

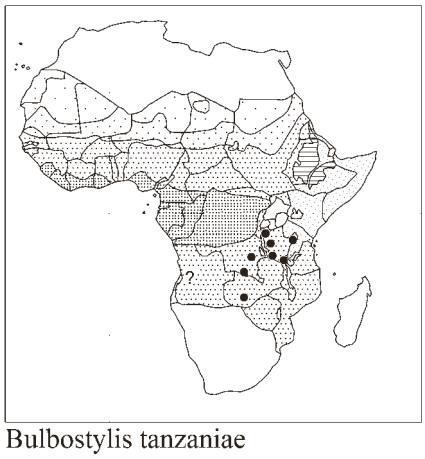

Bulbostylis scrobiculata

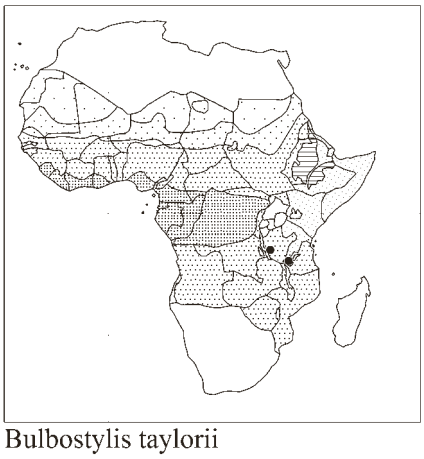

Bulbostylis somaliensis

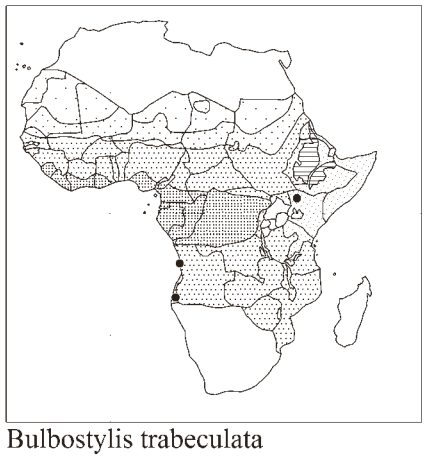

Bulbostylis sphaerocarpa

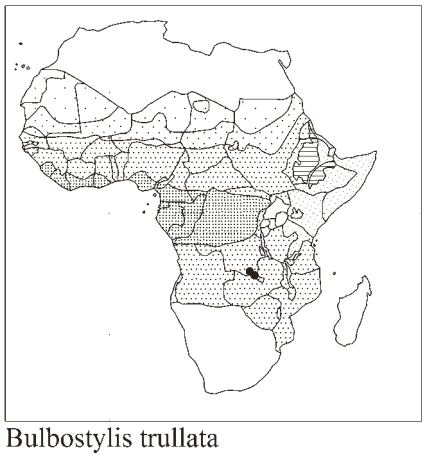

Bulbostylis squarrosa

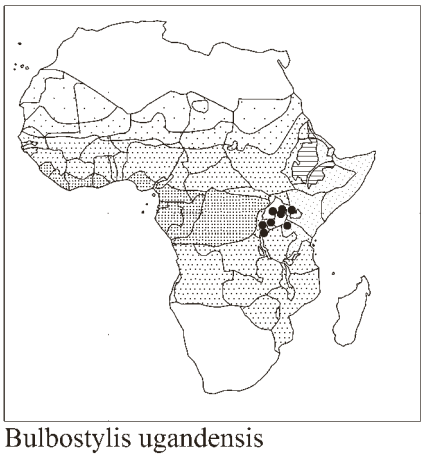

Bulbostylis striatella

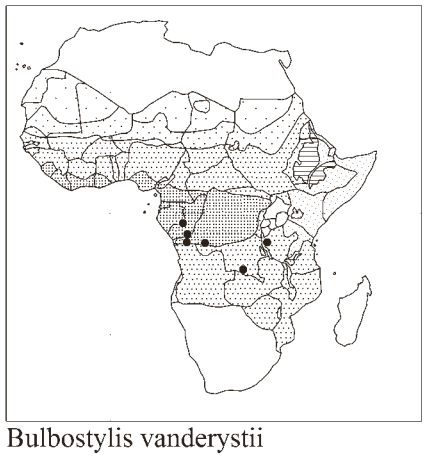

Bulbostylis tanzaniae


Bulbostylis taylorii


Bulbostylis trabeculata


Bulbostylis trullata


Bulbostylis ugandensis


Bulbostylis vanderystii

angolensis (C. B. Clarke) Larridon & Roalson = **Nemum angolense**
aphyllanthoides (Welw. ex Ridl.) C. B. Clarke = **Bulbostylis pilosa**
arenaria sensu Gordon-Gray 1995, p.p., non (Nees) Lindau = **B. striatella**
atracuminata (Larridon, Reynders & Goetgh.) Larridon & Roalson = **Nemum atracuminatum**
breviculmis (Kunth) C. B. Clarke = **Bulbostylis humilis**
brunneoacuminata Larridon & Roalson, nom. nov. Phytotaxa 418: 113, 2019, nom. inval.; ibid. 420: 300, 2019 = **Nemum megastachyum**
bulbostyloides (S. S. Hooper) Larridon & Roalson = **Nemum bulbostyloides**
burkei C. B. Clarke = **Bulbostylis contexta**
caespitosa Peter = **B. oritrephes**
camporum K. Schum. ex C. B. Clarke = **B. abortiva**
capillaris (L.) C. B. Clarke var. *abortiva* (Steud.) H. Pfeiff. = **B. abortiva**
capillaris var. *trifida* (Nees) C. B. Clarke = **B. densa**
cardiocarpa C. B. Clarke 1894 = **B. filamentosa**
cardiocarpa var. *holubii* C. B. Clarke = **B. scabricaulis**
cinnamomea (Boeckeler) C. B. Clarke, incl. var. *longigluma* Kük. = **B. schoenoides**
cinnamomea sensu Fl. Cap. 1898 = **B. boeckeleriana** var. **boeckeleriana**
claessensii De Wild. = **B. abortiva**
clarkeana sensu Adam 1962, non Hutch. ex Bodard = **B. bodardii**
coleotricha (A. Rich.) C. B. Clarke var. *lanifera* (Boeckeler) C. B. Clarke, p.p. quoad specim. ex Africa occid. = **B. lanifera**
collina (Kunth) C. B. Clarke 1894, p.p. = **B. contexta**
collina sensu Fl. Trop. Afr., 1902 = **B. boeckeleriana** var. **boeckeleriana**
congolensis De Wild. = **B. pusilla** subsp. **congolensis**
cyrtathera Cherm. = **B. fimbristyloides**
elegans Cherm. 1931, non Gardner 1846 = **B. pusilla** subsp. **pusilla**
equitans (Kük.) Raymond = **Nemum equitans**
exilis (Kunth) Lye = **Bulbostylis hispidula** subsp. **hispidula**
fasciculata Cherm. 1931, non Uittien 1925 (Guyana) = **B. viridecarinata**
filamentosa (Vahl) C. B. Clarke var. ? *barbata* C. B. Clarke 1894 = **B. barbata** subsp. **barbata**
filamentosa var. *metralis* (Cherm.) R. W. Haines = **B. filamentosa**
filamentosa var. *scabricaulis* (Cherm.) Bodard = **B. scabricaulis**
filamentosa (Vahl) Kunth = **B. scabricaulis**
filamentosa sensu auctt. = **B. scabricaulis**
filiformis C. B. Clarke = **B. hispidula** subsp. **filiformis**
flexuosa (Ridl.) Goetgh. = **B. abortiva**
geniculata (L.) Steven = **Eleocharis geniculata**
grandibulbosa Kük. = **Bulbostylis scleropus**
heterostachya sensu Bodard 1963, non Cherm. = **B. glaberrima**
hirta (Thunb.) Svenson = **Fimbristylis squarrosa** var. **squarrosa**
holotricha Peter, incl. fa. *depauperata* Peter = **Bulbostylis pusilla** subsp. **congolensis**
humilis sensu auctt., i.a. Napper, non (Kunth) C. B. Clarke = **B. striatella**
junciformis var. *filamentosa* (Vahl) H. Pfeiff. = **B. filamentosa**
kirkii C. B. Clarke = **B. contexta**
lanifera (Boeckeler) Kük. var. *glabra* (Ridl.) Kük. = **B. andongensis**
longispicata (Lye) Lye = **B. hispidula** subsp. **longispicata**
lyei Verdc. = **B. viridecarinata**
megastachyum (Cherm.) Larridon & Roalson = **Nemum megastachyum**
metralis Cherm. = **Bulbostylis filamentosa**
miegei Bodard = **B. coleotricha** var **miegei**
mozambica Raymond = **B. parvinux**
neocapitata Larridon & Roalson = **Nemum capitatum**
oritrephes (Ridl.) C. B. Clarke var. *major* Meneses = **Bulbostylis oritrephes** subsp. **oritrephes**
oritrephes sensu Fl. W. Trop. Afr., ed. 2, 1972, p.p. = **B. oritrephes**
parva (Ridl.) C. B. Clarke = **B. pusilla** subsp. **pusilla**
polytricha Cherm. = **B. pusilla** subsp. **congolensis**
puberula (Kunth) C. B. Clarke or (Poir.) C. B. Clarke = **B. thouarsii**
puberula var. *cameroonensis* C. B. Clarke 1895, nom. nud. = **B. densa** var. **cameroonensis**
puberula var. *gracilis* C. E. C. Fisch. = **B. thouarsii**
puberula var. *viguieri* sensu Bodard 1963 = **B. cardiocarpoides**
puberula sensu Robyns & Tournay 1955 = **B. cardiocarpoides**
pusilla (Hochst. ex A. Rich.) C. B. Clarke subsp. *yalingensis* (Cherm.) R. W. Haines = **B. pusilla** subsp. **pusilla**
raynalii (S. S. Hooper ex Larridon & Goetgh.) Larridon & Roalson = **Nemum raynalii**
rehmanni C. B. Clarke = **Bulbostylis filamentosa**
schimperiana (Hochst. ex A. Rich.) C. B. Clarke var. *leiolepis* Kük. = **B. leiolepis**
schimperiana sensu Napper 1965 = **B. ugandensis**
schoenoides sensu Vollesen 1980, non (Kunth) C. B. Clarke = **B. boeckeleriana** var. **boeckeleriana**
seretii De Wild. = **B. coleotricha** var. **coleotricha**
setifolia (A. Rich.) Bodard 1963, non Beetle 1949 = **B. atrosanguinea**
spadicea (Lam.) Larridon & Roalson = **Nemum spadiceum**
spadicea subsp. *spadolensis* (Larridon & Goetgh.) Larridon & Roalson = **N. spadiceum** subsp. **spadolense**
sp. nov. sensu Cheek & al., Pl. Mt Oku…: 77, 2000 = **Bulbostylis pusilla** subsp. **pusilla** ("subsp. *yalingensis*")
stricta Turrill = **B. megastachys**
subumbellata (Lye) R. W. Haines = **B. hensii**
subumbellata (K. Schum.) Prain = **B. ugandensis**
tenuisssima Nakai 1952 = **B. densa**
tisserantii Cherm. 1931 = **B. viridecarinata**
tisserantii (Cherm.) Lye 1971 = **B. viridecarinata**
togoensis Cherm. = **B. lanifera**
transiens (K. Schum.) C. B. Clarke = **B. boeckeleriana** var. **boeckeleriana**
trichobasis (Baker) C. B. Clarke var. *caespitosa* (Peter) Kük., var. *leptocaulis* C. B. Clarke and var. **uniseriata** C. B. Clarke = **B. oritrephes**
trifida (Nees) Nelmes, incl. var. *biegensis* Cherm. = **B. densa** subsp. **afromontana**
vaginosa Kük. = **B. boeckeleriana** var. **boeckeleriana**
willdenowii C. B. Clarke = **B. barbata** subsp. **barbata**
wittei Cherm. = **B. laniceps**

yalingensis Cherm. = **B. pusilla** subsp. **pusilla**
zambesica (K. Schum.) C. B. Clarke = **B. macra**
zambesica var. *occidentalis* Bodard = **B. bodardii**
zeyheri (Boeckeler) C. B. Clarke = **B. contexta**
zeyheri sensu Fl. Trop. Afr. 8: 437, 1902, p.p., excl. cited specimens = **B. contexta**
zeyheri sensu Fl. Trop. Afr. 8, l.c., p.p. = **B. boeckeleriana** var. **boeckeleriana**

CAREX / *37 + 4* ?

Carex L. (1753). Generic synonyms are listed in the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. However, for our area *Schoenoxiphium* Nees (1832) is recognized as a segregate genus by us (See below).

"Carex L. is one of the largest angiosperm genera. [It] is also well known for its difficult taxonomy and as a result it has undergone many rearrangements in recent years to reflect our greater understanding of evolutionary relationships within the genus… Despite more than 15 yr of phylogentic investigation…, the phylogeny is still imperfectly known" (Jiménez-Mejías & al. in Syst. Bot. 41: 500, 2016). This study was based on 50, 23 % of the species accepted. "The first outcome … was the nomenclatural revision of *Carex* to formally include all satellite genera in the tribe Cariceae (*Cymophyllus, Kobresia, Schoenoxiphium,* and *Uncinia*) within a more broadly circumscribed *Carex*" (o.c.: 501). "The former genus *Schoenoxiphium*, a monophyletic group nested in the *Schoenoxiphium* clade, has about 20 species, with its center of diversity in the southeastern parts of Africa…" (Villaverde & al. in Int. J. Plant Sci. 178: 321, 2017).

"With about 2,150 species, *Carex* is among the largest genera of vascular plants… It has an almost worldwide distribution and is absent only in the Antarctic and some desert areas… [it] is comparatively species-poor in the lowland tropics" (Hoffmann & Gebauer in Syst. Bot. 41: 552, 2016). "It has a centre of diversification in the cold and temperate areas of the northern hemisphere, where it is the most diversified angiosperm genus" (Escudero & al. in Ann. Bot. 112: 515, 2013).

Carex is poorly represented in Africa compared with other parts or countries in the world: tropical Africa with 34 species, 24 in Madagascar, 19 in S. Africa. Some figures: 222 species occur in Europe (J. Koopman, Carex Europaea: The genus Carex… in Europe, 1: 7, 2011); 527 in China (Nord. J. Bot. 29: 670, 2011); 480 in N. America (Flora N. America 23: 254, 2002); c. 230 in India (Rheedea 20: 29, 2010). A distribution map is given by Gehrke 2011: 52. "Results of the molecular phylogenetic study indicate that there have been several dispersal events of *Carex* from Eurasia into Africa (Gehrke & Linder in Achoundong, XVIIIth AETFAT Congress 26 February – 2 March 2007, Yaoundé, Cameroon, Abstracts: 77, 2007).

"*Carex* L. … have been considered taxonomically difficult. This perception is a product of the great diversity, coupled with the characteristics of reduced reproductive organs, lack of distinctive coloration and ability to hybridize. Consequently, non-floral characters, such as the morphology and anatomy of the rhizomes, roots, culms and leaves, have been utilized as an aid in taxonomic delimitation… The use of macromorphological characters… can be problematic as they may exhibit phenotypic plasticity related to habitat type." "Some characters were found to exhibit high levels of intraspecific variation, whereas other characters exhibit high levels of consistency in a species, including the shape of the leaf section, the density of papillae and the size of epidermal

cells. Caution must be applied when choosing leaf anatomy to delimit taxa…" (Bugg & al. in Bot. J. Linn. Soc. 172: 371, 2013).

"*Carex* species are perennial, tufted, rhizomatous, stoloniferous or tussock-forming, mostly windpollinated, monoecious (rarely) dioecious herbs… [with] terminal inflorescences composed of one or several spike(s) of spikelets… The flowers are always unisexual. The staminate florets consist of only one to three stamens… The pistillate 'flowers' are … reduced single-flowered spikelets… that are enclosed by a bract with fused margins that opens only at, or near to, the apex (called a utricle or perigynium). The inflorescence axis extends into the utricle and is referred to as the rachilla [mostly reduced]" (Gehrke in Bot. J. Linn. Soc. 166: 51, 2011). As to the use of the terms perigynium and utricle we refer to Jiménes-Mejías & al. in Syst. Bot. 41: 519−528, 2016. " On the basis of inflorescence structure, Kükenthal (1909) inferred *Schoenoxiphium* to be the most primitive member of Cariceae… He regarded *Carex* as the most evolutionary derived genus of the group…" (Gehrke, o.c.: 53). A comparative study of the inflorescence is due to Molina & al. (Syst. Bot. 37: 365−381, 2012), who present detailed illustrations with related terminology (pp. 367, 369). *Schoenoxiphium* is also included in this study.

"*Carex* spp. are commonly associated with moist to wet habitats in which they are often dominant or co-dominant. However, the genus is also common in drier habitats, such as montane and alpine grasslands, montane rocky habitats and forest understorey…" (Gehrke, o.c.: 53).

Rust fungi of the genus *Puccinia* and the form genus *Uredo* have been observed by Gjaerum (Lidia 4/5: 133−137, 1999), who recorded a low frequency in African *Carex* spp.

BUGG, C. & al. (2013). Consistent and variable leaf anatomical characters in Carex (Cyperaceae). *Bot. J. Linn. Soc.* 172: 371−384.

EGOROVA, T. V. (1999). *The sedges (Carex L.) of Russia and adjacent states (within the limits of the former USSR*). Russian Academy of Sciences, Komarov Botanical Institute, St.-Petersburg & St. Louis [with maps on pp. 421, 650].

ESCUDERO, M. & M. LUCEÑO (2011). Taxonomic revision of the tropical African group of Carex subsect. Elatae (sect. Spirostachyae, Cyperaceae). *Anal. Jard. Bot. Madrid* 68: 225−247.

ESCUDERO, M. & al. (2009). Significance of ecological vicariance and long-distance dispersal in the diversification of Carex sect. Spirostachyae (Cyperaceae). *Amer. J. Bot.* 96: 2100−2114.

FORD, B. A. & al. (2012). Phylogeny of Carex subg. Vignea (Cyperaceae) based on amplified fragment length polymorphism and nrDNA data. *Syst. Bot.* 37: 913−925.

GEBAUER, S. & al. (2015). Molecular phylogeny of the species-rich Carex sect. Racemosae (Cyperaceae) based on four nuclear and chloroplast markers. *Syst. Bot.* 40: 433−447.

GEHRKE, B. (2011). Synopsis of Carex (Cyperaceae) from sub-Saharan Africa and Madagascar. *Bot. J. Linn. Soc.* 166: 51−99.

GLOBAL CAREX GROUP (2015). Making Carex monophyletic (Cyperaceae, tribe Cariceae): a new broader circumscription. *Bot. J. Linn. Soc.* 179: 1−42.

GLOBAL CAREX GROUP (2016). Megaphylogenetic specimen-level approaches to the Carex (Cyperaceae) phylogeny using ITS, ETS, and matK sequences: implications for classification. *Syst. Bot.* 41: 500−518.

HEATH, P.V. (1994). Commentary on the proposal to conserve Carex Linné. *Calyx* 5/1: 15−16.

HIPP, A.L. & al. (2016). Proceeding introduction: phylogeny and ecological diversification in Carex. *Syst. Bot.* 41: 498−499

HOFFMANN, M. H. (2019). To the roots of Carex: Unexpected anatomical and functional diversity. *Syst. Bot*. 44: 26−31.

HOFFMANN, M. H. & S. GEBAUER (2016). Quantitative morphological and molecular divergence in replicated and parallel radiations in Carex (Cyperaceae) using symbolic data analysis. *Syst. Bot.* 41: 552−557.

JIMÉNEZ-MEJÍAS, P. (2017). Keep cool and Carex on. *Plant Press, N. S.* 20/4: 1, 16−19.

JIMÉNEZ-MEJÍAS, P. & al. (2016). Clarification of the use of the terms perigynium and utricle in Carex L. (Cyperaceae). *Syst. Bot.* 41: 519−528.

MARTÍN-BRAVO, S. & al. (2013). Molecular and morphological evidence for a new species from South Africa: Carex rainbowii (Cyperaceae). *S. Afric. J. Bot.* 87: 85−91.

MÍGUEZ, M. & al. (2017). Carex sect. Rhynchocystis (Cyperaceae): a Miocene subtropical relict in the Western Palaearctic showing a dispersal-derived Rand flora pattern. *J. Biogeogr*. 44: 2211−2224.

MÍGUEZ, M. & al. (2018). Reconciling morphology and phylogeny allows an integrative taxonomic revision of the giant sedges of Carex section Rhynchocystis (Cyperaceae). *Bot. J. Linn. Soc.* 188: 34−58.

MOLINA, A. & al. (2012). A comparative study of the inflorescence in the genus Carex (Cyperaceae). *Syst. Bot.* 37: 365−381.

MOLINA, A. & al. (2015). Molecular and morphological perspectives on the circumscription of Carex section Heleoglochin (Cyperaceae). *Plant Syst. Evol.* 301: 2419−2439.

STARR, J. R. & al. (2004). Phylogeny of the unispicate taxa in Cyperaceae tribe Cariceae I: generic relationships and evolutionary scenarios. *Syst. Bot.* 29: 528−544.

VILLAVERDE, T. & al. (2017). New insights into the systematics of the Schoenoxiphium clade (Carex, Cyperaceae). *Int. J. Plant Sci.* 178: 320−329.

WATERWAY, M. J. & al. (2009). Phylogeny, species richness, and ecological specialization in Cyperaceae tribe Cariceae. *Bot. Rev.* 75: 138−159.

As noted above our compilation treats *Carex* in its traditional sense, such as found in the main African floras and works, e.g., Gordon-Gray, Cyperaceae in Natal (Strelitzia 2): 36−43, 1995; Flora of Ethiopia & Eritrea 6: 501−511, 1997; Haines & Lye, Sedges & rushes E. Africa: 368−384, 1983; Goetghebeur in Kubitzki, Families & genera of vascular plants 4: 187−188, 1998; Cook, Aquatic & wetland plants of southern Africa: 84−86, 2004; Flora of Tropical East Africa, Cyperaceae: 421−448, 2010 (by B. Verdcourt); Gehrke, Synopsis of Carex… in Bot. J. Linn. Soc. 166: 51−99, 2011; Browning & Goetghebeur, Sedge (Cyperaceae) genera of Africa and Madagascar: 35, 2017. *Schoenoxiphium* is thus treated apart as a segregate genus, although we may admit that the morphological differences between *Carex* and that genus are rather insignificant. Even the Global Carex Group (2016: 505) including the segregate genera *Cymophyllus, Kobresia, Uncinia,* and *Schoenoxiphium* in *Carex*, admits that "caution is still recommended in interpreting our results".

Referring to the tropical African *Carex* one has the choice between the lumper (Verdcourt, Fl. Trop. E. Afr., Cyper., 2010) and the splitter (Gehrke, 2011). In our compilation we have chosen the former for the following reasons.

We have noted certain inconsistences in Gehrke's monograph. An example: under *C. leptosaccus* C. B. Clarke (p. 62) she treats *C. erythrorrhiza* Boeckeler var. *scabrida* Kük. (1925) as a synonym, designating *R. E. Fries & Th. C. Fries 677*, BR, as **lectotype** (isolectotypes: K, UPS). However, the same *Fries & Fries* gathering (i.e. *677*) also figures under *C. lycurus* K. Schum. ex Engl. [synonym *C. lycurus* K. Schum. ex Engl. subsp. *scabrida* (Kük.) Verdc., here cited as synonym, with **holotype**: UPS, **isotype**: K].

On the other hand, the morphological characters used to separate the above-mentioned species are disputable.

There are similar examples in other groups of the genus: *C. brassii* Nelmes – *C. tricholepis* Nelmes, (p. 85), or *C. congolensis* Turrill – *C. drakensbergensis* C. B. Clarke (p. 74−75), or *C. elgonensis* Nelmes – *C. mannii* E. A. Bruce – *C. petitiana* A. Rich. – *C. preussii* K. Schum. – *C. simensis* Hochst. ex A. Rich. – *C. ninagongensis* (Kük.) Nelmes ex Robyns & Tournay – *C. vallis-rosetto* K. Schum. (p. 76−82), and *C. koestlinii* Hochst. ex Steud. – *C. leptosaccus* C. B. Clarke – *C. erythrorrhiza* Boeckeler (p. 62−64).

Gehrke (o.c.: 57) herself summarises the situation: "Species identification can be problematic in *Carex*. Often only well-developed material with full-sized and mature utricles can be identified with confidence, especially for those unfamiliar with the group. Problems arise mainly because of morphological variation throughout the ontogeny of an inflorescence, resulting in differences in the appearance of the spikelet at anthesis and at fruiting. In addition, differences can be observed within one inflorescence or even between terminal and distal parts within a single partial inflorescence spike…" "A more thorough taxonomic investigation is necessary".

Carex acutiformis Ehrh. 1789, non Brot. 1804; Simpson & Inglis in Kew Bull. 56: 262, 2001; Naczi & Ford, Sedges: Uses…: 68, 2008; Fl. Trop. E. Afr., Cyper.: 437−438, 2010; Gehrke (2011): 70−71. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 379, 1983; Gordon-Gray, Cyper. Natal: 38, fig. 13A, 1995 (Strelitzia 2: 38, fig. A-C, 1995, utricle); Fl. Eth. & Eritrea 6: 508, 1997; Cook, Aquat. & wetland pl. south. Afr.: 85, 2004.

syn.: *Carex riparia* Curtis var. *acutiformis* (Ehrh.) Fiori; See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tufted herb 50−170 cm tall, stoloniferous between tufts; stems ± scabrid, sharply 3-angled, with thick scaly stolons; leaves 60−120 cm long, 7−10 cm wide, plicate, margins distinctly scabrid; inflorescence of 5−8 erect or drooping spikes arising singly from leaf-sheaths each 1,5−10,5 cm long, 4−5 mm ∅; upper spikes (sub-)sessile, lowest ones with peduncles 5−20 cm long; upper 2−3 spikes male with a few female flowers at base; one spike in the middle usually half male & half female; lower spikes female; utricles ovoid-ellipsoid, 3−5 mm long, papillose, prominently veined.

Ususally rooted in water; swamps; seepage bog; margins of ponds, along streams, rivers; 2100−3000 m alt.

Very rare in NE-E Africa; Morocco, Algeria; S. Africa, Lesotho; widely distributed in warm and temperate regions of Europe (map in Koopman 2011: 37), Asia E to Kashmir, N. America. – However, commonly mentioned in NE – E Africa "as a result of misidentifications" (Gehrke 2011: 70). – Considered to be introduced in Africa. However, the S. African material differs from European material, and might represent a distinct species (Gehrke, l.c.). – The distribution (Africa) follows bird migration routes (Cook, l.c.).

A rust fungus, *Puccinia caricina* DC. is reported by Gjaerum (1999: 134−135) from Tanzania, Masai Distr. This fungus includes several varieties; the size of the urediniospores corresponds to var. *urticae-acutiformis* (Kleb.) Henderson.

(**C. aethiopica** Schkuhr); Gehrke (2011): 76.

This S. African species (Cape) is recorded by Burrows & Willis (Pl. Nyika Plateau, Malawi: 298, 2005) from N Malawi: "perennial, tufted and leafy; leaves often red at base; inflorescence of several erect spikes from upper nodes of culm, glumes reddish brown; along forest margins near watercourses".

This brief description does not allow us to determine the plant (coll. Smook 10917, PRE, MAL). It may correspond to *C. vallis-rosetto* K. Schum. (syn. *C. cyrtosaccus* C. B. Clarke) present in the area.

(**C. angolensis** Nelmes); Figueiredo & Smith, Pl. Angola: 178, 2008; Gehrke (2011): 83, 85. – Icon.: Gehrke, o.c.: 58 (Fig. 4 D 1−2).

Perennial plant with a short rhizome; stems 1−1,25 m tall, obtusely trigonous, leafy; leaves ± as long as stems, 5−8 mm wide, long-attenuate; inflorescence paniculate with 6−8 secondary panicles; spikes 7−13 mm long, androgynous, male part very short; utricles 4 mm long, ± obovate; stigmas 3.

Gehrke remarks:

Possibly indistinct from *C. echinochloe* subsp. *nyasensis* but it differs in: – more pyramidal and distant secondary panicles. Differs only slightly from *C. tricholepis* in: – narrower leaf (5−8 mm wide and dark reddish leaf base, rarely with a reddish base in *C. tricholepis*).

Brachystegia woodland on sand.

Not mapped (Angola, Zimbabwe, Zambia, Malawi).

(**C. antoniensis** A. Chev.)

Description in Rev. Bot. Appl. Agric. Trop. 15: 1032−1033, 1935:

Near *C. pseudocyperus* L.

Tufted herb; stems 40−70 cm tall, sharply 3-angled; leaves long, 10−15 mm wide; male spike solitary, linear, 3−5 cm long; female spikes 4−6(−10), erect, close to the male spike; utricles ovoid, glabrous, 5 mm long, terminating in a long 2-fid beak.

At foot of waterfall; margins of permanent rivulets; 800 m alt.

Endemic to Cape Verde Isl., Santo Antão.

C. bequaertii De Wild. subsp. **bequaertii**, incl. var. *maxima* Lye; Fl. Rwanda 4: 429, 1988; Fl. Trop. E. Afr., Cyper.: 436−437, 2010; Gehrke (2011): 71−72; Míguez & al. (2017): 2214 (map). – Icon.: Robyns & Tournay, Fl. Parc Natl. Albert 3: 291, 1955; Napper in J. E. Africa Nat. Hist. Soc. 24: figs. 28 & 34 (as *C. mildbraediana*), 1963; Haines & Lye, Sedges & rushes E. Afr.: 378, 1983; Fl. Eth. & Eritrea 6: 382, 507, 1997; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park Rwanda: 339, 2008; Bot. J. Linn. Soc. 188: 48, 2018.

syn.: *C. robusta* Hochst. ex Boeckeler 1876, pro syn.; *C. petitiana* sensu auctt., non A. Rich. (See Fl. Trop. E. Afr., l.c.); *C. mildbraediana* sensu Napper (l.c.) p.p., non Kük.

Perennial herb with short curved stolons 2−5 cm long, 1 cm ∅, covered with hard shiny scales; stems 0,6−2 m tall; leaf blades ± flat, 70−80 × 1,2−1,5 cm, glabrous but minutely papillate, margins scabrid above; sheaths 15−20 cm long; inflorescence of *6−9* long and usually *pendulous dark brown spikes* born singly at the nodes and often widely spaced; spikes 4−22 × 0,7−1 cm; peduncles to 15−25 cm long; utricles ovoid, 3−4 × 1,5 mm, with reddish dots, beak very short.

Hagenia forest; lower alpine ericaceous zone; *Juniperus* forest; mist forest; seepage zones in craters; swamps; flushes; buffalo wallow; streamsides in grassland; upper bamboo zone; 1950−4000 m alt.

Variable in size. Var. *maxima* very large with broader spikes is the largest *Carex* in E. Africa.

Subsp. **mossii** (Nelmes) Míguez, Martin-Bravo & Jim.-Mejías in Bot. J. Linn. Soc. 188: 49, 2018 (bas.: *C. mossii* Nelmes), occurs in S. Africa.

Similar to *C. pendula* Huds. (Europe-Asia): a number of specimens have been misidentified as such (Gehrke, o.c.: 72).

C. bequaertii sensu Hedberg (1957) = *D. mildbraediana*.

(**C. biegensis** Cherm.)

syn.: *C. johnstonii* quoad specim. Luke & al. 6905 sensu Fl. Trop. E. Afr., Cyper.: 435, 2010.

Abridged description:

Rhizome woody, thick; stems 70−150 cm tall, 2−3 mm ∅, trigonous; basal leaves not very much shorter than stems, flat, 6−8 mm wide, margins and tips scabrous, sheaths blackish purple; inflorescences laxly paniculate, 25−40 cm long; secondary panicles

8−12, ramose, lax, 4−8 cm long; bracts leafy, the lowermost to 40 cm long; spikes ovate-lanceolate, 10−15 mm long, erect, male part shorter than female; utricles 7−7,5 mm long, narrowly lanceolate, purple, 2-nerved, beak long, scabrid; styles 3. – Said to be near *C. johnstonii* but spikes shorter and more densely flowered, with glumes as long as utricles that are smaller, purplish and more pubescent.

Based on Humbert 7679, 7679 bis from Monts Biega E of Lake Kivu, E Zaire. Ecology not recorded; 2400−2790 m alt.

Gehrke (2011: 67−68) mentions a gathering from Tanzania, Udzungwa Mts (Luke & al. 6905), which, as she points out, is cited in Fl. Trop. E. Afr., Cyper.: 435, 2010, and figuring there under *C. johnstonii* but "may be a distinct taxon". It has "very dark chestnut glumes and dark utricles with pale ribs densely shortly pubescent. The whole inflorescence appears dark brown". Compared with *C. johnstonii* the plant is larger with basal leaf sheaths dark red to brown, blades 60−80 (not 25−60) cm long, utricles always dark red (not green) and shorter (7−7,5 not 8−12 mm long) covered in short appressed hairs.

Open places in forest; 2500−2800 m alt.

Taxonomic status uncertain. Not mapped by us (Zaire, Uganda, Rwanda, Tanzania).

C. brassii Nelmes; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006; Gehrke (2011): 85.

Erect perennial herb forming clumps, 80−120 cm tall, base surrounded by reddish-purple sheaths; leaves much shorter than stems, ± flat, 3−4 mm wide, sheaths purplish red; inflorescence narrowly paniculate, 30 cm long; secondary panicles 7, lax, 5−7,5 cm long, 2,5−3 cm wide; spikes bisexual, sessile, 8−17 mm long; female glumes 4−5 mm long; utricle 5−6 mm long incl. beak, c. 1 mm wide; stigmas 3.

Scattered on banks of a stream in dense forest shade; river beds; bogs; 1000−2100 m alt.

Said to be (Nelmes) related to *C. spicatopaniculata*, but leaves narrower, spikes longer and utricle longer. However, according to Gehrke (2011: 85) the type specimen (Brass 16714) resembles much more *C. tricholepis* and *C. angolensis* but leaves narrower (3−5,5 mm, not 5−11 mm), utricles a little longer (5−6 mm, not 4−5 mm), and female glumes shorter (4−5 mm, not 5−6 mm).

Only known from S Malawi, Mt Mulanje. However, Burrows & Willis (Pl. Nyika Plateau, Malawi: 298, 2005) report the plant from N Malawi, Nyika Plateau, sine loco (Patel 1999).

C. brunnea Thunb. subsp. **occidentalis** Lye; Thulin, Fl. Somalia 4: 147, 1995; Gehrke (2011): 68−69. – Icon.: Kew Bull. 39: 749, 1984 (utricle); Bull. Mus. Natl. Hist. Nat., Sect. B, Adansonia, Bot., Sér. 4, 18: 237, 1996; Fl. Eth. & Eritrea 6: 509, 1997.

Tussocky perennial herb with a compact woody rhizome giving rise to many crowded stems 30−60 cm tall, 0,1−0,15 cm ∅, 3-angled, scabrid to subglabrous on angles; leaves many; lower sheaths dark red brown, nerves almost black, sometimes splitting into fibres; blades to 40 × 0,3−0,4 cm, flat, margins and ribs scabrid; inflorescence of 1−3 slender, stalked or subsessile spikes from each upper 5−8 sheaths; spikes 10−30 × 3 mm; flowers *markedly separated* from each other in a cluster (at base 5−15 female flowers, above 2−6 male flowers /male part much shorter than female); utricle lens-shaped, c. 3,5 × 1,2 mm, beak c. 1 mm long, nerves prominent.

Podocarpus forest, in shade; rocky gully in deep shade in evergreen bushland with *Buxus*, *Juniperus*, *Olea*, *Pistacia*, *Acokanthera* on limestone; 1400−2060 m alt.

Near **C. brunnea** var. **arabica** S. S. Hooper in Yemen (Wood, Handbook Yemen Flora: 333, 1997).

Subsp. **brunnea** distributed from Madagascar, Mauritius, Réunion E-wards to India, Vietnam, China, Japan, Korea, Nepal, Philippines, Australia, New Caledonia.

C. castanostachya K. Schum. ex Kük.; Fl. Trop. E. Afr., Cyper.: 435, 2010; Gehrke (2011): 86. – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24 (106): fig. 24, 1963; Haines & Lye, Sedges & rushes E. Afr.: 376, 1983.

syn.: *C. filicina* Nees var. *ceylanica* sensu Peter 1938, non (Boeckeler) Kük.

Tufted leafy perennial herb 60−150 cm tall; leaves shorter than stems, flat, 1 cm wide; inflorescence *chestnut brown*, paniculate, consisting of many smaller delicate secondary panicles, with a triangular outline; spikelets 4−10 mm long, c. 1 mm wide when young but wider when mature utricles spread; *glumes* dark, *chestnut brown* like the utricles that are 4−4,5 mm long incl. the 1,5 mm long beak, narrow, *scabrid* with long white hairs and usually *distinctly curved at maturity*.

Moist forest, forest edge; bamboo thicket; 1500−2300 m alt.

Distribution: Kenya, Tanzania, but Gehrke (l.c.) also cites a gathering from Burundi (Reekmans 8638).

Near *C. filicina* Nees from India E-wards to China, a species split into many infraspecific taxa, which are all very variable. "There is no doubt that *C. castanostachya* will have to be sunk into *C. filicina* …" (Fl. Trop. E. Afr., l.c.).

C. chlorosaccus C. B. Clarke; Robyns & Tournay, Fl. Parc Natl. Albert 3: 288, 1955; Fl. Rwanda 4: 429, 1988; Simpson & Inglis in Kew Bull. 56: 264, 2001; Chapman & Chapman, Forests Taraba & Adamawa States, Nigeria: c49, 2001; Puff & Sileshi in Syst. Geogr. Pl. 71: 982, 2002; Cabezas & al. in Belg. J. Bot. 137: 6, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006; Gehrke (2011): 87−88; Onana, Vascul. pl. Cameroon…: 159, 2011; Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 375, 1983; Fl. Eth. & Eritrea 6: 506, 509, 1997; Fl. Trop. E. Afr., Cyper.: 433, 2010.

syn.: *C. echinochloe* Kunze var. *chlorosaccus* (C. B. Clarke) Kük.; *C. leptocladus* C. B. Clarke; *C. wahlenbergiana* sensu auct., non Boott (Fernandoo Poo).

Perennial tussocky herb 30−120 cm tall with woody rhizome; basal leaf sheaths dark red; blades 50−90 cm long, 0,5−0,9 cm wide, scabrid on margins and veins; inflorescences green, slender, much branched panicles 8−50 cm long, often with one short and one longer branch at the lower nodes; inflorescence axis and side branches densely pubescent; spikelets 6−20 mm long, 3−5 mm wide; utricle *4−5,5 mm long* incl. *1,5−2,2 mm long* beak.

Evergreen forest, forest edges, rain- and riparian forest; mossy damp streambanks in forest; bamboo swamp edges extending to *Erica* belt; in shade; along paths and roads; 1300−3300 m alt.

Bioko/Fernando Poo, S. Tomé ? (cf. Bothalia 41: 52, 2011, as *C. leptocladus*).

Provides grazing for domestic stock and buffaloes (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 608, 1985).

Closely related to *C. echinochloe*. Very similar to *C. spicatopaniculata*.

C. cognata Kunth, incl. var. *congolensis* (Turrill) Lye, var. *drakensbergensis* (C. B. Clarke) Kük.; but excl. var. *abyssinica* (Chiov.) Lye (= *C. phragmitoides*); See Note below referring to Gehrke

(2011) and Archer & Balkwill (2012); Fl. Rwanda 4: 429, 1988; Clarke & Mannheimer, Cyper. Namibia: 88 (map), 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Fl. Trop. E. Afr., Cyper.: 446−447, 2010 (excl. var. *abyssinica* in text). – Icon.: Ber. Schweiz. Bot. Ges. 63: 356, 1953 (as *C. acutatiformis*); Napper in J. E. Africa Nat. Hist. Soc. 24/106: 12, fig. 20, 21, 1963; Haines & Lye, Sedges & rushes E. Afr.: 383, 1983 (as var. *congolensis*); Gordon-Gray in Strelitzia 2: 39, fig. 13 G-I, 14, 1995.

syn.: *C. pseudocyperus* L. var. *cognata* (Kunth) Boott; *C. retrorsa* Nees 1835, non Schweinitz 1824, nom. illeg.; *C. drakensbergensis* C. B. Clarke; *C. congolensis* Turrill; *C. pseudosphaerogyna* Nelmes; *C. acutatiformis* H. E. Hess

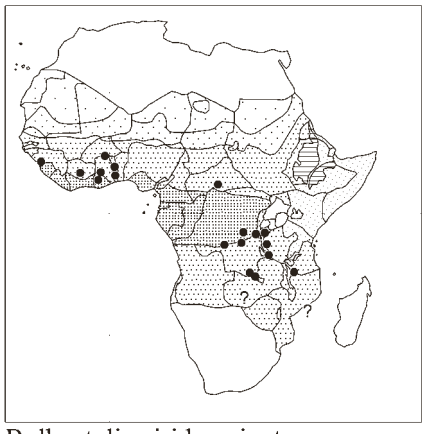
Tufted perennial herb from creeping rhizome with short scaly stolons; stems 30−100 cm tall; leaf blades 10−120 cm long, 3−10 cm wide, plicate; inflorescence of 4−6 pale erect crowded sessile or subsessile spikes (penduncles *1−3 cm* long sometimes well developed); spikes 2−3, *brown*, 1−4 cm long, 2−4 mm wide; utricle ovoid, 3−4,5 mm long incl. beak c. 1 mm long, with 2 *long-divaricate teeth*.

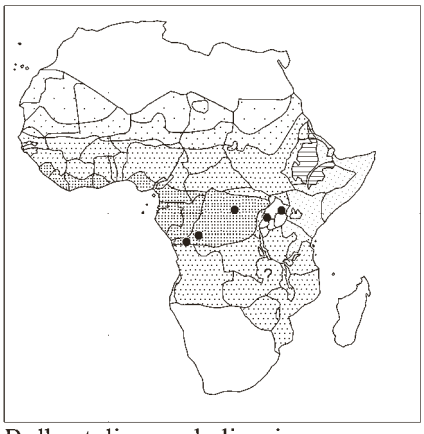
Swampy areas in bamboo forest; perennially wet bogs; sometimes in standing water; *Syzygium* forest; plateau grassland; grassland along small stream; c. 1400 – c. 3000 m alt.

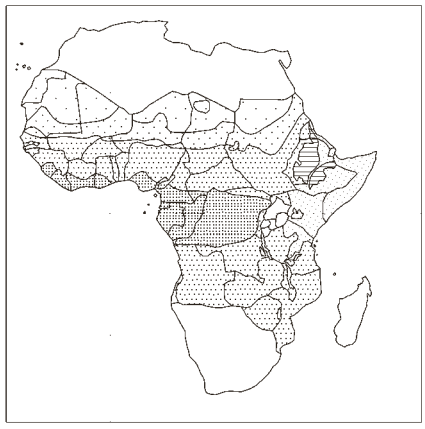
S. Africa, Namibia, Lesotho, Swaziland.

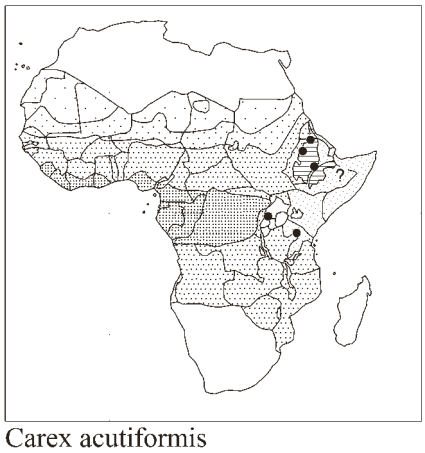
Note: Gehrke (2011: 74−75) synonymised *C. cognata* Kunth under *C. clavata* Thunb. (in Cape Province, S. Africa). Her treatment is thoroughly discussed by Archer & Balkwill (Bothalia 42: 190−193). "The glabrous utricle plus the spikelet bracts [±] equalling the utricle in length, are … diagnostic of *C. cognata*, but certainly not of *C. clavata* in which the utricles are hairy, … and the spikelet bracts are usually much shorter than the utricles". Further, "Clarke (1898) [= Fl. Cap. 7: 229−310] distinguished *C. drakensbergensis* with its longer, drooping, distant, pedunculate spikes with dark ferruginous female bracts from *C. cognata* with shorter, erect, clustered, nearly sessile spikes and greenish female bracts. Shortly afterwards Kükenthal (1909) found that the two taxa were not separable at species level and reduced *C. drakensbergensis* to a variety of *C. cognata* ... Intensive herbarium studies … (Reid 1991) indicated that plants matching *C. drakensbergensis* occurred mainly at high altitude, growing in open sunny habitats, whereas plants matching *C. cognata sensu stricto* occurred near the coast, … at waterholes in … Namibia, growing in lightly shaded habitats … In practice, however, it is not possible to divide herbarium specimens into two meaningful taxa since there are always intermediate examples… We concluded that the differences between these two taxa are entirely habitat-related." Gehrke (2011: 74) treated *C. drakensbergensis* as a separate species, as well as *C. congolensis* (o.c.: 75).

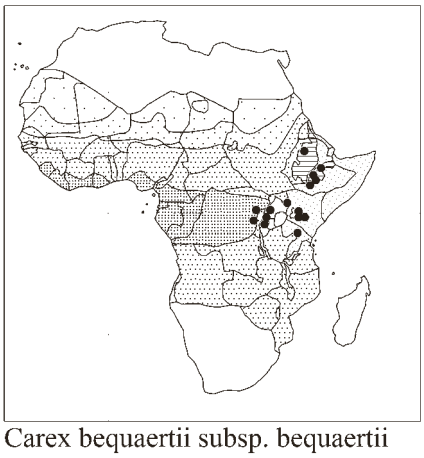
C. conferta Hochst. ex A. Rich., incl. var. *leptosaccus* (C. B. Clarke) Kük. and var. *kilimandscharica* Kük. in herb. (fide Gehrke 2011: 63), but excl. var. *lycurus* (K. Schum. ex Engl.) Lye (= *C. lycurus*). – Robyns & Tournay, Fl. Parc Natl. Albert 3: 284, 1955 (var. *leptosaccus*); Puff & Sileshi, Pl. Simen: 238, 2005; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 372−373, (*excl*. fig. 769), 1983; Fl. Eth. & Eritrea 6: 504, 1997; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park Rwanda: 339, 2008; Fl. Trop. E. Afr., Cyper.: 427, 2010. – Our treatment follows that of Fl. Trop. E. Afr., l.c., i.e. not keeping up var. *leptosaccus* ("… a careful examination of all material from Ethiopia and East Africa shows that it would be difficult to decide the name to be given to many specimens" (p. 428).

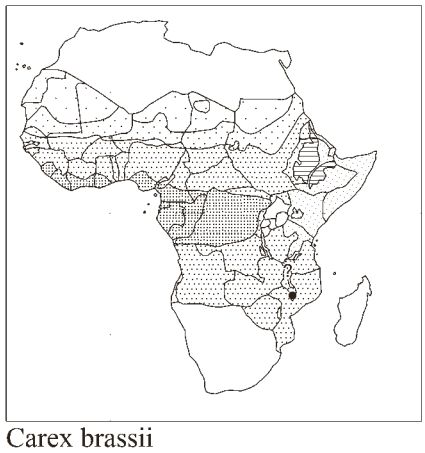

Bulbostylis viridecarinata

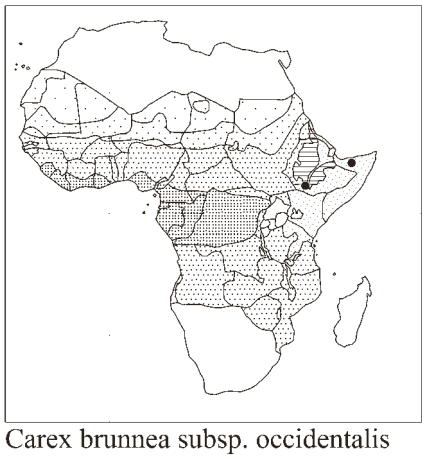

Bulbostylis wombaliensis

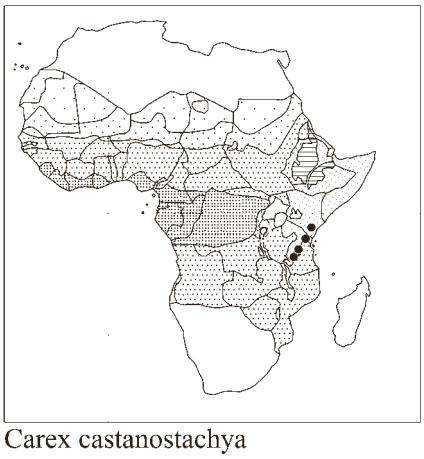


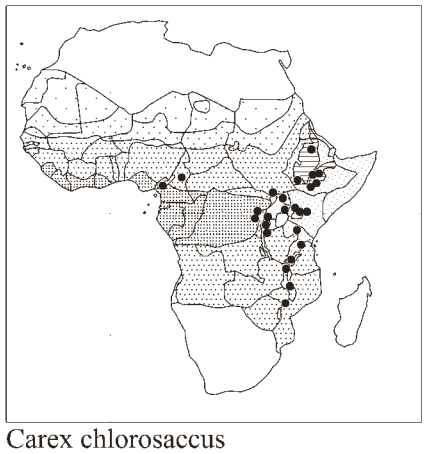

Carex acutiformis

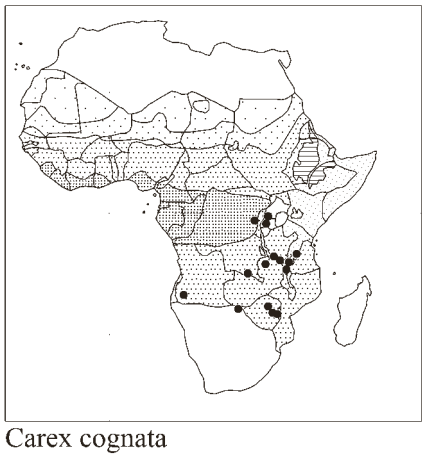

Carex bequaertii subsp. bequaertii

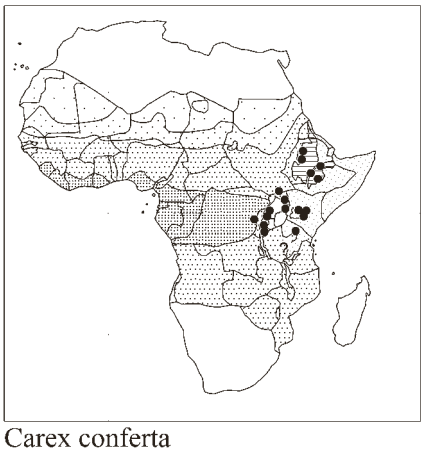

Carex brassii

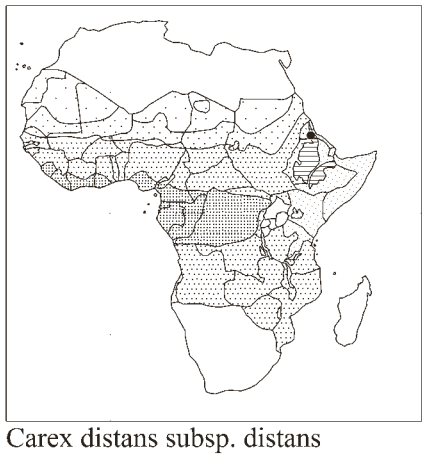

Carex brunnea subsp. occidentalis


Carex castanostachya


Carex chlorosaccus


Carex cognata


Carex conferta


Carex distans subsp. distans

syn.: *C. leptosaccus* C. B. Clarke; *C. koestlinii* Hochst. ex Steud. (fide Fl. Eth. & Eritrea 6: 503, 1997); *C. erythrorrhiza* Steud. 1855, non Boeckeler 1875, nom. inval.

Perennial herb with tufts 15−45 cm tall from a mostly long-creeping rhizome, usually well spaced; leaves to 35 cm long, *0,2−0,8 cm* wide; basal sheaths brownish; inflorescence of green and brown narrow panicles, 2−5 cm long, 1−1,5 cm wide, upper branches with solitary spikelets densely set, 2−5 lower branches with 2−10 spikelets each; spikelets ovoid, 5−10 mm long, 3−10 mm wide; utricle 3,6−4 mm long, incl. 1−2 mm long scabrid beak.

Grassland with *Acacia*; moorland; bogs; clearing; moist ground along streams in swamps; cloud forest and scrub; forest with *Podocarpus latifolius*, *Olea capensis* subsp. *hochstetteri*, *Syzygium guineense* subsp. *afromontanum*, with open glades and patches of mountain bamboo and *Hagenia abyssinica*, *Hypericum revolutum* woodland, in open, recent burnt glade; grassland with *Acacia*; 2000−4000 m alt.

C. distans L. subsp. **distans**; Fl. Eth. & Eritrea 6: 510, 1997; Gehrke (2011): 71 (as var. *sinaica*). – Icon.: Maire, Fl. Afr. N. 4: 161, 1957; Jafri & El Gadi, Fl. Libya 119: 11, 1985; Chaudhary, Flora Kingd. Saudi Arabia Ill. 3: 115, 2001; Boulos, Fl. Egypt 4: 408, 2005; Amini Rad in Fl. Iran 71, Cyper.: 218, 2011.

syn.: *C. distans* fa. *sinaica* (Nees in Steud. 1855) Kük., var. *sinaica* (Nees in Steud.) Gehrke, fa. *sinai* (Boott) Boeckeler; *C. sinaica* Nees in Steud.; *C. sinai* Boott; *C. burchelliana* Boeckeler var. *leiocarpa* Schweinf. in sched.; *C. diluta* M. Bieb. var. *bottae* C. B. Clarke ex Blatter. – For full synonymy, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard. Kew.

Densely tufted stoloniferous perennial herb 15−100 cm tall; stems bluntly 3-angled; leaf sheaths 2−4 cm long; blades 10−40 cm long, 0,2−0,6 cm wide; inflorescence of 2−3 erect unisexual spikes, the uppermost male 15−40 × 2−4 mm, female ones 10−30 × 5−8 mm, spaced out, the uppermost (sub-)sessile, the lowermost with stalks 1−4 cm long; utricle 3,5−5 mm long, beak 0,7−1,5 mm, scabrid, prominently veined.

Saline marsh; 2100−2300 m alt.

N Africa from Morocco to Egypt (Mateos & Valdés in Lagascalia 30: 321, 2010; Le Floc'h & al., Cat. synon. comm. Fl. Tunisie: 340, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 105, 2010); Saudi Arabia (S Taif), Yemen (Wood, Handbook Yemen flora: 333, 1997); from Europe E-wards to Turkey, SW Asia from Sinai to Iraq, Iran, Caucasus, Afghanistan, Pakistan to Kashmir and E Tibet; introduced into S. Africa, New Zealand, N. America.

Subsp. **oranensis** (Trab.) Jahand. & Maire in Morocco, Algeria, Tunisia.

C. divisa Huds. 1762, non Oeder 1768 (= *C. oederi* Retz.), incl. vars. (See Dobignard & Chatelain, Index synon. Fl. Afr. N. 1: 106, 2010); Gehrke (2011): 60. – Icon.: Jafri & El Gadi, Fl. Libya 119: 6, 1985; Kukkonen in Fl. Pakistan 206, Cyper.: 194 fig. 29 D-F, 2001; Chaudhary, Flora Kingd. Saudi Arabia Ill. 3: 114, 2001; Boulos, Fl. Egypt 4: 408, 2005; Amini Rad, Fl. Iran 71, Cyper.: 165, 2011.

syn.: *C. coarcta* Boott; *C. austro-afghanica* Raymond; *C. chaetophylla* Steud.; *C. divisa* subsp. *chaetophylla* (Steud.) Nyman, and var. *chaetophylla* (Steud.) Daveau; *C. erythrorrhiza* Boeckeler var. *curva* Chiov. – For full synonymy, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial greyish-green herb 10−80 cm tall; rhizome long, woody, horizontal, 2−6 cm ∅, covered in brown or black fibrous scales; stems single or clustered, erect or bending, 3-angled; leaves 1/3−2/3 of stem length; outer basal sheaths wide, light brown, margins scarious; blades 1−3 mm wide, flat or folded; inflorescence *1−4 cm long*, simple, of 3−15 sessile overlapping androgynous spikes; spikes globular to ellipsoid, 0,5−1,3 cm long, terminal spike smaller than the others; *female glumes 3−5 mm* long, frequently with arista; *utricles 3,2−4,7 mm* long, ellipsoid, beak c. 1 mm long.

Saline lakes; c. 2000 m alt.

Very variable in habit and utricle characters.

Madeira; W Europe, throughout S Europe; N Africa from Morocco to Egypt (Mateos & Valdés in Lagascalia 30: 322, 2010; Le Floc'h & al., Cat. synon. comm. fl. Tunisie: 340, 2010; Dobignard & Chatelain, l.c.); SW- C Asia to Iraq, Iran, Caucasus, Afghanistan, Pakistan to Kashmir, Burma, E Tibet. Introduced into S. Africa, N. America, New Zealand.

Rust fungi reported by Gjaerum (Lidia 4/5: 136, 1999): *Puccinia dioicae* P. Magn., *P. caricina* DC.

C. echinochloe Kunze, excl. var. *chlorosaccus* (C. B. Clarke) Kük. (= *C. chlorosaccus*); Fl. W. Trop. Afr., ed. 2, 3/2: 349, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 608−609, 1985; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006; Fl. Trop. E. Afr., Cyper.: 430−431, 2010; Harvey & al., Pl. Lebialem Highl., Cameroon: 152, 2010; Onana, Vascul. pl. Cameroon …: 159, 2011; Gehrke (2011): 88; Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. — Icon.: Boott, Illustr. Carex 1: pl. 166, 1858; Bot. Not. 125: 337, 1972; Haines & Lye, Sedges & rushes E. Afr.: 375, 1983 (subsp. *echinochloe*); Troupin, Fl. Rwanda 4: 427, 1988; Fl. Eth. & Eritrea 6: 505, 1997.

Tufted perennial herb 40−120 cm tall, with shortly creeping rhizome; stems and inflorescence branches shortly hairy; leaf blades flat, 90−120 cm long, 0,5−1,4 cm wide; sheaths brownish or dark, 2−6 cm long; inflorescence a slender densely branched panicle of spikes, green and brown, 8−50 cm long, 5 cm wide, often with one longer and one shorter branch at each node; spikes 0,5−1 cm long, 0,5 cm ∅, bisexual, female flowers below, male ones above; utricles 3−4,5 mm long incl. scabrid beak 1 mm long, green with prominent longitudinal ribs.

Parinari, *Brachystegia* woodland with termite mounds and often on termite mounds; riverine forest; grassland, thicket, secondary bushland in rocky places; bracken; seasonal *Papyrus* swamps; edges of lakes, streams; riverine forest; *Combretum* woodland; *Acacia lahai* woodland; forest of *Hagenia* and bamboo; margins of cultivation; pasture at edge of woodland, wooded grassland; rain-forest with *Albizia, Macaranga*, *Croton*, *Ocotea* at forest edge; 900−2750 m alt.

Bioko/Fernando Poo. – Senegal reported by Gehrke, l.c.

Comprises 2 subspp.: – subsp. **echinochloe**, with pale green glumes and green utricles 3,5−4 mm long (incl. 1 mm beak); – subsp. **nyasensis** (C. B. Clarke) Lye [bas: *C. nyasensis* C. B. Clarke; syn. *C. echinochloe* var. *nyasensis* (C. B. Clarke) Kük.] with more reddish brown glumes and utricles, these 4−4,5 mm long, in Upland Kenya, Tanzania, Malawi, Zimbabwe.

Similar to *C. chlorosaccus*, but utricles shorter (not 4−6 mm long) narrowed abruptly (not gradually) into the 1,5−2,2 mm long beak.

C. elgonensis Nelmes; Haines & Lye, Sedges & rushes E. Afr.: 381, 1983, excl. syn. *C. mildbraediana* Kük. var. *friesiorum* Kük.; Fl. Trop. E. Afr., Cyper: 438−439, 2010, excl. syn. *C. mildbraediana* Kük. var. *friesiorum* Kük. (= *C. mannii* subsp. *friesiorum*);

Escudero & al. in Amer. J. Bot. 96: 2101, 2009; Escudero & Luceño in Anales Jard. Bot. Madrid 68: 231−232, 2011. – Icon.: Napper in E. Africa Nat. Hist. Soc. 24/106: 11, figs. 38, 39, 1963; Haines & Lye, o.c.: 381.

syn.: *C. mildbraediana* Kük. var. *alpicola* Kük.

Perennial herb forming small tussocks 25−110 cm tall, with a caespitose rhizome; leaf sheaths brown to dark purple; blades 8−21 cm long, 0,3−0,6 cm wide, keeled to plicate; inflorescence 9−30 cm long, of 5−7 erect or pendulous spikes 1−5,5 cm long, 0,4−1 cm wide, heteromorphic, arising singly; peduncles 3−5 cm long; *glumes dark purplish to blackish*, often with a *very narrow yellowish* keel; utricles ellipsoid, 4−6 × 1−1,5 mm, narrowed into a bifid beak 1−2 mm long.

Stream banks; borders of peat bogs; 3290−3810 m alt.

Endemic to Mt Elgon (Uganda/Kenya), according to Escudero & Luceño, l.c. (with map).

C. erythrorrhiza Boeckeler 1875, non Steud. 1855 (= *C. koestlinii*); excl. var. *scabrida* Kük. (= *C. lycurus* subsp. *scabrida*) and var. *curva* Chiov. (= *C. divisa*). – Puff & Sileshi, Pl. Simen: 238, 2005; Gehrke (2011): 62. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 374, 1983; Fl. Eth. & Eritrea 6: 504, 1997; Fl. Trop. E. Afr., Cyper.: 429, 2010 (habit).

syn.: *C. koestlinii* Hochst. ex Steud. var *minor* Boott

Perennial robust herb forming dense *pillar-like tussocks* with a "trunk" to > 1,5 m tall and 30−40 cm ∅ at apex; rhizome not or shortly creeping; roots usually covered with a *bright brownish red* filamentose layer; apex of "trunk" with a great tuft of stems and leaves; stems 30−50 cm long, c. 1 mm ∅, 3-angled; leaves slender; blades 10−60 cm long, 1−5 mm wide, margins scabrid; inflorescence a narrow dense panicle 4−7 cm long, 0,6−1,2 cm wide; spikelets to 1,2 cm long, 0,5−0,8 cm wide; utricles not projecting beyond glumes, 3−4 mm long, incl. a c. 1 mm long smooth beak.

In swamps, grassland near and in streams; wet places in shade; heath zone; 1900−4050 m alt.

According to Fl. Trop. E. Afr., l.c., the status of many specimens is dubious, as rootstocks and field observations are lacking. The pillar-like habit seems not to have been recorded for Ethiopia, the habit then being much like that of *C. conferta*.

C. fischeri K. Schum. (See also text below).

C. fischeri K. Schum. was "resurrected" at species level by Escudero & Luceño (Anales Jard. Bot. Madrid 68: 232−234) in 2011. It was cited by Clarke in Flora of Tropical Africa 8: 523, 1902, as follows: "This has the spikes more slender than the slenderest examples of *C. petitiana*, and the distinctly bifid beak to the utricle distinguishes it. It appears to be allied to *C. petitiana*, but the description of K. Schumann is so short, and the example seen so fragmentary, that it is possible it may be nearer *C. pendula* Hudson.

In more recent treatments and floras *C. fischeri* is considered as a synonym, mostly under *C. petitiana* A. Rich.; Haines & Lye (Sedges & rushes E. Afr.: 382−383, 1983) did so, in writing: "The concept of *C. petitiana* used here includes much material previously identified as *C. fischeri, C. cuprea, C. longipedunculata, C. ninagongensis* and *C. vallis-rosetto*". Their Figure 789 (p. 382) may represent *C. fischeri* subsp. *recedens*.

In Troupin, Flore du Rwanda (4: 430) 1988, *C. petitiana* includes *C. fischeri, C. ninagongensis, C. longipedunculata* and *C. cuprea*. Fig. 177/2 p. 427 resembles very much the specimen figuring in Haines & Lye, l.c.

K. A. Lye authored *Cyperaceae* for Flora of Ethiopia & Eritrea 6 (1997). *Carex fischeri* is there (p. 508) considered to be a synonym under *C. simensis* Hochst. ex A. Rich.

In Flora of Tropical East Africa, Cyperaceae: 439, 441, 2010 B. Verdcourt treated *C. petitiana* in a broad sense citing no fewer than 17 synonyms. He wrote: "My attempts to resurrect some of these previously recognised taxa perhaps at infraspecific level have not been satisfactory. Plants with dull to bright greenish slim spikes 5−9 cm long, 5−6 mm wide with leaves up to 8 mm wide, match *C. fischeri*, widespread from the Kenya Highlands to N Tanzania; and have been so annotated by Nelmes…".

In her synopsis of *Carex* from sub-Saharan Africa and Madagascar (Bot. J. Linn. Soc. 166: 80−81, 2011) B. Gehrke "resurrected" *C. fischeri,* enumerating 3 synonyms, viz. *C. longipedunculata* K. Schum. var. *longistipitata* Kük., *C. longipedunculata* f. *recedens* Kük., and *C. vallis-rosetto* K. Schum. var. *heterostachya* Kük. She concluded: "the group needs further investigation".

The next step was taken by Escudero & Luceño (Anales Jard. Bot. Madrid 68: 232−234, 2011), who made a thorough study of the group. The following text is based on their work, incl. maps.

C. fischeri K. Schum. (Continuation of text above).

Tufted perennial rhizomatous herb; stems 30−115 cm tall; leaves 15−65 cm long, 0,3−1 cm wide, keeled to folded; sheaths dark to reddish-brown to purplish; inflorescence 11,5−54 cm long, of 4−10 heteromorphic spikes; terminal 1(−2) spike(s) male or gynecandrous, and 3−9 female lateral spikes; spikes linear to clavate, 2−8 × 0,2−1 cm, sessile or shortly pedunculate (1−3,5 cm); utricles ellipsoid, 3−6 × 1−2 mm, tapering into a bifid beak 1−2 mm long.

Wet or shady forests, meadows; swamps, peat bogs; stream banks; bamboo and *Hagenia* zones; 2150−4300 m alt.

Variable plant: "we have seen several specimens that exhibit intermediate morphological features, but most of these materials can be classified in one of the two races… some individuals studied show intermediate characters between this species and *C. mannii* (e.g. spikes arising in pairs… and red basal sheaths)…".

Comprises 2 subspp.: – subsp. **fischeri** (syn.: *C. simensis* Hochst. ex A. Rich. var. *mauensis* Kük.; *C. fischeri* var. *basiandra* Kük.), with non-rigid leaves and pale female glumes; – subsp. **recedens** (Kük.) Luceño & M. Escudero (bas.: *C. longipedunculata* K. Schum. var. *ninagongensis* Kük. fa. *recedens* Kük.), with rigid leaves and purplish female glumes, occurring on the volcanoes on the Zaire-Uganda-Rwanda border at high altitude. "The putative isotype… consists of just a few utricles."

C. greenwayi Nelmes

Treated as a synonym of *C. vallis-rosetto* by Haines & Lye, Sedges & rushes E. Afr.: 381−382, 1983. Verdcourt in Fl. Trop. E. Afr., Cyper.: 443−444, 2010, did the same. Gehrke (2011: 81−82) widened the concept of this species as she included *C. mildbraediana* – *C. ramosipes* and *C. mannii* p.p. The final treatment due to Escudero & Luceño (2011: 234−235) established the circumscription of *C. greeenwayi* as follows.

syn.: *C. vallis-rosetto* K. Schum. var. *purpurea* Kük., and fa. *ramosa* Kük.; *C. vallis-rosetto* sensu auctt. plur.

Tufted rhizomatous herb; stems 66−153 cm tall, very stout, smooth, base densely dark purplish spotted or tinted; leaves 44−98 cm long, 0,8−1,4 cm wide, folded; sheaths dark purplish; inflorescence 32−64 cm long, of 9−24 spikes each bearing only a few male flowers at top; terminal spike terete, 3,5−11,4 × 0,4−0,8 cm with peduncle to 2 cm long; lateral spikes terete, densely flowered, arising in pairs (or groups of 3), with peduncle to 7,5 cm

long; *utricles* elliptic, 4,5−5,5 × 1−1,5 mm, *straight*, beak ± bifid 1,1−1,5 mm long.

Damp places in shade, with ferns and *Philippia* (*Erica*) *excelsa*, *Hagenia abyssinica*; *Podocarpus* forest; swamp; river banks; 1900−3050 m alt.

In Kenya: Mt Kenya, Aberdares; Tanzania: Kilimanjaro.

(**C. humpatensis** H. E. Hess); Gerke (2011): 86. – Icon.: Ber. Schweiz. Bot. Ges. 63: 354, 1953.

Perennial herb 60−80 cm tall with stolons 2−5 cm long, 0,3−0,5 cm ∅; stems trigonous, scabrid; leaves flat, dark green, 3−5 mm wide, scabrid, apex long-attenuate; basal sheaths yellowish to reddish-brown, fibrous with age; inflorescence 25−40 cm long of 4−7 ovate panicles 4−6 × 2−3 cm, pedunculate; spikes ovate, few-flowered, often with only 3 male flowers at apex; utricle trigonous, 3,5−4 mm long, 1,3−1,5 mm ∅, beak 1,5 mm long, recurved; stigmas 3.

In a deep gorge on horizontal calcareous sediments and in rock crevices; 1650 m alt. (SW Angola).

Distinguished from (*C. nelmesii* =) *C. tricholepis* and (*C. euryphylla* =) *C. haematosaccus* C. B. Clarke (Madagascar) by the narrower leaves.

Taxonomic status uncertain: "The status of *C. humpatensis* should be more carefully investigated, as it might not vary sufficiently from *C. spicato-paniculata* to be recognized as a distinct species" (Gehrke, l.c.).

Not mapped by us: Angola, Chela Mtns, between Tchivinguiro and Chela (Sà da Bandeira range / Bezirk).

C. johnstonii Boeckeler, incl. var. *angustifolia* Cherm. and var. *brevifructus* Kük. in herb.; Robyns & Tournay, Flore Parc Natl. Albert 3: 290, 1955; Fl. Trop. E. Afr., Cyper.: 434−435, 2010; Gherke (2011): 68; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Engler, Pflanzenreich 4 (20) Cyper.-Caric.: 594, 1909; Haines & Lye, Sedges & rushes E. Afr.: 377, 1983; Troupin, Fl. Rwanda 4: 427, 1988; Fl. Eth. & Eritrea 6: 507, 1997.

syn.: *C. volkensii* K. Schum.; *C. kuekenthalii* K. Schum. ex C. B. Clarke 1906, nom. illeg., non Dörfl. ex H. Zahn

Tufted perennial herb 35−150 cm tall with *short* creeping rhizome; leaf blades 25−60 cm long, 0,4−1 cm wide; sheaths dark red or reddish brown, 1−4 cm long, glabrous; inflorescence a very narrow slender panicle, mostly unbranched (sometimes with 2−3 branches from each node); spikes 1−7 cm long, 0,5 cm wide, upper ones shortly stalked or sessile, lower ones on 5−20 cm long peduncles; *utricle* lanceolate, *8−12 mm long* incl. beak 2−4 mm long.

Giant heath zone; *Podocarpus*, *Hagenia* bamboo forest; *Arundinaria* and *Erica-Hagenia* forests; forest edges; *Juniperus* forest; usually in shade; 750−3600 m alt.

Variable species: several colour forms exist, with basal leaf sheaths yellow to dark red; utricles light green to brown.

Distinguished from other *Carex* species by its very long and narrow utricle.

Plants from Tanzania, Iringa Distr., Udzunga Mts (Luke & al. 6905) have been described as *C. biegensis* Cherm., a taxon of uncertain status (See above under that species).

(***C. ludwigii*** (Hochst.) Luceño & Martín-Bravo) – See **Schoenoxiphium rufum** below.

C. lycurus K. Schum.; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005 (as *C. conferta* var. *lycurus*); Fl. Trop. E. Afr., Cyper.: 429−430, 2010; Gehrke (2011): 64; Onana, Vascul. pl. Cameroon…: 159, 2011 (as *C. conferta* var. *lycurus*); Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Lock in Kew Bull. 70/4: § 46: 2, 2015 (as *C. robinsonii*). – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 287, 1955 (as *C. eyrthrorrhiza* var. *scabrida*); Napper in J. E. Africa Nat. Hist. Soc. 24/106: figs. 16−17, 1963; Haines & Lye, Sedges & rushes E. Afr.: 373, 1983 (as *C. conferta* var. *lycurus*); Troupin, Fl. Rwanda 4: 427, 1988 (as *C. conferta* var. *lycurus*).

syn.: *C. conferta* Hochst. ex A. Rich. var. *lycurus* (K. Schum. ex Engl.) Lye; *C. conferta* var. *leptosaccus* sensu Fl. Rwanda 4: 429, 1988, non (C. B. Clarke) Kük.

Perennial herb 0,2−2 m tall with stout tufts from a creeping rhizome, bases stout and triangular; leaves to 60 cm long, *5−12 mm* wide; basal sheaths pale brownish; inflorescence a very dense panicle, green and brown, 3−11,5 cm long, 1−3 cm wide, interrupted and ± lobulate; individual spikes 1,5−2,5 cm long, mainly female with some males at top; utricle ovoid, c. 4 mm long with a narrow beak 1−2 mm long, prominently ribbed.

Sphagnum bogs; swamps; seepage bogs in grassland or forest or woodland; by river in forest; lake margins; sometimes growing in water; 1200−3800 m alt.

Comprises 2 subspp.: – subsp. **lycurus** (syn.: *C. robinsonii* Podlech), a robust plant to 2 m tall and wide leaves (5−12 mm); – subsp. **scabrida** (Kük.) Verdc. (bas.: *C. erythrorrhiza* Boeckeler var. *scabrida* Kük.), a smaller plant (50−60 cm tall) with smaller leaves (3−5 mm wide), also found in Cameroon. – "However, the characters are not consistent enough to unambiguously separate a subspecies" (Gehrke, l.c.).

C. macrophyllidion Nelmes; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75−76, 2006; Fl. Trop. E. Afr., Cyper.: 434, 2010; Gehrke (2011): 85. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 376, 1983.

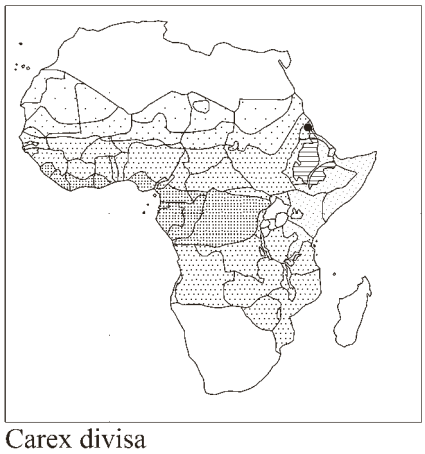
Perennial herb 25−60 cm tall forming large tufts from a short woody rhizome; leaves V-shaped in section or ± flat, 5−60 cm long, *2−5,5 mm wide*, the upper overtopping the inflorescence, long-attenuate, with long basal sheaths which become blackish and fibrous; inflorescence an interrupted panicle, each panicle 1,5−4 cm long, 1−2 cm wide; secondary panicles 5−6, *not pendulous, quite dense*, the lower single, the upper paired, subpyramidal; the lower long-pedunculate, the upper more shortly so; spikes densely flowered, 7−10 mm long; utricles 5−6 mm long incl. beak c. 1,5 mm long, longitudinally ribbed.

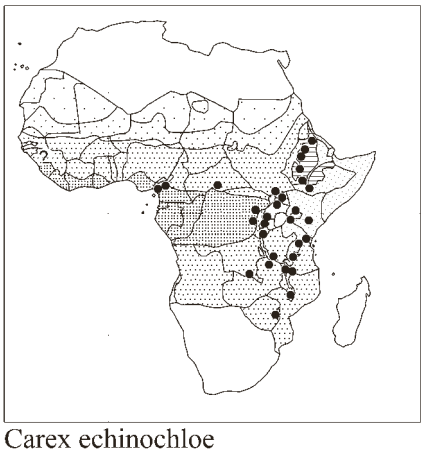
Short grassland under open *Isoberlinia*, *Brachystegia* woodland; open bushland; sometimes on termite mounds; pathsides in grassland; edges of streamside forest; 1100−2800 m alt.

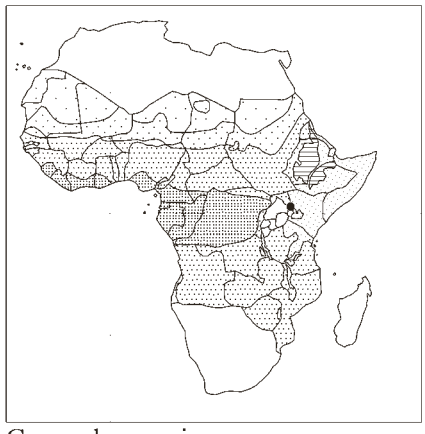
C. mannii E. A. Bruce

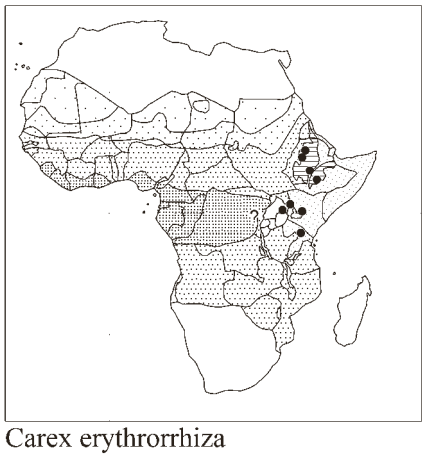
The circumscription of this species varies in the main floras for NE – E Africa. Escudero & Luceño (Anal. Jard. Bot. Madrid 68: 235−238, 2011, with maps) distinguish 3 subspecies (listed below with synonyms). They comment on the variability of the plants and note that some specimens studied show intermediate characters between *C. mannii* and *C. fischeri* (o.c.: 232).

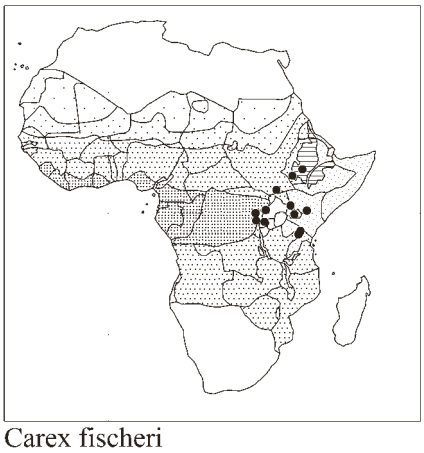
Robyns & Tournay (Fl. spermat. Parc Natl. Albert 3: 292−294, 1955) treat *C. mannii* (with synonyms) and *C. ninagongensis* as two entities, both considered as belonging to *C. mannii* subsp. *mannii* by Escudero & Luceño, l.c. – In Troupin, Fl. Rwanda 4: 430, 1988, *C. mannii* is recognised apart, whereas *C. ninagongensis* and *C. longipedunculata* are cited as synonyms under *C. petitiana*. — Haines & Lye, Sedges & rushes E. Afr.: 380−381, 1983, with figures, keep *C. mannii* and *C. thomasii* as two separate

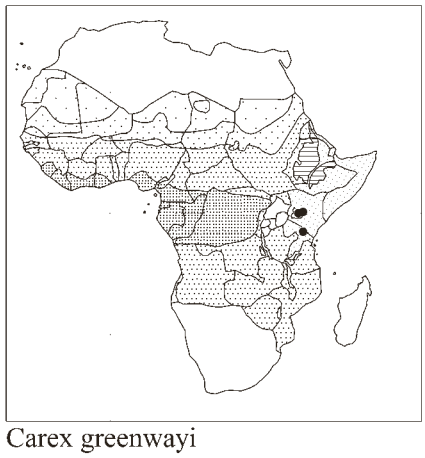

Carex divisa

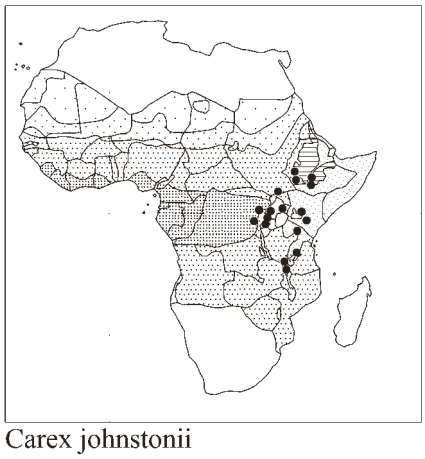

Carex echinochloe

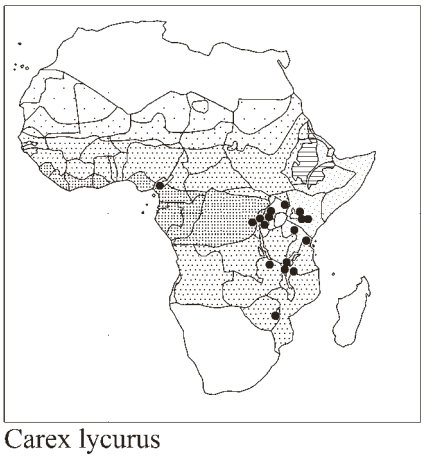

Carex elgonensis

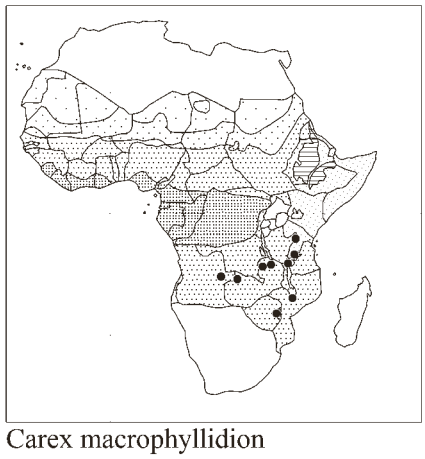

Carex erythrorrhiza

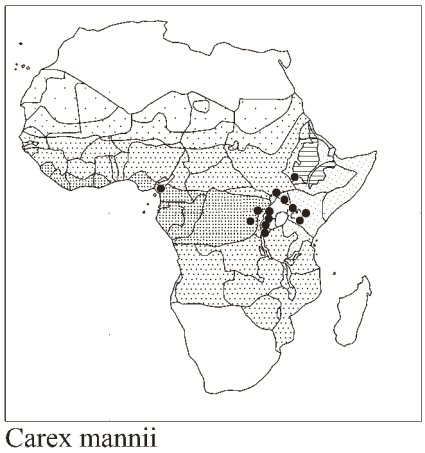

Carex fischeri

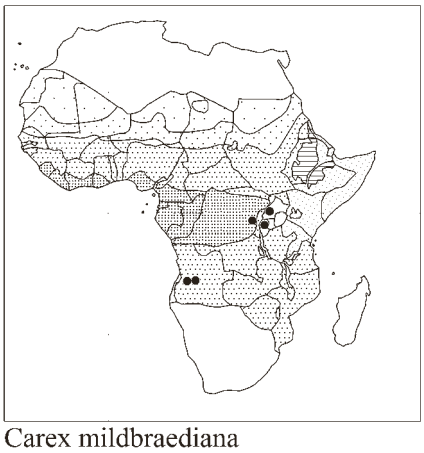

Carex greenwayi

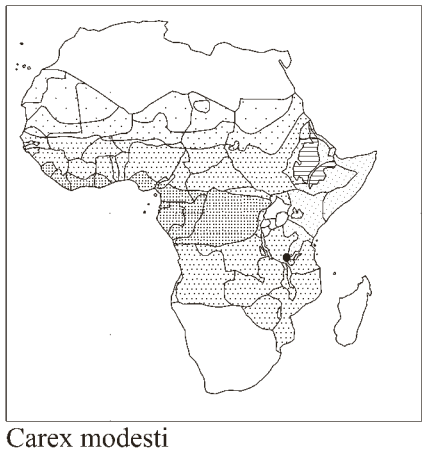

Carex johnstonii


Carex lycurus


Carex macrophyllidion


Carex mannii


Carex mildbraediana


Carex modesti

species, now considered as two subspecies by Escudero & Luceño (l.c.). – Flora of Ethiopia & Eritrea 6: 508, 1997 (with fig.) mentions *C. thomasii* at specific level.

Verdcourt in *Fl. Trop. E. Africa, Cyperaceae*, 2010, treats the material differently. What is now considered as *C. mannii* var. *friesiorum* is partly cited under *C. elgonensis* as syn. *C. mildbraediana* Kük. var. *friesiorum* Kük. (p. 439). *C. thomasii* (p. 443) is treated at specific level (now *C. mannii* subsp. *thomasii*). *C. petitiana* is treated in a broad sense by Verdcourt who includes various synonyms now considered to belong under *C. mannii* subsp. *mannii*: *C. longipedunculata* K. Schum. var. *ninagongensis* Kük., *C. ninagongensis* (Kük.) Robyns & Tournay, *C. simensis* A. Rich. var. *ninagongensis* (Kük.) Kük. However, *C. vallis-rosetto* K. Schum. var. *heterostachya* Kük. is now placed under *C. mannii* var. *friesiorum*.

Gehrke (2011: 77−81) discusses the circumscription of *C. manni*, *C. elgonensis, C. mildbraediana*, *C.vallis-rosetto*, *C. simensis*, *C. fischeri* and *C. ninagongensis*. Her conclusions are not the same as those of Escudero & Luceño (l.c.). She maintains 2 subspecies within *C. mannii*, viz. subsp. *mannii* and subsp. *thomasii*: But the synonyms are quite different from those cited by Escudero & Luceño. The details are not given here. *C. ninagongensis* is treated apart as a good species, but the synonym given, viz. *C. fischeri* K. Schum. var. *basiandra* Kük., belongs to *C. fischeri* subsp. *fischeri* according to Escudero & Luceño.

Tufted rhizomatous perennial herb 40−150 (−170) cm tall; stems often dark purplish spotted; leaves 10−60 cm long, 0,3−1 cm wide, keeled to plicate, edges scabrid, basal sheaths dark purplish; inflorescence 9−59 cm long, narrowly paniculate, of 4−13 spikes; terminal spike ovoid, 2−8 × 0,3−1,3 cm, sessile or with a peduncle to 3,5 cm long; lateral spikes terete-ovoid, 1−9 × 0,5−1 cm, arising singly or in pairs, peduncle 5−7 cm long; *glumes dark brown with a narrow yellowish midrib*, mucronate to aristate; utricles elliptic, 3,5−6 × 1−2 mm, narrowed into a beak 1−2 mm long.

Forest with swampy areas; open forest and bushland; edges of streams; swamps with *Lobelia wollastonii*; wet meadows; bogs; 2200−3900 m alt.

Variable in length of glumes and utricles.

Bioko/Fernando Poo (subsp. *mannii*).

Comprises 3 subspp.: – subsp. **mannii** [syn.: *C. boryana* Schkuhr var. *simplissima* Kük. and var. *minor* Boott (fig. in Boott, Illustr. Carex 3: pl. 348, 1862); *C. longipedunculata* K. Schum. var. *ninagongensis* Kük.; *C. simensis* Hochst. ex A. Rich. var. *ninagongensis* (Kük.) Kük.; *C. ninagongensis* (Kük.) Nelmes ex Robyns & Tournay] with stems 40−120 cm long, lateral inflorescence spikes 0,5−1 cm wide, female glumes pale purplish-red; – subsp. **friesiorum** (Kük.) Luceño & M. Escudero [bas.: *C. mildbraediana* Kük. var. *friesiorum* Kük.; syn.: *C. vallis-rosetto* K. Schum. var. *heterostachya* Kük.] with stems 42−100 cm long, lateral inflorescence spikes 0,6−1,1 cm wide, female glumes dark purplish-red, occurring in Kenya; – subsp. **thomasii** (Nelmes) Luceño & M. Escudero [bas.: *C. thomasii* Nelmes] with stems 100−150 cm long, leaves wide (> 7,5 mm), lateral inflorescence spikes 7 × 0,8−1 cm, female glumes purplish-red, utricles 5−6 mm long, occurring in Ethiopia, S. Sudan. – Specimens of *C. mannii* subsp. *mannii* may resemble *C. greenwayi* but the plants are smaller than the latter.

C. mildbraediana Kük., excl. var. *alpicola* Kük. (= *C. elgonensis*) and var. *friesiorum* Kük. (= *C. mannii* subsp. *friesiorum*). Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 290, 1955 (as *C. ramosipes*); Troupin, Fl. Rwanda 4: 430, 1988; Fl. Trop. E. Afr., Cyper.: 445, 2010, p.p. – Gehrke (2011) treats *C. mildbraediana* as well as *C. ramosipes* as synonyms of *C. vallis-rosetto*, although she places Rugege Forest, Rukarara, in Tanzania (specim. Mildbraed 966, holotype) and not in Rwanda. On the other hand, Escudero & Luceño (2011: 238−239, with map) maintain *C. mildbraediana* as a good species, citing *C. ramosipes* as a possible synonym; and they advice not to treat *C. ramosipes* as a synonym of *C. greenwayi*. However, they state that "more data are needed to elucidate if [it] might be considered an independent taxa [sic !] or a simple deviant form of *C. mildbraediana*". These authors also underline that the "putative isotype material of *Carex mildbraediana* J. Mildbraed 966 (K363486 photo !) comprises just a few utricles". And so does the possible isotype material of *C. ramosipes* (Humbert 7939, K363481 photo !).

syn.: *C. ramosipes* Cherm. (with doubt).

Tufted perennial rhizomatous herb 82−145 cm tall; stems very stout, smooth, densely dark purplish-red spotted-tinted towards base; leaves plicate, rigid, 16−65 cm long, 1,1−1,4 cm wide; sheaths dark purplish; inflorescence 25−58 cm long, of 5−21 spikes, with 0−3 male spikes at top and 5−20 androgynous lateral spikes; terminal spike terete, 1−8 × 0,4−1 cm, laterals 1−6,5 × 0,5−1,1 cm, dense-flowered, arising in groups of 3, or singly or in pairs, sometimes with a few short branches at base of the largest spikes; peduncle to 8 cm long; utricles 4,2−5,5 mm long, 1,2−1,7 mm ∅, brown with purplish speckels; beak 1−1,7 mm long, truncate or *bifid*.

Forest; swamp with *Lobelia mildbraedii* and *Ericaceae*; damp track sides; formations with *Hypericum revolutum*; 1910−3000 m alt.

C. modesti M. Escudero, Martín-Bravo & Jim. Mejías, non *C. modesta* J. Gay (= *C. disticha* Huds., in N Africa, Europe, Asia); Blumea 57: 145, 2012 (fig. p. 144, map p. 143).

syn.: *C.* spec. nov. sensu Escudero & M. Luceño in Anales Jard. Bot. Madrid 68: 239−240, 2011.

Perennial rhizomatous herb; rhizome *creeping*, long; stems 50−90 cm tall, trigonous, smooth, (yellowish) green, with dark purplish red spots; leaves 15−35 cm long, *5−11 mm* wide, plicate, *rigid*, *coriaceous*, margins revolute; sheaths *brown*, *reddish brown* to *purplish red*; inflorescence 28−49 cm long; sheath 5−7,5 cm long, inner side dark purplish red; spikes *7−13*, solitary; terminal one terete, 2,5−8,5 × 3−12 mm, sessile or with a peduncle to 1,2 cm long; utricles elliptic, 3,5−5 × 1,1−1,6 mm, beak 0,8−1,5 mm long, bifid.

Stream sides; peat bogs, 2750 m alt.

Near *C. vallis-rosetto*.

C. monostachya A. Rich., incl. var. *triquetrifolia* (Boeckeler) Kük.; Fl. Trop. E. Afr., Cyper.: 424, 2010; Backéus in Svensk Bot. Tidskr. 11: 231, 2017. — Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24/106: figs. 13, 14, 1963; Haines & Lye, Sedges & rushes E. Afr.: 370, 1983; Fl. Eth. & Eritrea 6: 503, 1997; Puff & Sileshi, Pl. Simen: 239, 2005 (in habitat); Gehrke (2011); 58.

syn.: *C. triquetrifolia* Boeckeler; *C. parasitica* Kunze, nom. nud.; *Uncinia digyna* Hochst. ex Steud., nom. superfl.

Perennial herb 12−70 cm tall with short creeping rhizome, the shoots shortly separated or forming dense tufts; stems *triangular*, *scabrid*, both fertile and sterile; leaves narrow, 10−30 cm × 1,5−4 mm; basal sheaths chestnut brown; inflorescence a *solitary terminal spike*, reddish brown, 1−4 cm long, 2−8 mm wide, with male flowers above and female below; glumes (light) *brown* with *broad hyaline margins*; utricles obovoid, 3,5−4 × 1,2−1,5 mm, glabrous, hidden by glumes; styles 2.

Bamboo and *Hagenia* forest; grassland in ericaceous belt; swamps, lakes and streams near glaciers; bogs; often dominating; at and above limit of trees and shrubs; 2400−4500 m alt.

Reported to form hybrid swarms with *C. runssoroensis*, particularly on Mt Elgon (fig. in Haines & Lye, o.c.: 371). Such plants can be difficult to distinguish as characters can be intermediate between these species. The hybrids have terete scabrid stems and short green leaf blades (Fl. Trop. E. Afr., Cyper.: 425, 2010). A recent study (Gizaw & al. in. Alp. Botany 126: 59−71, 2016) confirms that "putative hybrids from Mt Elgon were placed between the two species, but clustered with *C. runssoroensis* (bootstrap support 94 %)". *C. monostachya* is widespread in Ethiopia and eastern E. Africa, whereas *C. runssoroensis* (stems terete, leaves short or absent, utricles with scabrid hairs) is mainly western E. African.

"The samples of *C. monostachya* were divided into two genetic groups, one confined to the Simen Mts in northwestern Ethiopia… and one which was widespread, occurring in the Bale Mts in southeastern Ethiopia as well as in the East African mountains Mt Kenya, Mt Aberdare, and Mt Kilimanjaro" (Gizaw & al., o.c.: 63).

C. negrii Chiov.; Kew Bull. 39: 749, 1984. – Icon.: Thulin, Fl. Somalia 4: 146, 1995; Fl. Eth. & Eritrea 6: 509 fig. 5, 1997.

Perennial herb with a horizontal rhizome often producing stems at 1 cm intervals; stems 10−90 cm long, 1−2 mm ∅, triangular, angles scabrid, the larger part covered by leaf sheaths; leaves numerous, high up the stem; lower sheaths brownish, upper green, mostly glabrous; blades ± flat, 10−30 cm long, 2−3 mm wide, scabrid; inflorescence of 1−2 stalked or subsessile spikes from each of the uppermost sheaths; spikes 1−2,5 cm long, 3−4 mm ∅, with female flowers at base, male part above longer than female part; utricles obovate, 3-angled, 3,5−4 × 1,5 mm, beak 1−1,5 mm long; style with *3 long stigmas*.

Juniperus-Podocarpus forest, in open glades or meadows; 1500−2700 m alt.

Yemen (Wood, Handbook Yemen Flora: 333, 1997).

C. neochevalieri Kük. ex A. Chev.; Jaeger & Adam, Végét. vascul. Mts Loma 2: 215, 1981 (excl. syn. *C. echinochloe*); Lisowski, Fl. Rép. Guinée 1: 393, 2009; Onana, Vascul. pl. Cameroon…: 160, 2011.

Densely tufted perennial herb 45−100 cm tall; leaves ± as long as stems, coriaceous, 3−4−12 mm wide, margins scabrid; inflorescence to 20 cm long, paniculate; secondary panicles 5, single, open and rather *scanty*, elongate-pyramidal, long-pedunculate; spikes oblong, 6−8 mm long, androgynous; utricles longer than glumes, ellipsoid-trigonal, 4 mm long, *beak long*.

Lateritic plateaux (boval) with small secondary groves of shrubs 2−3 m tall; in acid black shallow soil on escarpments; bush with *Dissotis leonensis*; open forest with *Gaertnera, Mansonia* on granitic ledge; 1050−1450 m alt.

Not in Mali (confusion with Mali in Guinea).

Said to be near *C. spicatopaniculata* and *C. echinochloe*.

Wickens (Fl. Jebel Marra, Sudan Rep.: 161, 1976) cited "a poor specimen obviously close to *Carex echinochloë* Kunze and to *C. neo-chevalieri* Kükenthal, but more especially the latter…". Darbyshire & al. (Pl. Sudan & S. Sudan: 103, 2015) did not see this specimen. The identity of this plant in uncertain. "This group of numerous closely related forms needs revising for the whole of Africa" (Wickens, l.c.).

(**C. paniculata** L. subsp. *hansenii* Lewej. & Lobin, Senckenberg. Biol. 67: 440−446, 1987, incl. figs. and map); Molina & al. in Plant Syst. Evol. 301: 2421, 2015.

Tufted perennial herb 50−100−120 cm tall; leaves 3−5 mm wide; inflorescence elongate, laxly paniculate, 10−23 cm long; glumes straw-coloured; utricles ovate-lanceolate, 3,8−4,2 × 1,4−1,8 mm, narrowed into a winged beak 1,3−1,5 mm long.

Damp places, seepage area in rock face; 800−1200 m alt.

Endemic to Sto. Antão, Cape Verde Isl. – Not mapped by us.

C. papillosissima Nelmes; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 438, 2010; Gehrke (2011): 70. – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24/106: fig. 29, 1963; Haines & Lye, Sedges & rushes E. Afr.: 379, 1983.

Tufted perennial herb 60−120 cm tall with many basal leaves; stems triangular; leaf blades 20−80 cm long, 0,4−1 cm wide; inflorescence a single pedunculate slender spike from each of the upper 3−5 leaf sheaths, usually pendulous, 4−11 × 0,4−0,6 cm; utricles ovate, 2−2,8 × 1,5−2 mm, incl. a *0,2−0,5 mm long beak*, *surface densely papillose*.

Open forest; *Syzygium* relict forest patches in valley bottoms; 1650−2400 m alt.

Very closely related to *C. madagascariensis* Boeckeler which has slightly less densely papillose utricles, and narrower leaves.

Perhaps also in SE-most Zaire (Gehrke, l.c.).

C. peregrina Link; Thulin in Nord. J. Bot. 1: 521, 1981; Fl. Trop. E. Afr., Cyper.: 426, 2010; Gehrke (2011): 58−59; Koopman, Carex Europaea 1: 232, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 372−373, 1983; Fl. Eth. & Eritrea 6: 503, 1997.

syn.: *C. guthnickiana* J. Gay; *C. macrostylon* Lapeyr. var. *peregrina* (Link) L. H. Bailey ex Trel. and var. *guthnickiana* (J. Gay) C. B. Clarke; *C. sagittifera* Lowe

Very fine-leaved tufted perennial herb 20−30 cm tall with c. 0,5 mm wide stolons; basal sheaths brown; leaf blades 1−20 cm long, 0,5−1,5 mm wide, appearing filiform when margins incurved; inflorescence a *solitary*, *loose*, *terminal* spike 2−3 cm long, 2−4 mm ∅, with *4−10 female flowers below*; glumes *2−5 mm* long; utricles with 2 prominent longitudinal ribs *6−7 mm* long, incl. narrow beaks 2−2,5 mm long; styles 2.

Forest with *Podocarpus*, *Hagenia*; mossy ground in giant heath zone; wet swampy grassland along stream; 2300−3300 m alt.

Azores, Madeira, Canary Isl. – Kenya – Uganda ? – Tanzania – Ethiopia: a very disjunct area (cf. Nord. J. Bot. 1: 521−522, 1981; Andrus & al., Taxon 53: 333−346, 2004). – Madagascar ?

"Easily recognized by the presence of only a few… flowers per spikelet and the thin, …leaves" (Gehrke, l.c.).

C. petitiana A. Rich.; Fl. W. Trop. Afr., ed. 2, 3/2: 347, 1972 (as *C. preussii*); Haines & Lye, Sedges & rushes E. Afr.: 382−383, 1983, p.p., excl. syn. *C. fischeri*, *C. ninagongensis*; Troupin, Fl. Rwanda 4: 430, 1988, p.p., excl. syn. *C. ninagongensis*; Fl. Eth. & Eritrea 6: 510, 1997; Cable & Cheek, Pl. Mt Cameroon: LXVII, 1998 (as *C. preussii*); Chapman & Chapman, Forests Taraba & Adamawa States, Nigeria: c49, 2001 (as *C. preussii*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005, p.p., excl. syn. *C. ninagongensis*; Gereau & al., Lake Nyasa florist. checklist: 45, 2012; Onana & Cheek, Red Data Book flow. pl. Cameroon: 364, 2011 (as *C. preussii*); Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24/106: figs. 36, 37, 1963 (as *C. cuprea*); Fl. Trop. E. Afr., Cyper.: 440, 2010.

We follow Escudero & Luceño (2011: 240−242, with maps). – In Fl. Trop. E. Afr., Cyper.: 439−442, 2010, Verdcourt treated *C. petitiana* in a broad sense, including synonyms which now are to be found under *C. fischeri* and *C. mannii* (See under these species above). He was "unable to separate *C. preussii* from East African material of the *cuprea* form of *C. petitiana*… There are a number of confusing statements in the literature concerning the structure of the spikelets in *C. petitiana*… Nelmes has introduced some additional confusion…". In Verdcourt's treatment the following synonyms refer to *C. petitiana*: *C. aethiopica* var. *stolonifera*, *C. longipedunculata* incl. var. *preussi*, and subsp. *cuprea*, *C. preussii* incl. var. *camerunensis*, *C. cuprea*, and *C. simensis* var. *stolonifera.*

Gehrke (2011: 78−79) distinguished 2 species, viz. *C. preussii* and *C. petitiana*, giving a list of synonyms of the latter, incl. *C. simensis* var. *mauensis* Kük. as a "syn. nov.". However the latter name should belong in *C. fischeri* according to Escudero & Luceño (2011: 232).

Perennial tussock-forming herb 40−130 cm tall with a (usually) short rhizome; stems stout, smooth, trigonous; leaves 12−60 cm long, 0,4−1 cm wide, keeled to folded, rigid; sheaths (reddish-) brown; inflorescence 7−43 cm long of 3−9 erect or drooping spikes arising singly at nodes, with the male part of each increasingly longer upwards the stem; lateral spikes ± ellipsoid, 1−6 × 0,7−1,2 cm, dense-flowered; the terminal spike clavate, 3,2−6,5 × 0,5−1,2 cm; peduncles 1−12,5 cm long; glumes 5−9 mm long, dark brown to dark reddish-brown with straw-coloured midrib, mucronate or acuminate; utricles ellipsoid-trigonous, 3,7−6,5 × 1,2−2,5 mm, tapering to a deeply bifid beak 1−1,8 mm long.

Open and wet habitats, often along streams or paths; swamps, swampy ditches, bogs; wet meadows; 1800−3600 m alt.

Comprises 2 subspp.: – subsp. **petitiana** [syn.: *C. anomala* Steud. 1855, non Pall. ex Kunth 1808, nec Boott ex Perry 1856 nec Janka 1860; *C. aethiopica* Schkuhr var. *stolonifera* Boeckeler; *S. simensis* Hochst. ex A. Rich. var. *stolonifera* (Boeckeler) Kük.; *C. longipedunculata* K. Schum., incl. var. *preussi* (K. Schum.) Kük. and subsp. *cuprea* Kük.; *C. preussii* K. Schum., incl. var. *camerunensis* Nelmes; *C. cuprea* (Kük.) Nelmes], with solitary spikes at nodes, and female glumes (reddish) brown, in N part of range; – subsp. **attenuata** (Kük.) Luceño & M. Escudero [bas.: *C. longipedunculata* K. Schum. var. *attenuata* Kük.], "well differentiated" plants, very stout, with at least some spikes arising in pairs and female glumes reddish brown to purplish red, in Malawi – Zimbabwe.

C. phragmitoides Kük.; Haines & Lye, Sedges & rushes E. Afr.: 384, 1983, incl. *C. cognata* var. *abyssinica*; Fl. Eth. & Eritrea 6: 511, 1997 (as *C. cognata* var. *abyssinica*); Fl. Trop. E. Afr., Cyper.: 447−448, 2010, incl. *C. cognata* var. *abyssinica*; Gehrke (2011): 74−75. – Icon.: Haines & Lye, o.c.: 384.

syn.: *C. abyssinica* Chiov.; *C. cognata* Kunth var. *abyssinica* (Chiov.) Lye; *C. taylorii* Nelmes

Tufted leafy perennial herb 40−90 cm tall with creeping woody rhizome; leaves overtopping the stems, 6−12 mm wide, flat; sheaths brown; inflorescence of 4−5 clustered dense spikes 4 cm long, 4 mm ∅; glumes (*dark*) *brown*, oblong, 5,5−7 mm long including the 2−4,5 mm green or reddish brown *excurrent scabrid-hairy awn*; utricles much shorter than glumes, ellipsoid, 3−4 mm long, sparsely hispid.

Bogs, marshes in ericaceous zone; streamsides; crater lake edges; 2500−3100 m alt.

In habit resembling *C. cognata*. – Cf. also Archer & Balkwill in Bothalia 42: 190−193, 2012.

C. rhodesiaca Nelmes; Gehrke (2011): 69−70, 54 (fig.). – Icon.: Gordon-Gray, Cyper. Natal (Strelitzia 2): 38 fig. 13/D-F, 1995 (utricle; as *C. austro-africana*); Cook, Aquat. & wetland pl. south. Afr.: 85: 2004 (idem); Bot. J. Linn. Soc. 166: 54 fig 2/G, 2011.

syn.: *C. austroafricana* (Kük.) Raymond; *C. cernua* Boott var. *austroafricana* Kük.; *C. phacota* sensu C. B. Clarke, non Spreng.

Perennial loosely caespitose herb shortly stoloniferous; stems 20−47−65 cm tall, strong, sharply 3-angled; leaf blades 10−50 cm long, 5−7 mm wide, flat, rigid, pale yellow-green, margins scabrous; sheaths rusty, scarcely reticulate; inflorescence of 3−7(−11) spikes, each cylindric, 1,5−9 cm long, the terminal spike male, laterals females with some male flowers towards tip, stalked, nodding; utricles *flat*, ovate, 2,5−4 mm long, *green, yellow or white*, *turning brownish green when dry*, almost without a beak and teeth (abruptly beaked if compared with *C. cernua*); stigmas 2.

Seasonally wet habitats; streamlets; muddy pockets of rocks, full of water; sometimes rooted in shallow still or flowing water; occasionally fringing *Typha* reed-beds in deeper water; 610−2225 m alt.

S. Africa, Lesotho, Swaziland.

Commonly known as *C. austroafricana*.

The rust fungus *Uredo caricis-rhodesiaca* Gjaerum is described on plants in Zimbabwe (Lidia 4/5: 134−135, 1999).

Also reported from Cameroon ?

C. runssoroensis K. Schum.; Fl. Trop. E. Afr., Cyper.: 424−425, 2010; Gehrke (2011): 59−60; Gizaw & al. in Alp. Bot. 126: 59−71, with maps p. 61, 2016. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 283, 285, 1955; Haines & Lye, Sedges & rushes E. Afr.: 371, 1982; Troupin, Fl. Rwanda 4: 427, 1988; Backéus in Svensk Bot. Tidskr. 111: 231, 2017 (photo. tussocks in habitat).

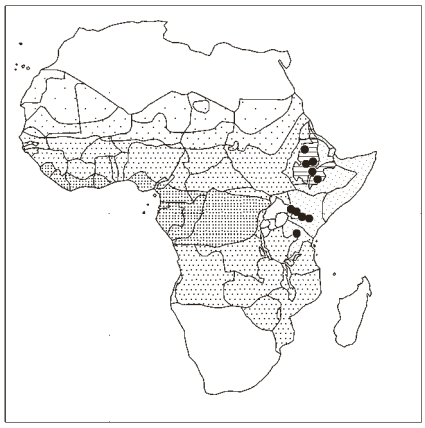
syn.: *Uncinia runssoroensis* (K. Schum.) Chiov.

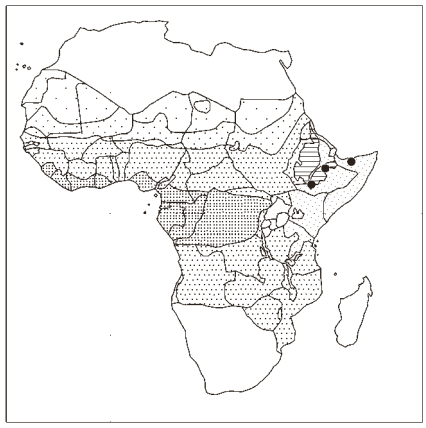
Perennial herb forming high and stilted tussocks 0,3−1,5 m tall, to > 1 m ∅, rhizome sometimes distinctly creeping; stems *round* below the spike, *glabrous*, 20−60 cm long, remaining green when fruiting; leaves scarcely developed, or *sheaths with brown blades 0,5−5 cm long*, smooth; basal sheaths dark chestnut brown; inflorescence *a solitary terminal spike*, dark chestnut brown, 2−5 cm long, to c. 1 cm ∅, male flowers above, females below; glumes spreading, *dark chestnut brown* without hyaline margins; utricles compressed, ± oblong, 3,5−5 × 1,2 mm, beak < 1 mm long, hidden by the glumes. – Plant bases often slimy from slime-forming bacteria or algae.

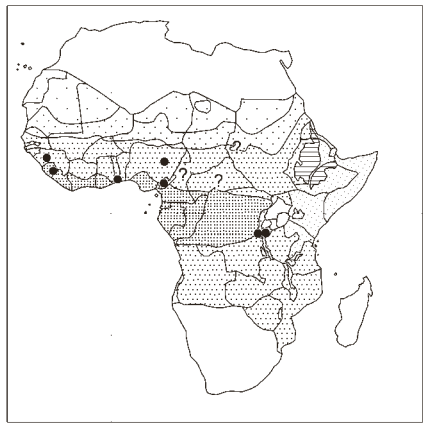
Swamps; bogs; lake sides; ericaceous belt and giant *Lobelia*, *Alchemilla* zone; alpine moorland; often on exposed rocks and tarn shores; in wide pure stands in depressions and on black mud; 2700−4400 m alt.

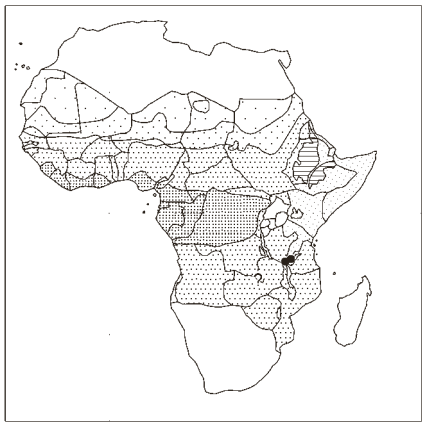
Comprises 2 vars. (but according to Gizaw & al., l.c., "it seems reasonable to recognize them at the subspecies level"): – var. **runssoroensis**, densely tufted plants with thicker stems and brown to blackish margins of female bracts, in E Zaire – Rwanda – Uganda – Kenya (Mt Elgon); – var. **aberdarensis** Kük. in Kenya: Aberdare, Mt Elgon; with thin stems and hyaline margins of female bracts.

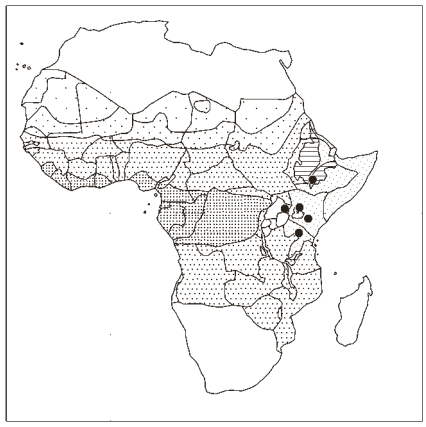
Putative hybrids with *C. monostachya* have been reported from Elgon, Aberdare and Kenya, described by Haines & Lye, o.c.: 270, fig. p. 371, and then accepted by Verdcourt (Fl. Trop. E. Afr., Cyper.: 425, 2010). Gizaw & al. tested whether there is a "genetic signature of hybridization in Mt Elgon plants". They clearly distinguished the two species. The "putative hybrids were placed between *C. runssoroensis* and *C. monostachya*", and indicated a

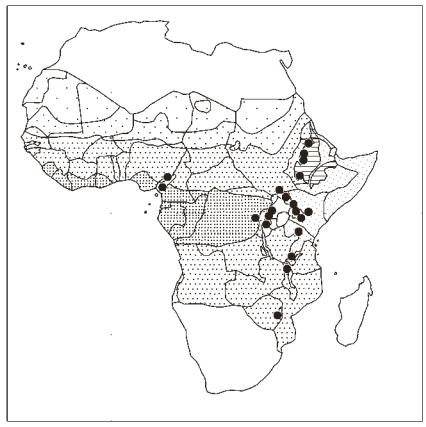

Carex monostachya

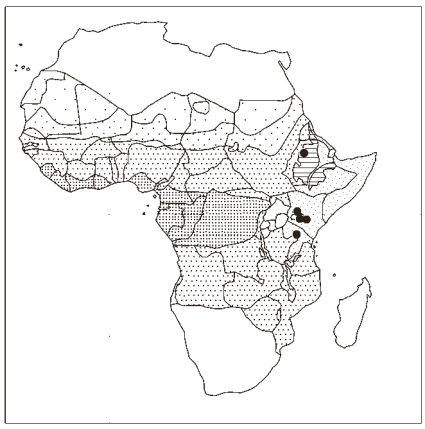

Carex negrii

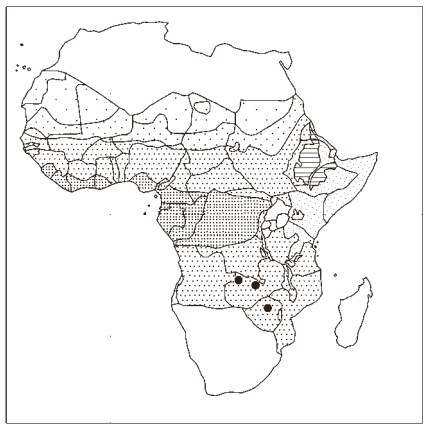

Carex neochevalieri

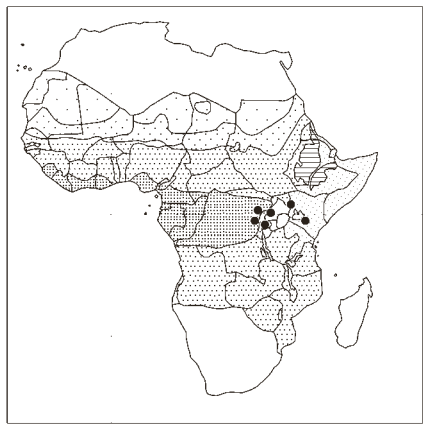

Carex papillosissima

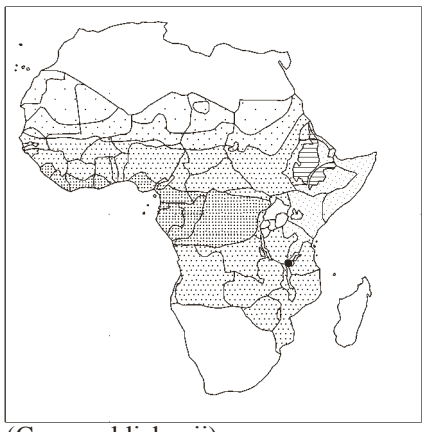

Carex peregrina

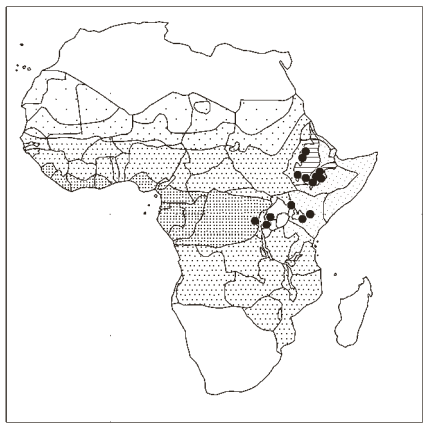

Carex petitiana

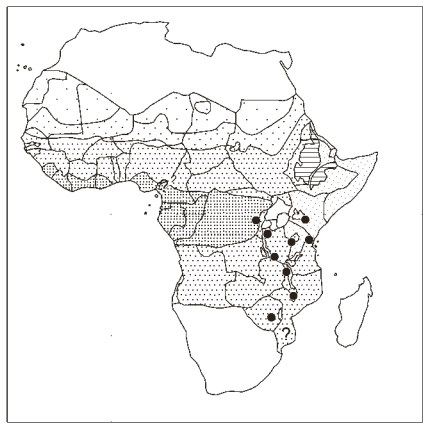

Carex phragmitoides


Carex rhodesiaca


Carex runssoroensis


(Carex schliebenii)


Carex simensis


Carex spicato-paniculata

mixed ancestry for the populations from Mt Elgon, but "clustered with *C. runssoroensis*".

(**C. schliebenii** Podlech); Gehrke (2011): 85−86.

Perennial herb with short woody rhizome; stems 70−85 cm tall, obtusely trigonous, leafy; leaves 2−4 mm wide, ash-grey-green, strongly rolled back, scabrous above; basal sheaths brownish purple; inflorescence paniculate; secondary panicles 3−8, paired, subpyramidal, pedunculate, each with 1, rarely 2 spikes; spikes 8−12 mm long, androgynous, male part much shorter than the female; utricles longer than glumes, 4 mm long, the beaks half as long; stigmas 3.

Forest understorey in river basin.

Easily recognised by the narrow scabrous, rolled-back, whitish grey-green leaves, and dark red leaf-bases. Gehrke (2011: 85) who examined the type specimen, remarks that the utricles are *5* mm long with a distinct 2 mm long beak and prominent teeth.

Known only from the type collected in 1931 (Schlieben 598; Tanzania, Lupembe).

Taxonomic status uncertain. Not figuring in Fl. Trop. E. Afr., Cyperaceae (2010).

C. simensis Hochst. ex A. Rich., incl. var. *nemorum* Chiov., var. *longistipitata* Kük. and var. *lanuriensis* De Wild., but *excl.*var. *mauensis* Kük. (= *C. fischeri* subsp. *fischeri*), var. *ninagongensis* (Kük.) Kük. (= *C. mannii* subsp. *mannii*), and var. *stolonifera* (Boeckeler) Kük. (= *C. petitiana* subsp. *petitiana*). Discussed by Escudero & Luceño in Anales Jard. Bot. Madrid 68: 242−244, 2011 (map p. 243). – Robyns & Tournay, Fl. Parc. Natl. Albert 3: 294, 1955; Puff & Sileshi, Pl. Simen: 238, 2005; Fl. Trop. E. Afr., Cyper.: 442, 2010, p.p. excl. syn. *C. mildbraediana* Kük. var. *alpicola* Kük. (= *C. elgonensis*); Gehrke (2011): 79−80, 77 (*C. mannii* p.p. quoad syn. *C. simensis* var. *lanuriensis*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 383, 1983; Fl. Eth. & Eritrea 6: 510, 1997 [in text excl. syn.*C. cuprea* (Kük.) Nelmes (= *C. petitiana* subsp. *petitiana*)].

syn.: *C. karisimbiensis* Cherm.

Tussock-forming rhizomatous perennial herb 15−80 cm tall; stems trigonous, smooth; basal leaf sheaths short, purplish-blackish; blades 6−31 cm long, 0,3−1,2 cm wide, plicate and keeled, very rigid; inflorescence 4−43,5 cm long, of 5−12 erect or slightly drooping spikes born singly or paired at nodes, the upper ± sessile, male, the lower female, pedunculate, the stalks 1−25 cm long; spikes 1−10 cm long, 0,4−1 cm ∅; glumes blackish with *broad yellowish* or *greenish keel area enclosing midrib and 2 lateral ribs*; *utricles* speckled, *4−7 mm long* incl. beak 1−1,5 mm long.

Swampy areas in grassland and moorland; montane forest in *Hagenia*, *Hypericum* alpine belt; moist ground near streams; ericaceous scrub; moist forest, in vertical rock faces; 1850−4300 m alt.

C. spicato-paniculata Boeckeler ex C. B. Clarke; Robyns & Tournay, Fl. Parc Natl. Albert 3: 286, 1955; Fl. Trop. E. Afr., Cyper.: 431−432, 2010; Gehrke (2011): 87; Gereau & al., Lake Nyasa florist. checklist: 45, 2012. – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24/106: fig. 23, 1963; Haines & Lye, Sedges & rushes E. Afr.: 374, 1983; Gordon-Gray, Cyper. Natal: 41 fig. 15/G-I, 1995; Fl. Eth. & Eritrea 6: 505, 509, 1997; Burrows & Willis, Pl. Nyika Plateau, Malawi: 296, 2005.

syn.: *C. johnstonii* Boeckeler var. *brevifructus* Kük., nom. nud.; *C. zuluensis* C. B. Clarke var. *glaberrima* Kük., nom. in sched.

Perennial tussock-forming herb 30−120 cm tall with short thick rhizome; stems trigonous, glabrous, leafy; leaf blades 20−50 cm long, 0,5−1,3 cm wide, flat or plicate, veins and margins scabrid; inflorescence of 1 terminal and 1−2 lateral panicles of spikes from each of the upper leaf sheaths, *green and brown*, axes and branchlets densely pubescent; each panicle to 8 × 3−5 cm; spikes 5−10 mm long, 4−5 mm ∅, bisexual, female flowers below, male above; glumes red-brown, spreading; utricles ellipsoid, 3,5−4 mm long incl. beak (c. 1,5 mm long), only *slightly curved*, beak and upper part of utricle *shortly scabrid* hairy; stigmas 3.

Open to dense forest; forest edges; gallery forest; forest of *Podocarpus, Rapanea*; *Brachystegia/Myrsine* woodland; old termite mounds; 900−3000 m alt.

S. Africa, Swaziland, Lesotho; Comoros, Mascarenes ?, Madagascar ?

Confusion with *C. chlorosaccus* in C Ethiopia (Menagesha Forest, SU) reported by Fl. Eth. & Eritrea 6: l.c. Both taxa occur there and the relationship between them is worth studying.

According to Gehrke (l.c.) *C. spicato-paniculata* is closely related to *C. tricholepis*. It is often confused with *C. zuluensis* growing in the same habitats, and with *Schoenoxiphium rufum* Nees.

A rust fungus, *Uredo grootboschensis* Gjaerum, has been described from S. Africa (N Transvaal) in Lidia 4/5: 136, 1999.

C. steudneri Boeckeler; Puff & Sileshi, Pl. Simen: 238, 2005; Fl. Trop. E. Afr., Cyper.: 435, 2010, p.p., excl. synonyms (See Note below); Gehrke (2011): 83; Gereau & al., Lake Nyasa florist. checklist: 45−46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 377, 1983; Fl. Eth. & Eritrea 6: 506, 1997.

syn.: *C. wahlenbergiana* Boott var. *schimperi* Boott

Tufted robust herb 40−70 cm tall with short rhizome; stems obtusely trigonous, stiff, glabrous; leaf blades flat, 5−30 cm long, *0,3−1,2 cm wide*, midrib and margins strongly scabrid; *inflorescence dense*, *well defined in outline and uninterrupted*, of several narrow dense, often pendulous brown panicles, 1−2 from each of the uppermost sheaths; spikes lanceolate, 6−15 × 1−2 mm; utricles 5−6 mm long incl. beak (2 mm long), ridged, *densely scabrid on beak and major ribs*.

Grassland, well-drained slopes in grassland; bushland; rocky places; ericaceous scrub; forest edge; 2000−3800 m alt.

In Kenya only Cherangani Hills.

Note: In Fl. Trop. E. Africa, Cyper., l.c., Verdcourt took "a broad view of this species which probably will not be accepted in South Africa". Gehrke (2011: 83) noted that Verdcourt "stated, correctly, that the material currently identified as *C. steudneri* probably represents two species and a detailed study of the material is needed… he suggested that… *C. zuluensis* should be included into *C. steudneri*, with which I do not agree. The two species are similar, but can be distinguished by panicles which are dense, well defined in outline and uninterrupted in *C. steudneri*, as opposed to open, lax, often not well defined in outline and more or less interrupted in *C. zuluensis*". – We have taken this view in the present compilation.

A new species, *C. socotrana* Řepka & Maděra, morphologically similar to *C. steudneri*, was desribed in Novon 25: 467 (−472), 2017; from Socotra.

C. tricholepis Nelmes; Podlech in Mitt. Bot. Staatssamml. München 4: 124, 120 (as *C. angolensis*), 1961; Gehrke (2011): 85. – Icon.: Ber. Schweiz. Bot. Ges. 63: 351, 1953 (as *C. nelmesii*).

syn.: *C. nelmesii* H. E. Hess

Perennial herb to 105 cm tall with short rhizome; stems obtusely trigonous; leaves shorter than inflorescence, *8−11 mm wide*, canaliculate, scabrid, with many distinct nerves; sheaths long, brown or yellowish; inflorescence narrowly paniculate, interrupted; secondary panicles 8−10, *lax*, subpyramidal, usually arising in pairs; branches pubescent, each with 1−3−6 spikes; spikes bisexual, 1−1,5 cm long, male part much shorter than female; *glumes* ovate, pale, aristate, *as long as utricles*; *utricles* 5 mm long, *densely hispid*, with many nerves, beak 1,5 mm long; stigmas 3.

Brachystegia woodland; moist slope in closed forest; 1100 m alt.

Differs from *C. brassii* in width of leaves (3−4 mm), hairiness of utricles (glabrous except for beak), and glumes much shorter than utricles; and differs from *C. angolensis* in width of leaves (5−8 mm), hairiness of utricles (glabrous except for beak), and glumes much shorter than utricles.

Also resembling *C. spicato-paniculata* but differs from the latter by the more lax secondary panicles, scales pale aristate, and the more densely pubescent utricles. – Cf. also **C. angolensis** above.

C. uluguruensis Luceño & M. Escudero, Anales Jard. Bot. Madrid 68: 244−245, 2011 (with map).

Perennial tufted herb 50−90 cm tall; stems stout, trigonous, smooth, (yellowish) green; leaves 13−26 cm long, 0,7−0,9 cm wide, keeled to plicate, very rigid, coriaceous, margins revolute, ± scabrid; sheaths reddish-brown to purplish-red; inflorescence 8,5−20,5 cm long, of 5−8 spikes, heteromorphic, terminal spike male; female spikes lateral, 4−7, dense-flowered, arising singly or in pairs, each 1−3,5 cm long, 0,4−1 cm ∅; glumes dark purplish red, midrib wide and straw-coloured, acuminate (acumen 1−2 mm long); utricles ellipsoid-trigonous, straight, 4,3−5 mm long, veins not prominent, tapering into the beak 1−1,6 mm long.

Hill in savanna, marshy grassland; 2400 m alt.

Known only from the type collected in 1933 (Schlieben 3516).

Similar to *C. mildbraediana* from which it differs by its narrower leaves and spikes borne singly or in pairs.

Occurs in the Uluguru Mts, Tanzania, where only *C. vallis-rosetto* belonging to the same species group, is present. The two are "clearly different".

C. vallis-rosetto K. Schum., excl. var. *purpurea* Kük. and fa. *ramosa* Kük. (both *C. greenwayi*) and excl. var. *heterostachya* Kük. (= *C. mannii* subsp. *friesiorum*); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 75, 2006 (as *C. cyrtosaccus*); Fl. Trop. E. Afr., Cyper.: 443−444 (*C. vallis-rosetto* p. min. p.; cf. *C. greenwayi* above), 444 (*C. cyrtosaccus*); Gehrke (2011): 81−82, p. min. p. quoad syn. *C. cyrtosaccus*; cf. *C. greenwayi, C. mannii, C. mildbraedii* above); Escudero & Luceño in Anal. Jard. Bot. Madrid 68: 244−245, 2011 (with map); Gereau & al., Lake Nyasa florist. checklist: 45, 2012 (as *C. cyrtosaccus*). – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 24: fig. 35, 1963 (as *C. cyrtosaccus*); Haines & Lye, Sedges & rushes E. Afr.: 382, 1983 (idem).

syn.: *C. cyrtosaccus* C. B. Clarke; *C. vallis-rosetto* var. *cyrtosaccus* (C. B. Clarke) Kük. in sched. B.

Tufted perennial herb with thick rhizome, 50−215 cm tall; stems trigonous, smooth, very stout, base densely dark purplish-red spotted like the basal leaf sheaths; leaf blades 25−76 cm long, 0,8−1,3 cm wide, plicate, margins revolute and ± scabrid; inflorescence 14 – c. 100 cm long, medium brown, of 7−22 spikes, 0−6 male spikes at top and up to 17 female or androgynous spikes; spikes terete, sessile or stalked (peduncles 3−6 cm long), 1−12 × 0,7−1,1 cm, densely flowered, often arising in pairs or groups of 3, frequently with some short branches at base of the largest spikes; utricles ellipsoid, 4−5,5 × 1,2−1,8 mm,

greyish-green speckled with purplish-red, *curved*, narrowed into a beak 1−2 mm long.

Damp or swampy places in forest; bogs and streamsides in *Hagenia* forest and grassland; 1750−2700 m alt.

C. cyrtostachys in Fl. Brit. India 6: 714, 1894, is a typographical error for *C. cryptostachys* Brongn. 1832 (cf. Fl. China 23: 317, 2010).

Near *C. modesti* (Martín-Bravo & al. in Blumea 57: 145, 2012).

C. zuluensis C. B. Clarke, excl. var. *glaberrima* Kük. (= *C. spicato-paniculata*); Podlech in Mitt. Bot. Staatssamml. München 4: 120, 1961 (as *C. huttoniana*); Fl. Trop. E. Afr., Cyper.: 435−436, 2010, under *C. steudneri* Boeckeler p.p., quoad synonyms; Gehrke (2011): 83. – Icon.: Boott, Ill. Carex 2: pl. 247−248, 1860; Schönland in Bot. Surv. S. Africa Mem. 3: pl. LXXIX, 1922; Gordon-Gray, Cyper. Natal: 41 fig. 15/J-L, 1995 (utricle).

syn.: *C. huttoniana* Kük.; *C. condensata* sensu C. B. Clarke in Fl. Trop. Afr. 8: 521, 1902, non Nees

Perennial robust herb c. 60−100 cm tall with short woody rhizome; stems trigonous, smooth; leaves shorter than stems, 6−12 mm wide, glabrous, coriaceous, margins scabrid; *inflorescence* 20−40 cm long, oblong, of many panicles, *open, lax, often not well defined in outline and ± interrupted* (compared with *C. steudneri*); secondary panicles 10−14 arising in pairs from each of the uppermost leaf sheaths, peduncles scabrid; spikes androgynous, oblong, 8−10 mm long, glumes lanceolate, acuminate; utricles elliptic, flattened, 12−15-veined, distally scabrid, c. 5 mm long incl. a long straight beak (1,5−2 mm); stigmas 3. — "Dissection of the … utricles is essential if confusion with *C. spicato-paniculata* and species of *Schoenoxiphium* is to be avoided"; Gordon-Gray o.c.: 43.

Swampy places; grassy mountain slopes; open grassland; stream banks; 500−2100 m alt.

S. Africa, Lesotho, Swaziland.

In Fl. Trop. E. Afr., Cyper. (l.c.) Verdcourt took a broad view of *C. steudneri*, including *C. zuluensis* "which probably will not be accepted in South Africa". He noted that "much of the material from S Tanzania has smaller 5−6 mm long utricles which are glabrous save for a few scabrid hairs on the margins of the beak or scattered elsewhere … All the material [from Ethiopia S-wards to S. Africa] however has the same habit and general appearance".

A rust fungus *Uredo caricis-zuluensis* is described by Gjaerum (Lidia 4/5: 135, 1999) on *C. zuluensis* from Zimbabwe, Inyanga Distr.

SYNONYMS:

Carex abyssinica Chiov. = **Carex phragmitoides**
acutatiformis H. E. Hess = **C. cognata**
aethiopica Schkuhr var. *stolonifera* Boeckeler = **C. petitiana** subsp. **petitiana**
anomala Steud. 1855, non Pall. ex Kunth 1808, nec Boott ex Perry 1856, nec Janka 1860 = **C. petitiana** subsp. **petitiana**
austro-afghanica Raymond = **C. divisa**
austroafricana (Kük.) Raymond = **C. rhodesiaca**
bolusii C. B. Clarke = **Schoenoxiphium sparteum**
boryana Schkuhr var. *minor* Boott and var. *simplicissima* Kük. = **Carex manni** subsp. **mannii**
buchananii C. B. Clarke 1894, nom. nud. = **Schoenoxiphium rufum**
burchelliana Boeckeler var. *leiocarpa* Schweinf. in sched. = **Carex distans** subsp. **distans**
cernua Boott var. *austroafricana* Kük. = **C. rhodesiaca**
chaetophylla Steud. = **C. divisa**

coarctata Boott = **C. divisa**
cognata Kunth var. *abyssinica* (Chiov.) Lye = **C. phragmitoides**
cognata var. *congolensis* (Turrill) Lye = **C. cognata**
condensata sensu C. B. Clarke 1902, non Nees = **C. zuluensis**
conferta Hochst. ex A. Rich. var. *leptosaccus* sensu Fl. Rwanda 4: 429, 1988, non (C. B. Clarke) Lye = **C. lycurus**
conferta var. *lycurus* (K. Schum. ex Engl.) Lye = **C. lycurus**
congolensis Turrill = **C. cognata**
cuprea (Kük.) Nelmes = **C. petitiana** subsp. **petitiana**
cyrtosaccus C. B. Clarke = **C. vallis-rosetto**
densenervosa Chiov. = **Schoenoxiphium schimperianum**
diluta M. Bieb. var. *bottae* C. B. Clarke ex Blatter = **Carex distans** subsp. **distans**
distans L. fa. *sinai* (Boott) Boeckeler = **C. distans** subsp. **distans**
distans fa. *sinaica* (Nees in Steud. 1855) Kük. = **C. distans** subsp. **distans**
distans var. *sinaica* (Nees in Steud.) Gehrke = **C. distans** subsp. **distans**
divisa subsp. *chaetophylla* (Steud.) Nyman, and var. *chaetophylla* (Steud.) Daveau = **C. divisa**
drakensbergensis C. B. Clarke = **C. cognata**
dregeana Kunth, incl. var. *major* C. B. Clarke = **Schoenoxiphium sparteum**
echinochloe Kunze var. *chlorosaccus* (C. B. Clarke) Kük. = **Carex chlorosaccus**
echinochloe var. *nyasensis* (C. B. Clarke) Kük. = **C. echinochloe** subsp. **nyasensis**
erythrorrhiza Steud. 1855, non Boeckeler 1875 = **C. conferta**
erythrorrhiza Boeckeler var. *curva* Chiov. = **C. divisa**
erythrorrhiza var. *scabrida* Kük. = **C. lycurus** subsp. **scabrida**
esenbeckiana Boeckeler = **Schoenoxiphium sparteum**
filicina Nees var. *ceylanica* sensu Peter 1938, non Kük. = **Carex castanostachya**
fischeri K. Schum. var. *basiandra* Kük. = **C. fischeri** subsp. **fischeri**
guthnickiana J. Gay = **C. peregrina**
hirtella (Sw.) J. F. Gmel. = **Scleria hirtella**
huttoniana Kük. = **Carex zuluensis**
indica Schkuhr 1801, non Wahlenb. 1860 = **Schoenoxiphium sparteum**
indica J. Koenig ex Willd. 1805, non L. 1771, etc. = **Scleria tessellata** var. **tessellata**
johnstonii Boeckeler var. *brevifructus* Kük., nom. nud. = **Carex spicato-paniculata**
karisimbiensis Cherm. = **C. simensis**
koestlinii Hochst. ex Steud. = **C. conferta**
koestlinii var. *curva* Chiov. = ?
koestlinii var. *minor* Boott = **C. erythrorrhiza**
kuekenthalii K. Schum. ex C. B. Clarke 1906, non Dörfl. ex H. Zahn = **C. johnstonii**
leptocladus C. B. Clarke = **C. chlorosaccus**
leptosaccus C. B. Clarke = **C. conferta**
lithosperma (L.) L. = **Scleria lithosperma**
longipedunculata K. Schum., incl. subsp. *cuprea* Kük., and var. *preussii* (K. Schum.) Kük. = **Carex petitiana** subsp. **petitiana**
longipedunculata var. *attenuata* Kük. = **C. petitiana** subsp. **attenuata**
longipedunculata var. *ninagongensis* Kük. = **C. mannii** subsp. **mannii**
longipedunculata fa. *recedens* Kük. = **C. fischeri** subsp. **recedens**
ludwigii (Hochst.) Luceño & Martín-Bravo = **Schoenoxiphium rufum**
macrostylon Lapeyr. var. *guthnickiana* (J. Gay) C. B. Clarke and var. *peregrina* (Link) L. H. Bailey ex Trel. = **Carex peregrina**
mildbraediana Kük. var. *alpicola* Kük. = **C. elgonensis**
mildbraediana var. *friesiorum* Kük. = **C. mannii** subsp. **friesiorum**
milbraediana sensu Napper 1963, p.p., non Kük. = **C. bequaertii**
mossii Nelmes = **C. bequaertii** subsp. **mossi** (S. Africa)
nelmesii H. E. Hess = **C. tricholepis**
ninagongensis (Kük.) Nelmes ex Robyns & Tournay = **C. mannii** subsp. **mannii**
nyasensis C. B. Clarke = **C. echinochloe** subsp. **nyasensis**
ovata Burm. f., non Merino = **Abildgaardia ovata**
parasitica Kunze, nom. nud. = **Carex monostachya**
petitiana sensu auctt., non A. Rich. = **Carex bequaertii**
phacota sensu C. B. Clarke, non Spreng. = **C. rhodesiaca**
poiformis (Retz.) J. F. Gmel. = **Scleria poiformis**
poiretii J. F. Gmel. = **Fuirena pubescens** var. **pubescens**
preussii K. Schum., incl. var. *camerunensis* Nelmes = **Carex petitiana** subp. **petitiana**
pseudocyperus L. var. *cognata* (Kunth) Boott = **C. cognata**
pseudosphaerogyna Nelmes = **C. cognata**
pubescens Poir. = **Fuirena pubescens**
ramosipes Cherm. = **Carex** ? **mildbraediana**
retrorsa Nees 1835, non Schweinitz 1824 = **C. cognata**
riparia Curtis var. *acutiformis* (Ehrh.) Fiori = **C. acutiformis**
robinsonii Podlech = **C. lycurus** subsp. **lycurus**
robusta Hochst. ex Boeckeler 1876 = **C. bequaertii**
rufa (Nees) Baill. = **Schoenoxiphium rufum**
sagittifera Lowe = **Carex peregrina**
schimperiana Boeckeler = **Schoenoxiphium schimperianum**
simensis Hochst. ex A. Rich. var. *mauensis* Kük. = **Carex fischeri** subsp. **fischeri**
simensis var. *ninagongensis* (Boeckeler) Kük. = **C. petitiana** subsp. **mannii**
simensis var. *stolonifera* (Boeckeler) Kük. = **C. petitiana** subsp. **petitiana**
sinai Boott = **C. distans** subsp. **distans**
sinaica Nees ex Steud. = **C. distans** subsp. **distans**
spartea Wahlenb. 1803 = **Schoenoxiphium sparteum**
spartea Thunb. 1811 = **S. sparteum**
sprengelii Boeckeler 1876 = **S. sparteum**
taylorii Nelmes = **Carex phragmitoides**
thomasii Nelmes = **C. mannii** subsp. **thomasii**
triquetrifolia Boeckeler = **C. monostachya**
uhligii K. Schum. ex C. B. Clarke = **Schoenoxiphium lehmannii**
vallis-rosetto K. Schum. var. *cyrtosaccus* (C. B. Clarke) Kük. in sched. = **Carex vallis-rosetto**
vallis-rosetto var. *heterostachya* Kük. = **C. mannii** subsp. **friesiorum**
vallis-rosetto var. *purpurea* Kük. = **C. greenwayi**
vallis-rosetto var. *ramosa* Kük. = **C. greenwayi**
vallis-rosetto sensu auctt. plur., non K. Schum. = **C. greenwayi**
volkensii K. Schum. = **C. johnstonii**
wahlenbergiana Boott var. *schimperi* Boott = **C. steudneri**

wahlenbergiana sensu auct., non Boott = **C. chlorosaccus**
zuluensis C. B. Clarke var. *glaberrima* Kük. nom. in sched. = **C. spicato-paniculata**

CARPHA / *2 + 1* ?

Genus of 15 species in E. and S. Africa, W Indian Ocean, S Japan, New Guinea to New Zealand, and in the New World S S. America, viz. S Argentina and S Chile.

"The limits, definitions and relationships of *Carpha* have been controversial and unclear" (Zhang & al., o.c.: 93, 2007). – "A number of mechanisms involving dispersal of achenes by wind (anemochory) are known in Cyperaceae… In Carpha … a persistent perianth adnate to the achene is modified into long, silky bristles of hairs that facilitate transport by wind" (Naczi & Ford, Sedges: uses…: 24, 2008). Cf. also Goetghebeur 1998: 177, and Browning & Goetghebeur, Sedge (Cyperaceae) genera of Africa & Madagascar: 36, 2017.

VILJOEN, J.-A. & al. (2013). Radiation and repeated transoceanic dispersal of Schoeneae (Cyperaceae) through the southern hemisphere. *Amer. J. Bot*. 100: 2494−2508 [2496, *Carpha*].

ZHANG, Xiufu & al. (2007). Phylogeny of Carpha and related genera (Schoeneae, Cyperaceae) inferred from morphological and molecular data. *Austral. Syst. Bot.* 20: 93−106.

Carpha angustissima Cherm.; Girma & al. in J. E. Africa Nat. Hist. 103: 150, 2015 [report from Nandi Forests, W Kenya, 0°12'−0°25'N × 34°57'−35°01'E]. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 322, 1983; Troupin, Fl. Rwanda 4: 431, 1988; Fl. Trop. E. Afr., Cyper.: 368, 2010.

syn.: *C. eminii* (K. Schum.) C. B. Clarke var. *angustissima* (Cherm.) Kük.

Perennial herb with short or long rhizome and roots surrounded by a sheath of persistent root-hairs, to 44 cm tall; culms tufted, rounded, with distinct deep longitudinal ridges, 20−35 cm long, 0,5−0,6 mm ∅, glabrous, the base surrounded by greyish or brown non-fibrous scales; leaves to 26 cm long; sheaths brown, 1,5−4 cm long; blade linear, 14−25 cm × 1,1−1,5 mm, V-shaped or with inrolled margins, apex acuminate; inflorescence a slender panicle, primary branches few, distant, 2−6 cm long; spikelets *solitary* or *in* small *clusters of 2−3* at end of 1,4−2 cm long branches, ovoid, 5−6,5 × 1,2−1,8 mm; spikelets *2-flowered*; *perianth bristles 2,2−3,2 mm* long, *occasionally* with a *few scattered hairs* at the very base.

Afro-alpine bogs often with *Isolepis fluitans*; 2400−3300 m alt.

C. eminii (K. Schum.) C. B. Clarke, excl. var. *angustissima* (Cherm.) Kük. (= *C. angustissima*); Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 367, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 321, 1983.

bas.: *Oreograstis eminii* K. Schum.

Perennial tufted herb with a short rhizome to 116 cm long; culms 30−80 cm long, 0,7−1,5 mm ∅, rounded or compressed to trigonous and with winged margin; leaves 20−85 cm long, sheaths brown 4−7 cm long; blades linear, apex acuminate; bracts of inflorescence leaf-like; inflorescence a narrow panicle, primary branches 1−4, 2,5−15 cm long; spikelets solitary or in dense clusters of 4−5, lanceolate, 6−8 × 0,8−1,5 mm, *1-flowered*; *perianth bristles 3−7,2 mm long*, ± *hairy* (in *C. angustissima* 2,2−3,2 mm long).

Bogs; along streams; on wet rocks; 2700−3750 m alt.

(**C. glomerata** (Thunb.) Nees); Fl. Trop. E. Afr., Cyper.: 366−367, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 322−323, 1983; Gordon-Gray, Cyper. Natal: 44 fig. 17/B-D, 1998 (nut); Cook, Aquat. & wetland pl. south. Afr.: 86, 2004.

bas.: *Schoenus glomeratus* Thunb. 1794, nom. illeg.

syn.: *S. dactyloides* Vahl; *Chaetospora dactyloides* (Vahl) A. Dietr.; *Asterochaete angustifolia* Nees, nom. inval.; *A. tenuis* Kunth; *A. glomerata* (Nees) Nees; *Carpha ulugurensis* Nelmes, nom. nud.

Perennial tussocky robust herb to 90 cm tall with very tough stolons 3 mm ∅; culms trigonous, glabrous, leafy; leaves 42−80 cm long, 2,6−4,5 mm wide, very tough, basal leaves many with thick green or light-brown sheaths, V-shaped, the upper 5−10 leaves producing a lateral inflorescence at their axils; inflorescence bracts leaf-like; inflorescence a panicle, primary branches 3−4, 6−10,5 cm long; *spikelets many in very dense clusters*, lanceolate, 4−6 × 1−2 mm; perianth bristles 1,5−3 mm long; nutlet ellipsoid, 2,4−2,7 × 0,6−0,7 mm, reddish brown.

Swamp; 2500 m alt.

A single collection reported from Tanzania, Uluguru Mts. – Not reported from E. Africa in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

S. Africa (abundant).

"There are some doubts concerning the identity of this species, it is possible that plants from the mountains of tropical east Africa belong to another species" (Cook, l.c.).

SYNONYMS:

Carpha eminii (K. Schum.) C. B. Clarke var. *angustissima* (Cherm.) Kük. = **Carpha angustissima**
schweinfurthiana Boeckeler = **Coleochloa schweinfurthiana**
ulugurensis Nelmes, nom. nud. = **Carpha glomerata**

(CATAGYNA)

Catagyna pilosa (Boeckeler) Hutch. = **Afrotrilepis pilosa**

(CHAETOSPORA)

Chaetospora aurea Kunth = **Rhynchospora corymbosa**
cuspidata Nees = **Tetraria cuspidata**
distachya Nees = **Bulbostylis hispidula** subsp. **hispidula**
madagascariensis Steud. = **Rhynchospora rubra** subsp. **africana**
nigricans (L.) Kunth = **Schoenus nigricans**

(CHAMAEXIPHIUM)

Chamaexiphium clandestinum (Steud.) Hochst. = **Ficinia clandestina**

(CHLOROCHARIS)

Chlorocharis geniculata (L.) Rikli = **Eleocharis geniculata**

(CHLOROCYPERUS)

Chlorocyperus abyssinicus (Hochst. ex A. Rich.) Rikli = **Pycreus flavescens** subsp. **flavescens**
aegyptiacus (Gloxin) Rikli = **Cyperus capitatus**
alopecuroides (Rottb.) Grossh. = **Cyperus alopecuroides**
articulatus (L.) Rikli = **Cyperus articulatus**

aureus (Ten.) Palla ex Kneuck. = **Cyperus esculentus**
badius (Desf.) Palla = **Cyperus longus** subsp. **badius**
barteri (Boeckeler) Rikli = **Cyperus pustulatus**
cimicinus (J. Presl & C. Presl) Rikli = **Pycreus niger**
compressus (L.) Palla = **Cyperus compressus**
congestus (Vahl) Palla = **Mariscus congestus**
distichophyllus Steud. 1842 = **Pycreus mundii** var. **uniceps**
flavescens (L.) Rikli = **Pycreus flavescens**
inflexus (Muhl.) Palla = **P. squarrosus**
intermedius Rikli = **P. flavescens** subsp. **intermedius**
iria (L.) Rikli = **Cyperus iria**
junciformis (Desf.) Rikli = **Cyp. laevigatus** subsp. **laevigatus** or subsp. **distachyos**
laevigatus (L.) Palla = **Cyp. laevigatus**
longus (L.) Palla = **Cyp. longus**
longus subsp. *badius* (Desf.) Soó = **Cyp. longus** subsp. **badius**
mundii (Nees) Rikli = **Pycreus mundii**
papyrus (L.) Rikli = **Cyperus papyrus**
patuliflorus (Boeckeler) Rikli = **Pycreus macrostachyos**
pauper (Hochst. ex A. Rich.) Rikli = **P. pauper**
polystachyus (Rottb.) Rikli = **P. polystachyos**
rotundus (L.) Palla = **Cyperus rotundus**

CLADIUM / *1*

syn.: *Mariscus* Scop.; *Trasis* P. Beauv. ex T. Lestib.

Genus of 3 species, cosmopolitan, i.e., in tropical and warm temperate regions of Europe, Asia, Australia, Pacific Islands, N. & S. America.

"The genus *Cladium* exhibits polymorphism. Kükenthal (1942), recognized 3 subspecies [*C. mariscus*], viz. subsp. *mariscus*, subsp. *jamaicense* Crantz (including *C. leptostachyum* Nees et Meyen and *C. chinense* Nees) and subsp. *intermedium* Kük. Blake (1943), recognized 5 species, viz. *C. leptostachyum* Nees et Meyen, *C. mariscus* (L.) Pohl, *C. procerum* S. T. Blake, *C. chinense* Nees and *C. jamaicense* Crantz. Kern (1974) opined that there is no sharp line of demarcation among Blake's species and followed Kükenthal's (*l.c.*) treatment. Koyama (1978) reduced *C. chinense* Nees to subspecies under *C. jamaicense* Crantz… However, the diagnostic character as given by Koyama (*l.c.*) shows that *C. jamaicense* Crantz is distinguished from *C. jamaicense* subsp. *chinense* only by the length of the nut i.e., *c*. 2,5 mm in the former and 1,8−2 mm in the latter. Critical observation of available specimens reveals that the length of the nut varies between 2 and 3 mm … The Indian plant, reported only from Kashmir is characterized by terete culm and compact partial inflorescences with 3−10(−14) spikes in each cluster. It is identical with the type specimen of *C. mariscus* and concurs with the diagnostic characters given in the protologue… and therefore … it is identified as *C. mariscus* (L.) Pohl subsp. *mariscus*" (Dey & Prasanna in Rheedea 20: 2−3, 2010, with Fig. 1).

GORDON-GRAY, K. D. & al. (2009). Studies in Cyperaceae in southern Africa 42: Pseudo-vivipary in South African Cyperaceae. *S. Afric. J. Bot.* 75: 165−171 [p. 166−167].

RAYNAL, J. (1972). Notes cypérologiques: 17. – Révision des Cladium P. Browne s. lat. (Cyperaceae) de Madagascar et des Mascareignes. *Adansonia, Sér. 2*, 12: 103−112.

Cladium mariscus (L.) Pohl subsp. **jamaicense** (Crantz) Kük.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 609, 1985; Goetghebeur (1998): 180; Simpson & Inglis in Kew Bull. 56: 280, 2001. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 375,

1955; Haines & Lye, Sedges and rushes E. Afr.: 323−324, 1983; Berhaut, Fl. ill. Sénégal 9: 164, 1988; Troupin, Fl. Rwanda 4: 433, 1988; Gordon-Gray, Cyper. Natal: 45−46, 1995; Cook, Aquat. & wetland pl. south. Afr.: 87, 2004; Boulos, Fl. Egypt 4: 405, 2005; Gordon-Gray & al., o.c.: 167, 2009; Fl. Trop. E. Afr., Cyper.: 365, 2010; Webbia 67: 94−95, 2012; Browing & Goetghebeur, Sedge (Cyper.) genera Africa & Madag.: 38, 2017.

bas.: *Schoenus mariscus* L.; *Cladium jamaicense* Crantz

syn.: *Mariscus jamaicensis* (Crantz) Britton; *Cladium occidentale* Schrad.; *C. leptostachyum* Nees; *Mariscus leptostachyus* (Nees) Kuntze; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb 1−3(−5) m tall, stoloniferous, and with an erect woody rhizome c. 1 cm ∅; multiple stolons arizing from one rhizome, 5−20 cm long, 0,5 cm ∅, with many scales; stems rounded, sometimes bluntly trigonous, 0,4−2,2 cm ∅, hollow except for nodes; basal leaves without sheaths, linear, plicate, with *spine-like teeth* on margins and midrib; cauline leaves spirally arranged, linear, plicate; sheaths brown, 5−18 cm long; blades 0,59−2,25 m long, 0,7−2,8 cm wide, *with spine like teeth*, apex acuminate; lowermost inflorescence bracts leaf-like; inflorescence a panicle 30−90 cm long, primary branches long; secondary and tertiary branches 0,5−2 cm long; each main branch bearing *100−1500 spikelets*; spikelets 3−7 per spike, lanceolate, 3−5,7 mm long; nutlet ovoid, *pale brown*, *rugose*.

Bogs, swamps, lake edges; dry marshes; marshy woodland; marshy bases of sand dunes (cf. Adam & Naegele in Not. Syst. Paris 16: 317−322, 1961); floating mats (meadows); sometimes in large stands (S. Africa); can tolerate saline conditions; near sea-level to 2300 m alt.

Canary Isl. (Gran Canaria; Verloove in Webbia 67: 93−99, 2012); Cape Verde Islands; N Africa from Morocco to Egypt (subsp. *mariscus*); Namibia, S. Africa, Botswana; Madagascar, Mauritius; SW N. America, C. & S. America, West Indies. Perhaps only native in the New World. – Susp. *jamaicense* is dominant in the Florida everglades ("saw-grass" or "twig-rush").

Subsp. **mariscus** [syn.: *C. mariscus* subsp. *martii* (Roem. & Schult.) Egor.; *C. mariscus* var. *martii* (Roerm. & Schult.) Kük.; *C. grossheimii* Pobed.; *Isolepis martii* Roem. & Schult.] occurs in more temperate areas, and is known as 'thatching sedge' or 'fen sedge', a first-class thatching material (Burkill, l.c.). It is characterized by rather compact partial inflorescences with 3−10 spikelets in the clusters, spikelets 6−8 mm long, and nut smooth and dark brown to blackish, 2−3 mm long. It "appears to be restricted to Europe, N Africa and SW Asia, including Caucasas… not found in Siberia East or Ural, neither does it occur in regions north of Caspian Sea" (Flora of Pakistan 205: 163, 2001. Cf. Boulos, Fl. Egypt 4: 404, 2005).

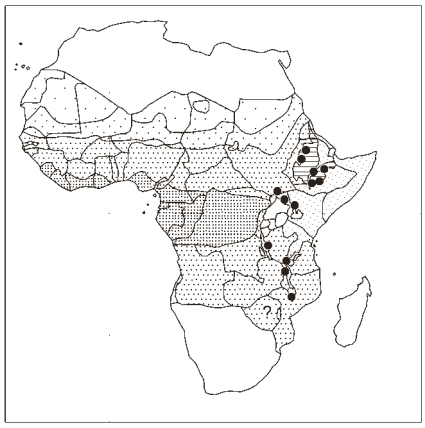
Ornamental; fibres used for cheap paper; thatching; weed in rice-fields. Large stands are important as a refuge for wildlife.

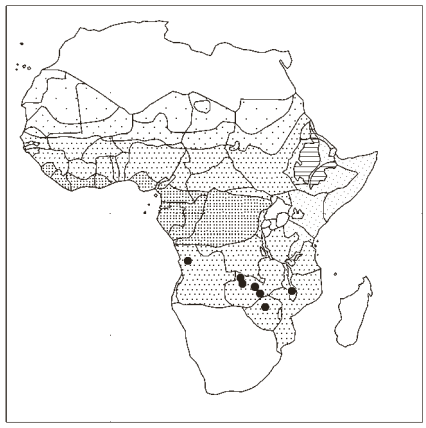
Can be confused with *Rhynchospora corymbosa*, but spikelets are longer in the latter species (7,5−10 mm long, not 3,1−5,7 mm). Perianth bristles are absent in *Cladium* but present in *R. corymbosa*.

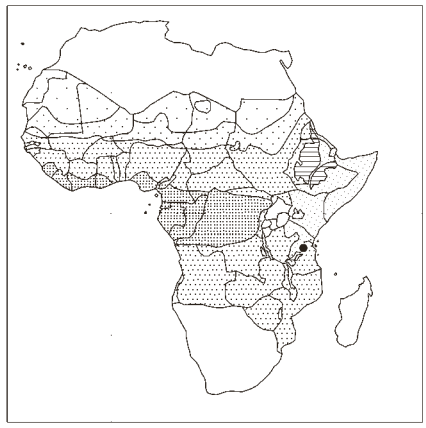
SYNONYMS:

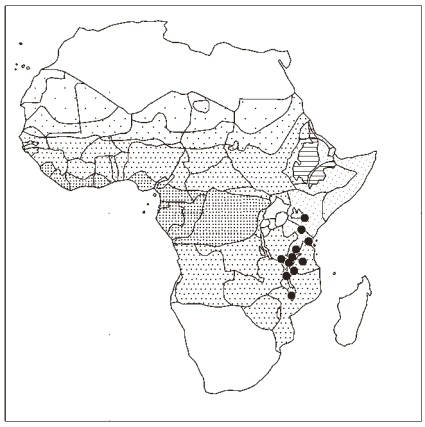
Cladium flexuosum (Boeckeler) C. B. Clarke, incl. var. *polyanthemum* Kük. = **Machaerina flexuosa** subsp. **polyanthemum**

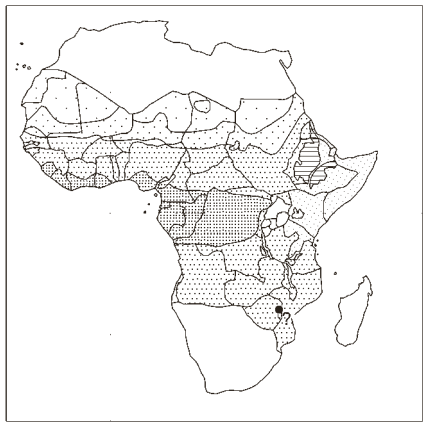
See also above under *C. mariscus* and World Checklist of Selected Plant Families, Cyperaceae, Royal Bot. Gard., Kew.

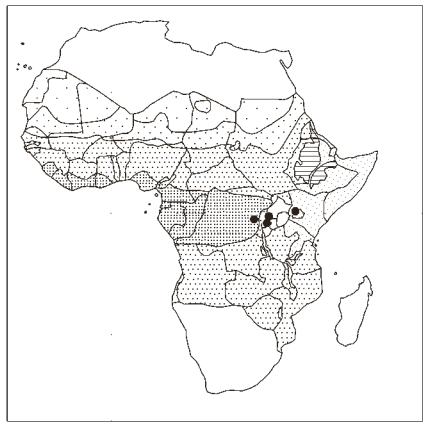

Carex steudneri

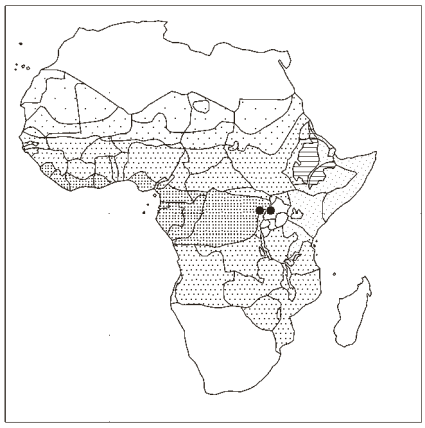

Carex tricholepis

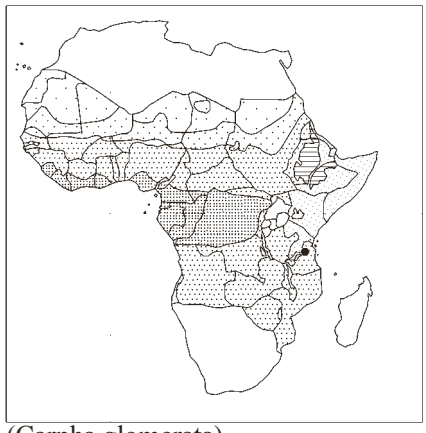

Carex uluguruensis

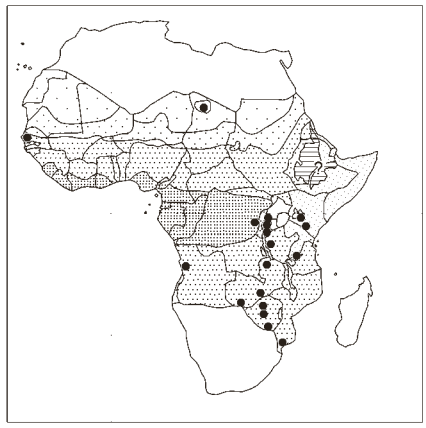

Carex vallis-rosetto

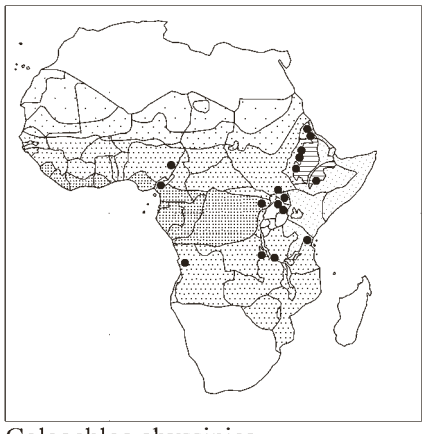

Carex zuluensis

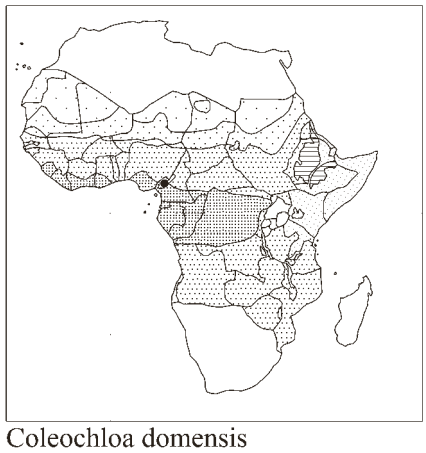

Carpha angustissima

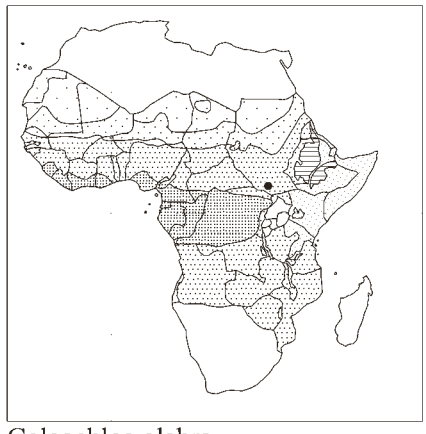

Carpha eminii


(Carpha glomerata)


Cladium mariscus


Coleochloa abyssinica


Coleochloa domensis


Coleochloa glabra

COLEOCHLOA / *8*

syn.: *Eriospora* Hochst. ex A. Rich. 1850, nom. illeg., non Berkeley & Broome 1850.

Genus of 8 species in tropical and S. Africa, Madagascar.

Perennial herbs with branched rhizome. Habit and spikelet structure of *Scleria* but leaves distichous. Leaves narrow with persistent open sheaths, *ligules a line of fine hairs*, blades deciduous. Involucral bracts leaf-like. Inflorescence paniculate with clusters of spikelets on peduncles emerging from the leaf axils up the stem; glumes distichous. Nutlet smooth with long beak (cf. Goetghebeur 1998: 183). Keys to the species are found in Kew Bull. (Nelmes) 8: 375, 1953; Fl. Trop. E. Afr., Cyperaceae: 373−374, 2010.

Two species have restricted distribution areas. In one species (*C. virgata*) the mature fruit is unknown.

RAYNAL, J. (1963). Notes cyperologiques I. Afrotrilepis, nouveau genre africain. *Adansonia, N.S.* 3: 250−265 [p. 261−262, incl. general map].

Coleochloa abyssinica (Hochst. ex A. Rich.) Gilly, incl. var. *castanea* (C. B. Clarke) Pic. Serm.; Lisowski & al. in Bull. Jard. Bot. Natl. Belg. 45: 388, 1975; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 149, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 103, 2015. – Icon.: Bot. Not. 126: 332, 1973; Haines & Lye, Sedges & rushes E. Afr.: 363, 1983; Fragm. Florist. Geobot. 37: 217, 1992; Fl. Eth. & Eritrea 6: 500, 1997.

bas.: *Eriospora abyssinica* Hochst. ex A. Rich. and var. *castanea* C. B. Clarke

syn.: *Trilepis abyssinica* (Hochst. ex A. Rich.) Boeckeler

Tufted perennial herb with branching scaly stolons; stems 40−105 cm tall, 1−4 mm ∅, in lower part covered by old leaf sheaths; blades to 30−59 cm long, 0,2−0,7 cm wide, folded, with spine-like teeth on margins and midrib; ligule a very dense band of stiff white hairs 1−2 mm long; panicle diffuse with 2−6 main branches arising together from the upper leaf sheaths; spikes *4−9* mm long, c. 3 mm wide of numerous densely clustered spikelets 4−6 mm long; nutlet linear, *4−6,2* mm long, *smooth*, *beak curved*, style *breaking off*, tips *not recurved*.

Grassland; shallow soils over rocks; often epiphytic on trees in rain-forest; rocky outcrops with wet flushes and thin soil with *Selaginella njamnjamensis, Aeollanthus* sp., *Aloe* sp. and many annuals; with *Tripogon, Aeollanthus, Plectranthus, Selaginella, Hypericum, Aloe, Crassula schimperi* subsp. *phyturus*; 1200−3000 m alt.

Superficially resembling a large *Scleria* species.

C. domensis Muasya & D. A. Simpson, Kew Bull. 65: 323, 2010 (with fig. p. 324); Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 68 (fig.), 69, 106, 149, 2010; Onana & Cheek, Red Data Book flow. pl. Cameroon: 365, 553 (map), 2011; Onana, Fl. Cameroun 40: 222 and pl. 7C, 2013.

Tufted epiphytic perennial herb resembling *C. abyssinica*, but stolons or rhizomes absent; *stems 15−30 cm tall*, c. 6-leaved; leaf base sheath 2−4 cm, apex long-hairy; blade flat, 25 × 0,4 cm; inflorescence stiff, spike-like, 6−8 cm long, 1 cm wide, brown; spikes 2−4 per leaf axil, of 6−10 spikelets; *nutlet pilose*, *style persistent* with *tips recurved*.

Obligately epiphytic, in rain-forest; 1600−1830 m alt.

Critically endangered since it is known from very few sites.

C. glabra Nelmes; Haines & Lye, Sedges & rushes E. Afr.: 363, 1983; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015.

Perennial densely tufted herb similar to *C. setifera* but stems and leaves glabrous; spikelets 3−4 mm long; nutlets 4−5 mm long.

In drooping scattered clumps, almost the sole plant on upper smoother rock slopes, including those nearly vertical; rock crevices.

Seems to be restricted to Mt Odo, Equatoria, Sudan. Two specimens seen by Darbyshire & al., l.c.

C. microcephala Nelmes; Fl. Trop. E. Afr., Cyper.: 375, 2010. – Icon.: Bot. Not. 126: 331, 1973; Haines & Lye, Sedges & rushes E. Afr.: 362, 1983.

syn.: *Eriospora abyssinica* Hochst. ex A. Rich. var. *brevirostrata* Peter

Perennial loosely tufted herb to 134 cm tall; stems 21−90 cm long, 1,5−4 mm wide, glabrous; leaves flat or conduplicate, to 120 cm long; ligule a very dense band of white hairs 1−2 mm long; blades linear, 27−100 cm long, 2−9 mm wide, midrib densely hairy, sheaths glabrous; inflorescence a lax, pendulous panicle with 2−6 main branches protruding from the upper leaf sheaths; *spikes* pedicellate (pedicels 1−3 cm long) in fascicles of 5−8, ovoid, *3−6 mm long*; *spikelets* many per spike, lanceolate, *2,5−4 mm long*; *utricle* lanceolate, *2−4 mm long*, overtopping the glumes, *beak straight*; nutlet yellow, obovoid, 1,1−1,5 mm long, apex with knob.

Bare rocky hillock in mist-forest in wet places; savanna hills; among large grasses on rock face; crowded in rock clefts; sometimes common or abundant, sometimes as isolated specimens; 550−1750 m alt.

In habit very similar to *C. abyssinica* which has, however, bigger spikes, spikelets, glumes and nutlets.

C. pallidior Nelmes; Haines & Lye, Sedges & rushes E. Afr.: 363, 1983; Kativu in Kirkia 15: 35, 1994; Bothalia 28: 191, 1998 (map S. Africa); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 76, 2006.

Tufted perennial herb 30−70 cm tall; stems pubescent or villous; *leaves* flattish above, *2,5−4,5 mm wide*, usually hairy above and beneath; inflorescence a lax panicle of few to many fascicles of spikes on slender peduncles; spikelets oblong, 2,5−3 mm long; utricle 3−3,5 mm long.

Granite rocks and sandstone-quartzites; in crevices; bare hill slopes, grasslands; c. 1100 m alt.

S. Africa.

Similar to *C. schweinfurthiana* but leaf blades narrower, spikes shorter (5−7 mm long), nutlet smaller.

C. schweinfurthiana (Boeckeler) Nelmes; Haines & Lye, Sedges & rushes E. Afr.: 363, 1983; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015.

bas.: *Carpha schweinfurthiana* Boeckeler

syn.: *Eriospora schweinfurthiana* (Boeckeler) Benth. ex C. B. Clarke

Perennial loosely tufted herb; stems 68−92 cm tall; leaves flat to conduplicate, *4−6 mm wide*, yellow above, *midrib glabrous*, sheaths glabrous; inflorescence an erect, lax, slender panicle composed of 5−7 fascicles of spikes, unequally peduncled; peduncles very slender, erect, curved or flexuous; spikes few to numerous in each fascicle, *mostly ellipsoid*, 0,6−1 cm long; spikelets ± oblong, 4−5 mm long; utricles lanceoloid, trigonous, *4,5−5,25 mm long*, incl. beak 1−1,25 mm.

Frequent on upper rocky slopes; 924 m alt.

Known only from Mt Baginze (border S. Sudan/Zaire).

Differs from *C. abyssinica* and *C. microcephala* by having leaf midrib glabrous, and the glumes are paler.

C. setifera (Ridl.) Gilly; Kew Bull. 8: 378−380, 1953; Kativu in Kirkia 15: 36, 1994; Burrows & Willis, Pl. Nyika Plateau, Malawi: 296, 2005; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 76, 2006; Gereau & al., Lake Nyasa florist. checklist: 46, 2012. – Icon.: Bot. Not. 126: 332, 1973; Haines & Lye, Sedges & rushes E. Afr.: 363, 1983; Bothalia 28: 191, 1998; Kew Bull. 64: 682, 2010 (subsp. **glabrescens**); Fl. Trop. E. Afr., Cyper.: 376, 2010; Browning & Goetghebeur, Sedge (Cyper.) genera Afr. & Madag.: 39, 2017.

bas.: *Fintelmannia setifera* Ridl.

syn.: *Trilepis setifera* (Ridl.) Kuntze; *Eriospora setifera* (Ridl.) C. B. Clarke

Perennial densely tufted grass-like herb 10−84 cm tall, *sometimes the whole plant villous*; stems rounded to trigonous, 14−55 cm long, 0,4−1 mm ∅, glabrous or sparsely to densely hairy; leaf sheaths sometimes blackened basally, brown to straw-yellow, 1−7 cm long, ligulate; blade *convolute-cylindric*, 21−60 cm long, 0,5−2,5 mm wide, ± hairy beneath, ± glabrous above, apex acuminate; *inflorescence* a *lax*, slender, erect or slightly curved panicle with *1−3 fascicles of spikes on slender peduncles*, 4−7 × 2,5 mm; spikelets many per spike, oblong-lanceolate, 2−4 × 0,5−1,1 mm; utricle lanceolate, 2,3−4,2 mm long, incl. beak 1,5−2 mm.

Miombo woodland; forest/woodland transition; on shallow soils overlying rocks with *Dipcadi glaucum*; pioneer vegetation with *Aeollanthus heliotropioides, Icomum lineare, Andropogon fastigiata, Antherothoma naudinii*, etc., on dome-shaped granitic outcrop; abundant on shallow rocky soil in grasslands; granitic outcrops (plants forming mats, cf. Korte & Porembski in Senckenberg, Natur, Forschung, Museum 141: 20, 2011); sloping bank of river; flat wet rocks; dry granite rocks by river; cliff edges; humid sandy soil between blocks of quartzose sandstone; 30−2650 m alt.

S. Africa, Swaziland (Bothalia 28: 190−192, 1998); Madagascar.

Comprises 2 subspp.: – subsp. **setifera** [syn.: See above, and, *Trilepis oliveri* Boeckeler; *Eriospora oliveri* (Boeckeler) C. B. Clarke; *E. villosula* C. B. Clarke; *E. rehmanniana* C. B. Clarke; *Trilepis rehmanniana* Boeckeler ex C. B. Clarke; *Coleochloa rehmanniana* (C. B. Clarke) Gilly; *C. villosula* (C. B. Clarke) Gilly; *C. oliveri* (Boeckeler) Gilly], with stems sparsely to densely villous, widespread in E & S Africa, except Kenya; – subsp. **glabrescens** Hoenselaar & D. A. Simpson (cited as var. *glabrescens* in Fl. Trop. E. Afr., Cyper.: 377, 2010) with stems glabrous or nearly so, in Kenya …"as the two taxa show a strongly geographical disjunction, the rank of subspecies is considered most appropriate" (Kew Bull. 64: 683, 2010).

The plant has some economic value: in S. Africa the wiry leaves and stems are used to make ropes or are woven into mats.

C. setifera and *C. pallidior* closely resemble each other and are sometimes difficult to separate. *C. pallidior* is courser and has broader pubescent leaves.

C. virgata (K. Schum.) Nelmes; Kativu in Kirkia 15: 35, 1994; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 76, 2006; Fl. Trop. E. Afr., Cyper.: 377−378, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 364, 1983.

bas.: *Eriospora virgata* K. Schum.

Perennial, densely tufted herb, 40−85 cm tall, base of plants blackened; stems glabrous; leaves convolute-cylindric, to 60 cm long, 1,5−3 mm wide, densely but *minutely hairy above*, glabrous

beneath; sheaths glabrous; inflorescence a dense *interrupted panicle* of *clustered sessile spikes*; spikelets oblong, c. 4 mm long; glumes dark reddish; utricles immature only (mature not known). – Differs from all the other *Coleochloa* species by its densely hispidulous leaves (above) and clustered sessile spikelets.

Bright green clumps frequent on shallow rocky soil in grasslands; peaty fibrous base of tussocks sometimes 1 m high and eroded into vase-shaped forms, forming massive tussocks on open grasslands; scrubby grassland; 1890−2100 m alt. (fide Nelmes, 1953).

Rarely collected (Fischer 624, K, B destroyed; Chapman & Chapman EG 8761; Brass 16635 (by some authors cited as Brass 16653), 16737.

SYNONYMS:

Coleochloa oliveri (Boeckeler) Gilly = **Coleochloa setifera** subsp. **setifera**
rehmanniana (C. B. Clarke) Gilly = **C. setifera** subsp. **setifera**
villosula (C. B. Clarke) Gilly = **C. setifera** subsp. **setifera**

(COSTULARIA)

LARRIDON, I. & al. (2017). Molecular phylogenetics of the genus Costularia (Schoeneae, Cyperaceae) reveals multiple distinct evolutionary lineages. *In*: MUSILI, P. M. & G. MWACHALA, eds., *XXI Aetfat Congress 2017*: 23−24.

LARRIDON, I. & al. (2018). Revised delimitation of the genus Tetraria, nom. cons. prop. (Cyperaceae, tribe Schoenea, Tricostularia clade). *S. Afric. J. Bot.* 118: 18−22.

Genus maintained by, e.g., Goetghebeur (1998: 178−179) and Browning & Goetghebeur, Sedge genera… Africa & Madagascar: 40, 2017 (*C. natalensis*), and also kept separate in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, with 12 species in S Trop. & S. Africa, W Indian Ocean, Borneo to New Caledonia, only *C. natalensis* occurring in Malawi and S. Africa, the others in Madagascar (most species) and Seychelles, Mascarenes (cf. also note by Larridon & al. in Taxon 66: 1225−1226, 2017).

Gordon-Gray (Cyperaceae in Natal, in Strelitzia 2: 187−191, 1995) summerised the situation as follows:

"*Tetraria* was established by Beauvois (1814) to accommodate a type species with a supposed numerical constancy in floral parts (multiples of four) that has proved non-existent (Levyns 1947). With improved knowledge, the considerable variability exhibited by southern African species has become evident, so that Steudel's genus *Macrochaetium* (1855) and Clarke's *Costularia* (1897/98) are now doubtfully distinct from *Tetraria*. *Macrochaetium* comprises only two described species both from the southern Cape: *Costularia* is larger with about eleven species represented in southeastern and tropical Africa, Madagascar and Australia. Koyama (1961) believed observed differences were insufficient for discrimination and so absorbed *Costularia* as congeneric with *Tetraria*. This is the arrangement followed by Reid (1985) and it will be adopted here (*Costularia natalensis* is the only species affected). Considering the poor representation of *Tetraria*, *Macrochaetium* and *Costularia* in Natal both in number of species and in frequency of distribution, and bearing in mind the great need for re-evaluation of the whole complex, it is simplest and least controversial in this work to place in *Tetraria* all Natal plants that qualify for affinity with this genus. Some of the entities are very inadequately known, so this arrangement is tentative."

SYNONYM:

Costularia natalensis C. B Clarke = **Tetraria natalensis**

Gordon-Gray (l.c.) continues: "As stated in the introductory note to *Tetraria* (p. 187), *T. natalensis* is maintained under the allied genus *Costularia* by some workers because of difference in the positions within the spikelet of the male and the bisexual florets; the more markedly distichous glumes; the slender, flexuous perianth bristles and the more or less rounded (hardly 3-angled) achene with a persistent, scabrid style-base. None of these criteria considered singly, is adequate to distinguish the genera: when taken collectively there is still doubt of generic disjunction. However, collective consideration of the features listed, together with the rather copious, branching inflorescence densely provided with small, dark spikelets, effectively distinguish *T. natalensis* from other Natal species of *Tetraria*. Clarke (1897/98) states that, from their habit, species of *Costularia* have been referred to *Cladium*. In Natal no confusion is possible between *Tetraria natalensis* and *Cladium mariscus* subsp. *jamaicense* since habitats are so distinctive, the latter species occurrring only on the coast, in or very close to, water."

(COURTOISIA)

Courtoisia assimilis (Steud.) C. B. Clarke
= **Courtoisina assimilis**
cyperoides (Roxb.) Nees, incl. var. *africana* C. B. Clarke and var. *spicata* C. B. Clarke = **C. cyperoides**
olivacea Boeckeler = **Oxycaryum cubense**

COURTOISINA / *2*

Courtoisina Soják; syn.: *Courtoisia* Nees 1834, non L. Marchand 1830; *Indocourtoisia* Bennet & Raizada; *Cyperus* L. subgen. *Courtoisia* (Nees) Lye 1983; *Cyperus* L. subgen. *Courtoisina* (Nees) Lye 1992 (Muthama Muasya & al. in Syst. Geogr. Pl. 71: 539−544, 2002; Larridon & al. in Pl . Ecol. Evol. 144: 329−330, 2011, and in Taxon 60: 873, 2011).

Genus of 2 species (Goetghebeur 1998: 170) occurring in E & S. Africa, Madagascar, India and SE Asia. They are tufted annuals with fibrous roots, with a strong scent of curry. Leaves basal, 3-ranked, ligule absent; glumes winged; spikelets falling off entire (Uberti & al. in Bot. Rev. 82: 244, 2016) when mature (desarticulating in one piece above the 2 basal empty glumes); florets bisexual, bristles absent.

Courtoisina assimilis (Steud.) Maquet; Troupin, Fl. Rwanda 4: 435, 1988. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 174−175, 1983 (under *Cyperus*); Fl. Eth. & Eritrea 6: 441, 1997 (idem); Clarke & Mannheimer, Cyper. Namibia: 47/4, 1999; Archer & Craven in Sabonet News 9/1: 19, 2004; Fl. Trop. E. Afr., Cyper.: 258, 2010; Browning & Goetghebeur, Sedge gen. Afr. & Madag.: 41, 2017.

bas.: ***Cyperus assimilis*** Steud.

syn.: *Cyperus assimilis* var. *depressa* Steud.; *Courtoisia assimilis* (Steud.) C. B. Clarke; *Mariscus assimilis* (Steud.) Podlech; *Indocourtoisia assimilis* (Steud.) Bennet & Raizada

Annual herb 15−55 cm tall; culms tufted, 8−45 cm long, 1,6−3,2 mm ∅, *trigonous*; leaves to 48 cm long with sheaths 3−6,5 cm long; blade linear, 10−36 cm long, 3,2−6 mm wide, flat, flaccid, scabrid on margins and primary veins; inflorescence a simple to compound anthela; spikelets in loosely digitate spikes, sessile, *5−9 per spike*; *spikelets 4−11 mm long*, *3−8-flowered*. – Easily recognized by its *yellowish green colour*, which is visible even from a distance.

Streamsides; ditches; seasonal pools in up to 20 cm of water; often on black cotton soil or in rocky areas; roadsides; swamps; humid meadows and boskets; newly excavated hollows; streams with fluctuating water-level; 250−2500 m alt.

Namibia, Botswana, S. Africa; Madagascar.

Culms cooked as vegetable and famine food (Simpson & Inglis in Kew Bull. 56: 280−281, 2001).

C. cyperoides (Roxb.) Soják; Naczi & Ford, Sedges: Uses…: 34, 2008; Fl. Trop. E. Afr., Cyper.: 259−260, 2010. – Icon.: Bentham in Icon. Pl. 14: pl. 1341, 1881 (under *Courtoisia*); Haines & Lye, 1983: 175 (as *Cyperus pseudokyllingoides*); Gordon-Gray, Cyper. Natal, Strelitzia 2: 129, 1995 (as *Mariscus cyperoides* subsp. *africanus*, details); Clarke & Mannheimer, 1999: 47/3; J. Econ. Taxon. Bot., Add. Ser. 21: 68, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 299, 2005; Fl. China, Ill. 23: 327, 2012; Browning & Goetghebeur, 2017: l.c.

bas.: *Kyllinga cyperoides* Roxb.

syn.: *Mariscus cyperoides* (Roxb.) A. Dietr., incl. subsp. *africanus* (Kük.) Podl.; *Courtoisia cyperoides* (Roxb.) Nees 1833, incl. var. *africana* C. B. Clarke, nom. nud. and var. *spicata* C. B. Clarke, nom. nud., non *Cyperus cyperoides* (L.) Kuntze 1898; ***Cyperus pseudokyllingioides*** Kük., incl. var. *africanus* Kük.; *Cyperus kleinianus* Hochst. ex Steud.; *Pseudomariscus cyperoides* (Roxb.) Rauschert; *Indocourtoisia cyperoides* (Roxb.) Bennet & Raizada

Annual herb 12−80 cm tall, yellowish green; culms tufted, 11−80 cm long, 1,3−3,1 mm ∅, *trigonous*; leaf sheaths loose and thick, 2,5−6 cm long; blades flat, 15−40 cm long, 2−6 mm wide, scabrid on margins and primary veins; inflorescence a simple to compound anthela; spikelets in digitate to globose spikes, sessile, *20 to many per spike*, *spikelets 1−2-flowered, 4−6 mm long*.

Dense riverine vegetation; marshes and boggy grassland; seasonal ponds on black cotton soil; rice fields; wet depressions in cultivations; dry pond with *Oryza longistaminata*; 70−1850 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar; Asia, from India through to China, Thailand, Vietnam. – In Liberia according to Poilecot, Guide Liberian grasses: 162, 167, 2015. Also in Cameroon ? (Onana, Vascul. pl. Cameroon: 160, 2011).

(CREPIDOCARPUS)

Crepidocarpus cubensis (Poepp. & Kunth) Klotzsch ex Boeckeler = **Oxycaryum cubense**
schinzii Klotzsch ex Boeckeler = **O. cubense**

(CYLINDROLEPIS)

Cylindrolepis rehmanniana Boeckeler ex T. Durand & B. D. Jacks. = **Mariscus rehmannianus** [syn.: *Cyperus decurvatus* (C. B. Clarke) C. Archer & Goetgh.]
remotus C. B. Clarke = **Cyperus remotus**

CYPERUS s. str. / *140 + 1* ?

– including *Dichostylis* P. Beauv., *Juncellus* C. B. Clarke, *Sorostachys* Steud.

– excluding *Alinula* J. Raynal, *Anosporum* Nees, *Ascolepis* Nees ex Steud., *Courtoisina* Soják, *Kyllinga* Rottb., *Kyllingiella* R. W. Haines & Lye, *Lipocarpha* R. Br., *Mariscus* Gaertn., *Pycreus* P. Beauv., *Queenslandiella* Domin, *Remirea* Aubl., *Torulinium* Desv. ex Ham. – These satellite genera are recognized as independent genera here.

A few species in our area are insufficiently known. Rhizome and roots are lacking in 1 species; no mature fruit seen in 1 species; no ecology recorded for 4 species; and 13 + 2 ? species are known only from the type.

"*Cyperus* is a large, ecologically diverse, and important sedge genus. Recent systematic work resolved problems with generic delimitation and implicated C_4 phytosynthesis as a possible key innovation spurring diversification" … "For many years, the circumscription of *Cyperus* was problematic. Early molecular studies resolved a well-supported clade that included *Cyperus* s. str., but also inferred a paraphyletic genus with the inclusion of up to thirteen other embedded genera… However, recent work has broadened the circumscription of *Cyperus* to include previously segregated genera, rendering *Cyperus* monophyletic." But "most of the c. 950 *Cyperus* species have not been included in phylogenetic studies. Due to the massive size of the genus, a comprehensive phylogeny for *Cyperus* is not imminent" (Reid & al. in Pl. Ecol. Evol. 150: 343−344, 2017).

"Even when treated in its most narrow taxonomic concept, *Cyperus* L. is the second largest sedge genus. Typical *Cyperus* (sensu stricto) is recognized as having an herbaceous habit with basally disposed leaves, a terminal anthelate inflorescence immediately subtended by leafy bracts, spikes clustered on often elongate peduncles (rays), laterally flattened spikelets with two-ranked floral scales, and flowers lacking a perianth." – "The question 'What is *Cyperus* ?' has not always been easy to answer… With *Cyperus* as its core genus, the well-supported *Cyperus* clade also includes the genera *Alinula* Raynal, *Androtrichum* (Brongn.) Brongn., *Ascolepis* Nees ex Steudel, *Courtoisina* Soják, *Kyllinga* Rottb., *Kyllingiella* R. Haines & Lye, *Lipocarpha* R. Br., *Oxycaryum* Nees, *Pycreus* P. Beauv., *Queenslandiella* Domin, *Remirea* Aublet, *Sphaerocyperus* Lye, and *Volkiella* Merxm. & Czech… Some of these genera have been treated as infra-generic taxa of *Cyperus*… Based on research to date, the only consistent division in the *Cyperus* clade is based on the C_3/C_4 photosynthetic pathways… The division of *Cyperus* into two groups based on presence of Kranz anatomy, an anatomical characteristic of the C_4 pathway, was originally suggested by Rikli (1985)" (Reid & al. in Brittonia 66: 292−294, 2014).

A review of earlier classifications of *Cyperus* is presented by Shalabi & Gazer (Pakistan J. Bot. 47: 2339, 2015). These authors, studying the achene morphology, attribute the difficulties of classifying the sedges to their "substantially reduced floral and vegetative parts".

It is true that the "many reductions and convergences in the inflorescences of Cyperaceae have impeded evolutionary reconstruction… and classification… Based on recent molecular phylogenetic studies, Cyperaceae consists of two main clades, corresponding to subfamilies Cyperoideae and Mapanioideae… The *Cyperus* clade includes a grade of branches characterized by C_3 photosynthesis (C_3 *Cyperus*, c. 190 spp.) … Nested in C_3 *Cyperus* is a highly diverse clade (C_4 *Cyperus*, c. 760 spp.) … The nine C_4 segregate genera represent c. 30 % of diversity in the C_4 *Cyperus* clade" (Larridon & al. in Bot. J. Linn. Soc. 172: 107−108, 2013).

However, merging 12 genera into *Cyperus* on the basis of photosynthetic pathways through a C_3 or C_4 cycle seems disputable… The discovery that C_4 plants arose across evolutionary distantly related species implies repeated evolution of this complex photosynthetic pathway from the ancestral C_3 system… and the number of unrelated groups of C_4 plants has grown steadily…" (Hibberd & Furbank in Nature 538/7264: 177−178, 2016). "By now, C_4 plants have been found in 19 plant families, with the largest number of species appearing in grasses, sedges and chenopods. Molecular phylogeny estimates that C_4 photosynthesis has been evolved independently over 60 times" (Voznesenskaya in "Programme of events devoted to the 300-years anniversary of the Komarov Botanical Institute of the Russian Academy of Sciences, June, 23, 2014: 6). To cite J. Raynal (Adansonia, Sér. 2, 7: 84, 1967): "Une filiation, même certaine, ne saurait impliquer une réunion taxinomique".

* * *

Cyperus as treated by us below comprises some 600 (700) species. They are small to large rhizomatous, stoloniferous or bulbiferous annuals or perennials.

They are cosmopolitan, mostly tropical ("the second-largest genus in *Cyperaceae* and its most important genus in the tropics" fide Larridon & al. in Taxon 60: 868, 2011). The distribution of individual species ranges from nearly cosmopolitan (e.g. *C. squarrosus* L. and *C. odoratus* L.) to regional and narrow endemics (Tucker in J. Bot. Res. Inst. Texas 11: 39, 2017). *Cyperus* species are represented in almost all types of habitat, although dominantly in seasonal and permanent wetlands (Muasya & al. in Syst. Geogr. Pl. 71: 539, 2002).

Although the percentage of *Cyperus* taxa of economical-ethnobotanical importance is high (27 % of Cyperaceae according to Naczi & Ford, Sedges: Uses…: 3, 2008), few are well-known. *Cyperus papyrus* L. was an important source of paper in the early history of western civilization; *C. esculentus* L. possesses edible tubers, and is, as well, an important wildlife food, while regarded in some settings as a weed; *C. rotundus* L. is considered as the world's worst agricultural weed; many other species are ecologically important and are valuable to wildlife (Reid & al. in Brittonia 66: 292, 2014; See also H. Krähmer, ed., Atlas of weed mapping: 75, 76, 78, 2016). Only a few are of horticultural interest, and are offered for sale by nurseries, e.g. *C. papyrus*, *C. alternifolius*, *C. involucratus*, *C. profiler*, *C. longus* and *C. eragrostis* (often mistakenly known and quoted as '*C. glaber*'; Pellizzari & Verloove in Webbia 72: 127, 2017); others are recorded as local, probably ephemeral weeds (*C. compressus*, *C. distans*, *C. iria*, *C. pumilus*; Verloove & Saiani in Webbia 70: 133, 2015). – Cf. also Kukkonen, Economic aspects of African Cyperaceae in Proceedings IX Plenary Meeting A.E.T.F.A.T., Las Palmas 18−23 March 1978, ed. G. Kunkel: 72−74, 1979.

* * *

"*Cyperus* species are difficult to key, with many characters showing considerable variability. Therefore, good specimens are essential, and that means flowering or fruiting material **complete with basal parts**… Without a complete specimen you have no hope of getting a name…" (Fl. Trop. E. Afr., Cyper.: 132, 2010).

* * *

Our compilation is a compromise between traditional and the most recent treatments of *Cyperus*. We think that a more narrowly defined genus is preferable to a broad generic concept with subgeneric divisions. These segregate genera are often morphologically

distinct and the species easily recognized in the field. Some examples: *Courtoisina* has deciduous intact spikelets, *Kyllingiella* spirally arranged glumes, *Oxycaryum* spirally arranged glumes and dorsiventrally flattened dimerous gynoecia, etc. (See Table 1 in Uberti & al., Bot. Rev. 82: 244, 2016; Larridon & al. in Pl. Ecol. Evol. 144: 327, 2011).

There is also the question of a "very complex generic and subdivisional nomenclature with approximately 350 generic and subdivisional names to accommodate the roughly 950 species present in the group" (Larridon & al. in Taxon 60: 868, 2011). When Bodard (Bull. Soc. Bot. France 99: 61, 1952) described a new species of *Cyperus* (*C./Mariscus plurinervosus*) from Chad he followed the "actual international trend", i.e. to merge *Mariscus* into *Cyperus*, he remarked on the large number of new combinations that would follow but not called for ("cette solution entraîne un grand nombre de combinaisons nouvelles qui ne s'imposent pas"); "Especially as many collectors distinguish easily the genera *Mariscus*, *Pycreus* and *Killingia* in the field; these genera are now considered subgenera of *Cyperus*".

It is true that the distinction between *Cyperus* and *Mariscus* is sometimes doubtful, e.g., in *Cyperus distans* L. f. certain specimens have some spikelets falling off as intact units (*Mariscus* character), whereas other spikelets on the same plant have glumes breaking off from a persistent rachilla (*Cyperus* character), fide Haines & Lye, Sedges & rushes E. Afr.: 200, 1983.

Other species are difficult to place in a particular subdivision of the genus *Cyperus*, e.g. *C. vandervekenii*, due to the strong reduction of most parts of the plant (Reynders & al. in Novon 16: 513, 2006). Further, *C. micromariscus* is intermediate between *Pycreus* and *Mariscus* (Lye in Nord. J. Bot. 3: 215, 1983). And also, some species are doubtfully distinct from each other, such as *C. dichrostachyus* – *C. difformis*, *C. denudatus* – *C. haspan*, etc. There is a very confused and often confusing group of taxa: *C. ajax*, *C. derreilema*, *C. fischerianus*, *C. glaucophyllus*, *C. laxus*, and even *C. renschii*. And also *C. articulatus* L. and *C. corymbosus* Rottb. are sometimes considered as conspecific (See S. Afric. J. Bot. 72: 147–149, 2006).

* * *

Some *Cyperus* species are characteristic by their yellow, golden brown, golden to bright yellow orange spikelets: *C. altochrysocephalus*, *C. boreochrysocephalus*, *C. chrysocephalus*, *C. digitatus* subsp. *auricomus, C. esculentus*, *C. karlschumannii*, *C. kibweanus*, and *C. permacer*.

AYENI, O. B. & al. (2015). Leaf anatomical characters in relation to the C_3 and C_4 photosynthetic pathway in Cyperus (Cyperaceae). *Nord J. Bot.* 33: 318–323.

BAJPAI, U. & al. (2003). SEM studies in the fruit morphology of the genus Cyperus (Cyperaceae). *Phytomorphology* 53: 113–122.

BAUTERS, K. & al. (2014). A new classification for Lipocarpha and Volkiella as infrageneric taxa of Cyperus s.l. (Cypereae, Cyperoideae, Cyperaceae): insights from species tree reconstruction supplemented with morphological and floral development data. *Phytotaxa* 166: 1–32.

GARCÍA-MADRID, A. S. & al. (2015). Towards resolving phylogenetic relationships in the Ficinia clade and description of the new genus Afroscirpoides (Cyperaceae: Cypereae). *Taxon* 64: 688–702.

GORDON-GRAY, K. D. & al. (2009). Studies in Cyperaceae in southern Africa 42: Pseudo-vivipary in South African Cyperaceae. *S. Afric. J. Bot.* 75: 165–171.

GUARISE, N. J. & A. C. VEGETTI (2008). The inflorescences structure of Cyperus L. section Luzuloidei Kunth (Cyperaceae). *Pl. Syst. Evol.* 271: 41–63.

GUARISE, N. J. & al. (2012). Multiple origins of congested inflorescences in Cyperus s.s. (Cyperaceae): Developmental and structural evidence. *Amer. J. Bot.* 99: 1276–1288.

HUYGH, W. & al. (2010). Nomenclature and typification of names of genera and subdivisions of genera in Cypereae (Cyperaceae): 1. Names of genera in the Cyperus clade. *Taxon* 59: 1883–1890.

KOYAMA, T. (1960). Some transfers of names related to Cyperaceae. *Bot. Mag., Tokyo* 73: 438.

LARRIDON, I. & al. (2010). C_3 Cyperus (Cyperaceae). *Scripta Bot. Belg*. 48: 62.

LARRIDON, I. & al. (2011a). Affinities in C_3 Cyperus lineages (Cyperaceae) revealed using molecular phylogenetic data and carbon isotope analysis. *Bot. J. Linn. Soc.* 167: 19–46.

LARRIDON, I. & al. (2011b). Taxonomic changes in C_3 Cyperus (Cyperaceae) supported by molecular data, morphology, embryography, ontogeny and anatomy. *Pl. Ecol. Evol.* 144: 327–356.

LARRIDON, I & al. (2011c). Nomenclature and typification of names of genera and subdivisions of genera in Cypereae (Cyperaceae): 2. Names of subdivisions of Cyperus. *Taxon* 60: 868–884.

LARRIDON, I. & al. (2013). Towards a new classification of the giant paraphyletic genus Cyperus (Cyperaceae): phylogenetic relationships and generic delimitation in C_4 Cyperus. *Bot. J. Linn. Soc.* 172: 106–126.

LARRIDON, I. & al. (2014). A new understanding of the giant genus Cyperus: impacts on African plant taxonomy. *Scripta Bot. Belg. – AETFAT XX*: 235.

MUASYA, A. M. & al. (2002a). Generic relationships and character evolution in Cyperus s.l. (Cyperaceae). *Syst. Geogr. Pl.* 71: 539–544.

MUASYA, A. M. & al. (2002b). Phylogenetic relationships in Cyperus s.l. (Cyperaceae) inferred from plastid DNA sequence data. *Bot. J. Linn. Soc.* 138: 145–153.

REID, C. S. & al. (2014). Phylogenetic insights into New World Cyperus (Cyperaceae) using nuclear ITS sequences. *Brittonia* 66: 292–305.

REID, C. S. & al. (2017). Molecular systematics of targeted flat sedges (Cyperus, Cyperaceae) of the Americas. *Pl. Ecol. Evol.* 150: 343–357.

REYNDERS, M. & al. (2011). Nomenclature and typification of names of genera and subdivisions of genera in the Cypereae (Cyperaceae): 3. Names in segregate genera of Cyperus. *Taxon* 60: 885–895.

SHALABI, L. F. & M. H. GAZER (2015). The taxonomic significance of achene micro- and macro-morphology in Cyperus L. (Cyperaceae). *Pakist. J. Bot.* 47: 2339–2346.

UBERTI, N. & al. (2016). Spikelet structure in Cypereae (Cyperoideae-Cyperaceae). *Bot. Rev.* 82: 239–257.

VÄRE, H. & I. KUKKONEN (2006). Typification of names in Cyperus section Arenarii (Cyperaceae). *Nord. J. Bot.* 24: 279–294.

VERLOOVE, F. (2014). A conspectus of Cyperus s. l. (Cyperaceae) in Europe (incl. Azores, Madeira and Canary Islands), with emphasis on non-native naturalized species. *Webbia* 69: 179–223.

VOZNESENSKAYA, E. V. (2014). Structural bases of C_4 photosynthesis. *In: Programme of events devoted to the 300-years anniversary of the Komarov Botanical Institute of the Russian Academy of Sciences. International Conference "The botany: history, theory, practice (June, 24–25, 2014). Programme and Abstracts"*: 6–8.

VRIJDAGHS, A. & al. (2011). Morphology and development of spikelets and flowers in Cyperus and Pycreus (Cyperaceae). *Pl. Ecol. Evol.* 144: 44–63.

Cyperus abietinus (Goetgh.) Bauters – See below under **Lipocarpha abietina** Goetgh.

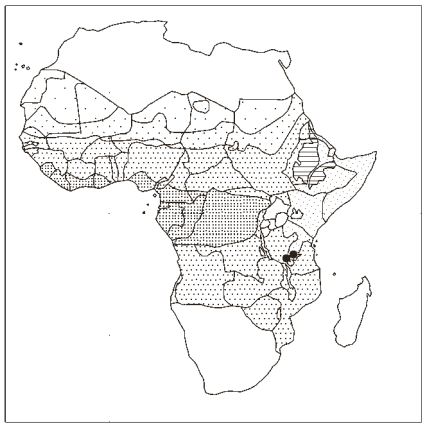
C. absconditicoronatus Bauters, Reynders & Goetgh. – See below under **Mariscus absconditicoronatus** (Bauters, Reynders & Goetgh.) J.-P. Lebrun & Stork

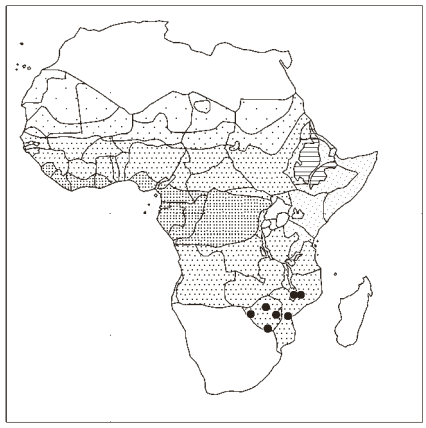
C. acaulescens Reynders – See below under **Pycreus acaulis** Nelmes

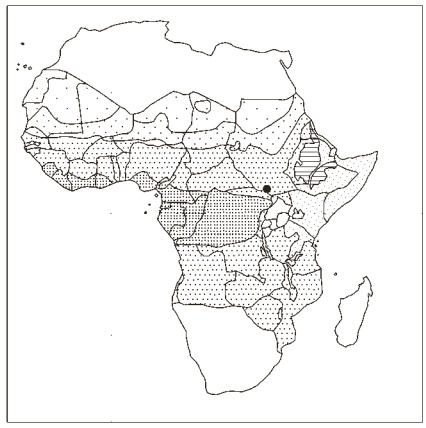
C. acholiensis Larridon – See below under **Kyllingiella ugandensis** R. W. Haines & Lye

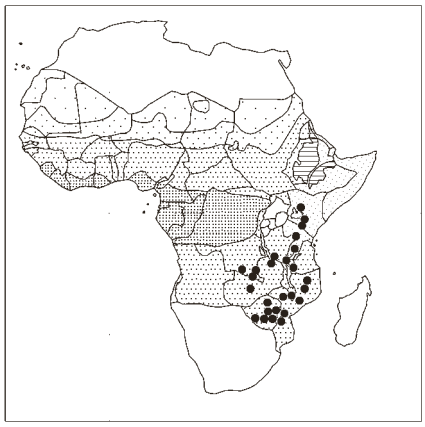
C. acuticarinatus Kük. – See below under **Pycreus acuticarinatus** (Kük.) Cherm.

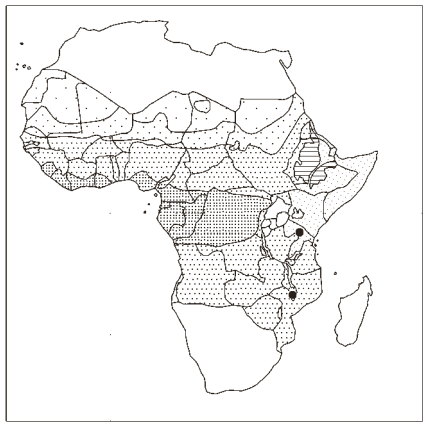
C. aethiops Welw. ex Ridl. – See below under **Pycreus aethiops** (Welw. ex Ridl.) C. B. Clarke

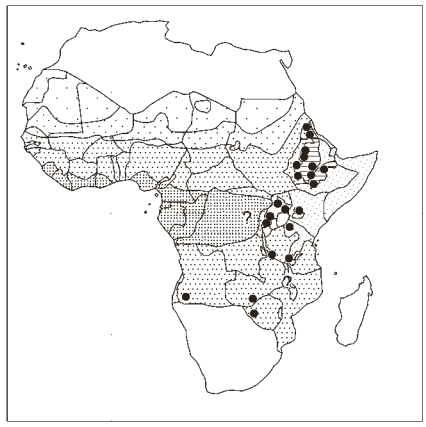

Coleochloa microcephala

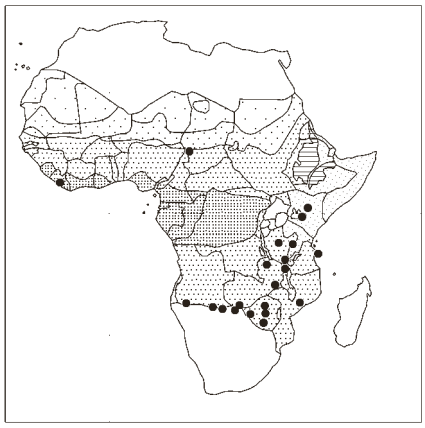

Coleochloa pallidior

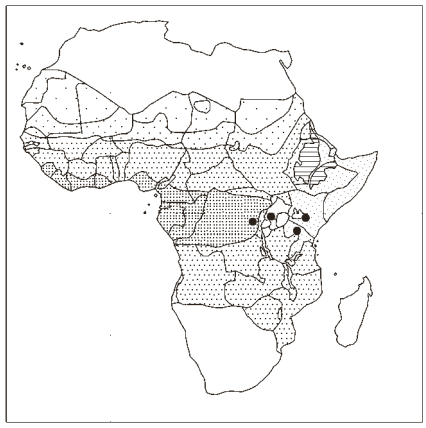

Coleochloa schweinfurthiana

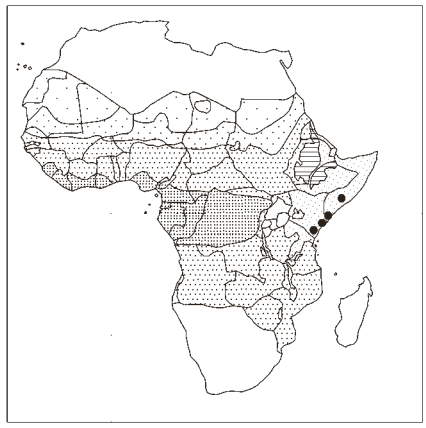

Coleochloa setifera

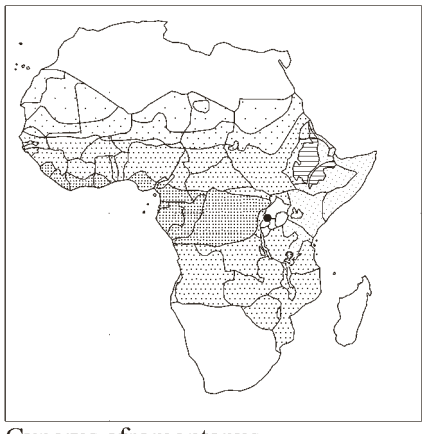

Coleochloa virgata

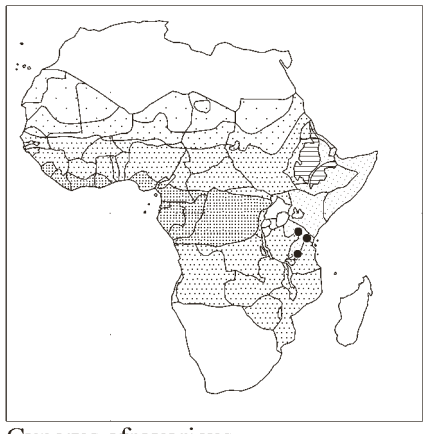

Courtoisina assimilis

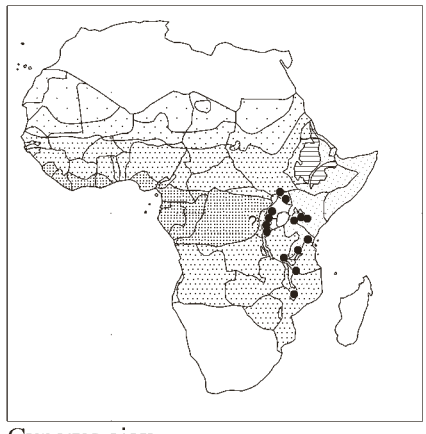

Courtoisina cyperoides


Cyperus afroalpinus


Cyperus afrodunensis


Cyperus afromontanus


Cyperus afrovaricus


Cyperus ajax

C. africanus (S. S. Hooper) Reynders – See below under **Pycreus africanus** (S. S. Hooper) Reynders

C. afro-occidentalis (Lye) Huygh – See below under **Kyllinga afro-occidentalis** Lye

C. afroalpinus Lye; Fl. Trop. E. Afr., Cyper.: 162, 2010. – Icon.: Nord. J. Bot. 3: 226, 1983; Haines & Lye, Sedges & rushes E. Afr.: 161, 1983.

Perennial herb with short rhizome, to 40 cm tall; culms many, crowded, 24,5−36 cm long, 1−1,6 mm ∅, *trigonous*; leaves to 31 cm long; sheath 3−7 cm long; blade linear, flat, 19−24 cm × 2−3,5 mm; inflorescence capitate or anthelate, simple, spikelets in a dense cluster, 3−7 per cluster, ovate-lanceolate, 4−7,5 × 2−2,7 mm; stamens 3; nutlet ellipsoid, 1−1,5 mm long, apiculate, strongly papillose.

Clearings in forest, bamboo and giant heath; swampy areas; grassland; roadside banks; 1150−3000 m alt.

C. afrodunensis Lye; Thulin, Fl. Somalia 4: 122, 124, 1995; Fl. Trop. E. Afr., Cyper.: 227, 2010. – Icon.: Nord. J. Bot. 3: 222, 1983; Haines & Lye, Sedges & rushes E. Afr.: 191, 1983.

Perennial herb to 52 cm tall, producing *very slender stolons ending in bulbs*; stolons to 5 cm long, 0,5−0,8 mm ∅; bulbs 2−2,5 cm long, c. 1 cm ∅; culms few, 15−40 cm long, 1,5−2,7 mm ∅, *trigonous*; leaves to 46 cm long; sheath 3−8 cm long; blade linear, flat at base 5−10 cm long, higher up 10−38 cm long, 3−8 mm wide; inflorescence a simple anthela, primary branches 7−8, 3−5 cm long; spikelets *rather turgid*, in lax, ± digitate groups, 4−12 per cluster, linear-lanceolate, 8−20 mm long; stamens 3; nutlet obovoid-trigonous, c. 2 mm long, minutely papillose.

Sand dunes; sandy soil near sea-shore; more rarely a weed in gardens and sandy cotton fields; sea-level.

C. afromontanus Lye; Fl. Trop. E. Afr., Cyper.: 207−208, 2010. – Icon.: Nord. J. Bot. 3: 225, 1983; Haines & Lye, Sedges and rushes E. Afr.: 158, 1983.

Perennial herb, densely tufted, to 55 cm tall with creeping rhizome; culms many, crowded, 48−51 cm long, 1,3−1,6 mm ∅, *trigonous*; leaves to 38 cm long; sheath 3−6 cm long; blade rather stiff, flat, 18−32 cm long, 3,2−5,1 mm wide; inflorescence a simple anthela, primary branches 3−6, 1−2,5 cm long; spikelets in digitate clusters, sessile and at the end of primary branches, 3−5 per cluster, linear-lanceolate, 5−13 mm long; stamens 3; nutlet reddish-brown, ellipsoid, 1−1,3 mm long, ± smooth.

Edge of bamboo forest; [edge of natural forest; in grassland; ? 2100−]2450 m alt.

Record from Tanzania, Poroto Mts, uncertain (cf. Fl. Trop. E. Afr., l.c.).

Known only from the type ? (Uganda, collected in 1951) and ? another collection (Tanzania, collected in 1970).

C. afropumilus (Lye) Lye – See below under **Kyllinga afropumila** Lye

C. afrorobustus Lye – See below under **Kyllinga pumila** Michx.

C. afrovaricus Lye; Fl. Trop. E. Afr., Cyper.: 220, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 209, 1983.

Perennial tussocky herb to 64 cm tall; culms tufted, 30−60 cm long, 1−2,5 mm ∅, *trigonous,* base cylindric and slightly swollen; leaves to 36 cm long; basal sheaths splitting into fibres, 7−10 cm long; blade linear, flat, to 19−31 cm × 1,9−3 mm; inflorescence a simple anthela; primary branches 2−5, 0,5−3 cm long; spikelets in very densely crowded spherical spikes 7−11 mm long; spikelets lanceolate, 3−4 mm long, falling off entirely when mature; stamens 3; mature nutlet not known.

Seasonally wet habitats; rock crevices; shallow soil over rocks; 1900−2250 m alt.

C. ajax C. B. Clarke; Troupin, Fl. Rwanda 4: 440, 1988; Fl. Trop. E. Afr., Cyper.: 202, 2010; Gereau & al., Lake Nyasa florist. checklist: 46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 155, 1983.

syn.: *C. derreilema* Steud. var. *ajax* (C. B. Clarke) Kük.

Perennial herb, robust, to 2,1 m tall, with thick woody rhizome to 1,2 cm ∅; culms 0,85−2 m long, 4−7 mm ∅, *trigonous*; leaves many, crowded, to 2,15 m long; sheath reddish-brown, 4−14 cm long; blade linear, flat, 0,6−2 m long, 1,4−3,7 cm wide; inflorescence compound, primary branches 6-many, 3−20 cm long; spikelets in digitate clusters, sessile and at the end of primary, secondary and tertiary branches, 3−7 per cluster, ± lanceolate, 3−6 mm long; glumes mucronate; stamens 3; nutlet ellipsoid, c. 1 mm long.

Thickets; open and degraded forests; sometimes along riverbanks; swamps; forest gallery; spray zone below waterfall on river; 950−2850 m alt.

C. alatus (Nees) F. Muell. – See below under **Kyllinga alba** Nees

C. albescens (Steud.) Larridon & Govaerts – See below under **Lipocarpha chinensis** (Osbeck) J. Kern

C. albiceps Ridl. – See below under **Kyllinga albiceps** (Ridl.) Rendle

C. albogracilis (Lye) Lye – See below under **Kyllinga albogracilis** Lye

C. albopilosus (C. B. Clarke) Kük. – See below under **Mariscus albopilosus** C. B. Clarke

C. albosanguineus Kük. – See below under **Mariscus albosanguineus** (Kük.) Napper

C. albostriatus Schrad., incl. var. *mossii* (Turrill) Kük.; Sabonet News 8/1: 17−18, 2003. – Icon.: Bot. Surv. S. Africa, Mem. 3: pl. XV, 1922; Gordon-Gray, Cyper. Natal in Strelitzia 2: 50, 1995 (nutlet); Richardson & King in J. Bot. Res. Inst. Texas 6: 300, 2012.

syn.: *C. mariscus* Nees; *C. braunii* Vatke; *C. mossii* Turrill; *C. diffusus* misapplied and *C. elegans* misapplied (cf. Europ. Gard. Fl., ed. 2, 1: 415, 2011).

Perennial herb with elongate rhizomes, irregularly tuberous; culms 18−60 cm tall, leafy, *trigonous at top*; leaves numerous, all near the stem base, as long as the stem or only 1/2 that length; leaves and bracts with *3 main veins* that become *whitish*; inflorescence anthelate, open, graceful, with thread-like branches, often 8−24, of different length, some of which carry only solitary spikelets but on others spikelets are digitately clustered; spikes lanceolate, 6−13 mm long, single or in groups of 2−4.

Wetland.

Namibia, S. Africa, Botswana, Swaziland, Lesotho. Adventive in Australia, New Zealand as a weed in gardens and waste places

(Kew Bull. 56: 281, 2001) and in USA: Texas, Florida (Richardson & King, l.c.).

A decorative pot plant (ornamental); var. 'Variegatus' has longitudinally striped leaves and bracts.

C. alopecuroides Rottb. 1773, non J. Koenig ex Roxb. 1820 (= *C. exaltatus*), nec Thunb. 1794 (= *C. thunbergii*); incl. var. *digynus* Boeckeler, and fa. *pallidiflorus* (Peter) Kük. and fa. *latifolius* Peter ex Kük., but excl. var. *dives* Boeckeler and var. *microstachys* Boeckeler (both = *C. exaltatus* var. *dives*); Fl. W. Trop. Afr., ed. 2, 3/2: 285, 1972; Gordon-Gray, Cyper. Natal: 53, 1995; Thulin, Fl. Somalia 4: 120, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Naczi & Ford, Sedges: uses…: 39, 2008; Fl. Trop. E. Afr., Cyper.: 219, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012 (with maps by Schmidt & al. in Phytotaxa 304: 75, 2017); Thiam & al. in Webbia 68: 179, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 181, 1983; Berhaut, Fl. ill. Sénégal 9: 172−173, 1988; Fl. Eth. & Eritrea 6: 445, 1997; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 92, 2001; Phytomorphology 53: 115, 2003 (nutlets); Cook, Aquat. & wetland pl. south. Afr.: 88, 2004; Boulos, Fl. Egypt 4: 379, 2005; Candollea 61: 370−372, 2006.

syn.: *Juncellus alopecuroides* (Rottb.) C. B. Clarke; *J. pallidiflorus* Peter; *Cyperus fastigiatus* Forssk.; *C. exaltatus* Retz. var. *digynus* (Boeckeler) F. N. Williams; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. – See also Note below.

Perennial tufted herb 0,5−1,7 m tall; culms few, 0,2−1,4 m long, 3,5−8,4 mm ∅, *trigonous*; leaves basally crowded, 3−5, to 1 m long; sheath 7−31 cm long; blade leathery, linear, flat to W-shaped, 37−75 cm long, 4−15 mm wide; inflorescence a compound anthela, primary branches 6−10, 3−20 cm long; involucral bracts leaf-like, 4−7, the lower ones overtopping the inflorescence; spikelets in crowded clusters, many per cluster, sessile at end of primary, secondary (and tertiary) branches; spikelets ovoid, 2−6 mm long, 10−30-flowered.

Swamps; seasonally wet grassland; old cultivations; on wet silt; river beds; margins of lakes; in standing water; rice-fields; 0−2100 m alt.

Madeira; Canary Isl. (Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 114, 2010); Cape Verde Isl.; Egypt; S. Africa, Botswana, Swaziland; Madagascar, Seychelles; Sicily (Candollea 61: 366, 2006); Arabia, Yemen (Wood, Handbook Yemen flora: 323, 1997); Palestine; S Asia from Pakistan, Sri Lanka – India, Indo-China, Java to N Australia. In the New World (probably introduced) known from Guadaloupe in the W. Indies, and in USA, Florida.

Culms used for fibres: matting and rush-bottomed chairs. – Grown for the reclamation of saline land; ornamental (Kew Bull. 56: 281, 2001). A contaminant of nursery stock.

Note: Boulos (Fl. Egypt 4: 380, 2005) put *C. dives* Delile as a synonym under *C. alopecuroides*. "*C. dives* was described as having long inflorescence branches, narrow keeled glumes, 3 stamens, 3 stigmas and 3-sided nutlets. *C. alopecuroides* was described as less robust… having short branches, broad and flat, keeled glumes, 2 stamens, 2 stigmas and plano-convex nutlets. These characters are not constant. Many specimens were examined in which flowers on the same plant were found to have 2 or 3 stigmas… and the nutlet is either plano-convex or unequally 3-sided. Therefore both species are treated here as conspecific…".

C. alternifolius L. 1767, non Vahl 1806 ("*alterniflorus*" sphalm.), non *C. alterniflorus* R. Br. 1810 (Australia); subsp. **flabelliformis**

Kük. – In some floras and flora lists figuring as *C. involucratus* Rottb. 1772. – Brunel & al., Fl. analyt. Togo in Englera 4: 536, 1984; Burkill, Useful plantes W. Trop. Afr., ed. 2, 1: 609, 1985; Berhaut, Fl. ill. Sénégal 9: 171, 1988; Thulin, Fl. Somalia 4: 116−117, 1995; Fl. Eth. & Eritrea 6: 435, 1997; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 76, 2001; Lisowski, Fl. Rép. Guinée 1: 394, 2009; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 114, 116, 2010 (under *C. involucratus*). – Icon.: Baijnath in Kew Bull. 30: 520, 523, 1975 (nutlet); Nord. J. Bot. 1: 58, 1981; Haines & Lye, Sedges & rushes E. Afr.: 154, 1983 (as *C. involucratus*); Gordon-Gray, Cyper. Natal: 52, 1995 (nutlet, text p. 53−54); Fl. Pakistan, Cyper.: 115, 2001; Boulos, Fl. Egypt 4: 373, 2005; Gordon-Gray & al. in S. Afric. J. Bot. 75: 168, 2009 (inflorescence, pseudo-vivipary; as *C. involucratus*); Fl. Trop. E. Afr., Cyper.: 188, 2010 (idem); Fl. China 23, Ill.: 297, 2012 (idem); Verloove in Webbia 69: 192, 2014; Fl. Mascareignes 202, Cyper.: 41, 2018.

syn.: *C. involucratus* Rottb. 1772; *C. flabelliformis* Rottb. 1773, nom. superfl.; *C. alternifolius* var. *flabelliformis* (Rottb.) M. R. Almeida; *C. gradatus* Forssk.; *C. ginge* Welw. 1859, (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 114, 1899); *C. flagellatus* Hochst.; *C. proximus* Steud.; *C. petersianus* Boeckeler; *C. alternifolius* var. *petersianus* (Boeckeler) Kük., and var. *albovariegatus* auct., and '*variegatus*' Hovey, Nursery Cat. 1882; *C. flabelliformis* var. *obtusangulus* Boeckeler; *C. alternifolius* subsp. *flabelliformis* var. *macrostachys* Robyns & Tournay, Bull. Jard. Bot. Etat Brux. 25: 246, 1955 (cf. Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 232, 1955). – Kartesz & Gandhi in Phytologia 72: 20, 1992, distinguish *C. alternifolius* **and** *C. involucratus* for N. America. They cite *C. alternifolius* L. subsp. *flabelliformis* (Rottb. 1773) Kük. 1936 as a synonym of *C. involucratus*.

"This taxon is perhaps better known as *C. involucratus*. It has long been confused with *C. alternifolius* s. str. but is more frequently cultivated as an ornamental and also more common as an escape, although genuine *C. alternifolius* is also increasingly found outside its area of origin (Madagascar and Réunion) … Several authors have discussed their separation… but not all features provided by these authors proved to be reliable and some were in fact inconsistent or simple erroneous. Both seem to be best opposed by their nutlets. subsp. *flabelliformis* has smaller, obovoid nutlets, c. 0,4−0,8 mm long and less than half the glume length (versus elliptic nutlets c. 1,1−1,4 mm long and more than half the glume length). Also glumes tend to be broadly ellipsoid in subsp. *flabelliformis* but lanceolate in subsp. *alternifolius*. Nutlet versus scale length is an important distinguishing feature… perhaps the only reliable one. Culm characters can be indicative as well: culms of subsp. *flabelliformis* are often… scabrous (versus always smooth in subsp. *alternifolius*)" (Verloove in Webbia 69: 191, 2014).

Perennial herb with creeping rhizome 2−10 mm ∅ and several culms usually placed in a straight row; culms 0,25−2 m tall, 1,5−8 mm ∅ (but 12 mm across the sheaths), rounded, basal part covered with sheaths and shorter black scales; leaf blade absent or the uppermost sheaths with a 1−8 cm long somewhat leafy limb; inflorescence a compound anthela 5−25 cm ∅, 2−3 times branched, subtended by 15−25 leafy involucral linear bracts 10−38 cm long, 0,3−2 cm wide, spirally arranged; primary branches 6−28, subequal, 3−10 cm long; secondary branches 1−3 cm, with tertiary branches; spikes with 3−15 digitately arranged spikelets, ± spherical; spikelets lanceolate, 2−12 mm long, 15−40-flowered.

Swamps; wet grasslands; streambanks; lake shores; 30−2400 m alt.

Madeira; Canary Islands; Cape Verde Islands (García de Orta, Sér. Bot. 16: 22, 2002); Algeria, Tunisia, Egypt; Italy, Po Plain

(Webbia 72: 129, 2017); S. Africa; Madagascar (perhaps native only here), Réunion, Mauritius; Yemen (Wood, Handbook Yemen flora: 323, 1997); Iraq, Iran, Pakistan, India, Taiwan (first introduced and planted in 1901, from Japan, as an ornamental; Taiwania 53: 311−315, 2008, with figs.; as *C. involucratus*), Japan, China (Fl. China 23, texts: 223−224, 2010, *C. involucratus*, *C. alternifolius*); USA, naturalised in Florida, Louisiana, Texas, California where the plant is occasionally found in moist to hydric soils of roadside ditches, stream banks, vacant lots and other disturbed sites (Naczi & Ford, l.c.); Jamaica, West Indies; cultivated in warm areas of Old and New World. "Native of E. and S. Africa and introduced to W. Africa and to other areas of the tropics" (Burkill, l.c.).

C. alternifolius L. also comprises: – subsp. **alternifolius** in E Madagascar [syn.: *C. onustus* Steud.; *C. alternifolius* var. *gracilis* Pynaert, Nursery Cat. 1894]; – subsp. **textilis** (Thunb.) Verloove in S. Africa, naturalised in Europe [bas.: *C. textilis* Thunb.; syn.: *C. asperifolius* Desf.; *C. burchellii* Schrad.; *C. smithii* Schrad.; *Eucyperus textilis* (Thunb.) Rikli; *E. pungens* Rikli]; fig. in Webbia 69: 194, 2014.

"Used as an ornamental in water gardens and as a potted plant for more than 200 years" (Naczi & Ford, Sedges: uses…: 38, 2008); as home plant under the name papyrus; escape of cultivation along canals and around ponds. For economic uses, See Kew Bull. 56: 282, 2001.

C. altochrysocephalus Lye – Icon.: Candollea 43: 510, 1988; Nord. J. Bot. 13: 509−510, 1993 (details).

Perennial herb with a woody horizontal rhizome producing a single culm at end, and covered in *densely imbricated* scales stuck together by a purple glue; young rhizomes produced at base of culm, *densely covered* by pallid or light *reddish brown multi-nerved scales*, *tips bright purple*; the purple patches are very sticky and usually covered by minute mineral particles particularly quartz grains; culm 80−90 cm long, 1,5−5 mm ∅, *triangular to winged*, scabrid on angles; leaves 5, widely spaced, to 20 cm high on the culm; blades flat, 18−65 cm long, 8−10 mm wide, margins and keel of midrib scabrous; inflorescence a congested *yellow-orange head* c. 15 mm ∅, consisting of numerous crowded lanceolate spikelets each 7−8 mm long.

Woodland in sandy area at edge of watershed grassland.

Known from only 2 collections, but likely to turn up in adjacent parts of Angola and Zaire.

C. altomicroglumis Lye – Icon.: Thulin, Fl. Somalia 4: 118, 1995; Lye in Bull. Jard. Bot. Natl. Belg. 65: 251−252, 1996.

Perennial herb with a rhizome producing many crowded stems; these 50−80 cm long, 2−3 mm ∅, triangular at least below inflorescence, glabrous; leaves many; the two uppermost leaf sheaths usually developing blades 5−20 cm long, 2−4 mm wide; inflorescence lax, 3−9 cm ∅, of 1-several (sub-)sessile clusters of spikelets subtended by new groups of sessile and stalked digitately arranged clusters of spikelets on up to 4 cm long major branches; involucral bracts leafy, to 20 cm long.

Damp ground near a spring; c. 200−375 m alt.

C. amabilis Vahl, incl. var. *macrostachyus* (Boeckeler) Kük. and var. *macra* C. B. Clarke and var. *subacaulis* Kük. and var. *oligostachyus* (Kunth) Kük., but excl. var. *pseudocastaneus* Kük. (= *C. tenax*); Renier, Fl. Kwango 1: 71, 1948; Simpson & Inglis in Kew Bull. 56: 282−283, 2001; Archer & Craven, Cyper. Namibia: 19, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Akoègninou & al., Fl. analyt. Bénin: 90, 2006; Figueiredo

& Smith, Pl. Angola: 179, 2008; Naczi & Ford, Sedges: uses…: 43, 2008; Lisowski, Fl. Rép. Guinée 1: 395, 2009. – Icon.: Engler, Pflanzenfam. IV. 20/101: 263, 1936; Haines & Lye, Sedges & rushes E. Afr.: 267, 1983; Berhaut, Fl. ill. Sénégal 9: 174, 1988; Thulin, Fl. Somal. 4: 123, 1995; Fl. Eth. & Eritrea 6: 461, 1997 (as *C. castaneus* subsp. *amabilis*); J. Econ. & Taxon. Bot., Add. Ser. 21: 78, 2002 (India, Karnataka); Fl. Trop. E. Afr., Cyper.: 159, 2010; Fl. Gabon 44, Cyper.: 39, 2012.

syn.: *C. microstachyus* Vahl; *C. aureus* Kunth 1816, nom. illeg.; *C. oligostachyus* Kunth; *C. aureus* var. *oligostachyus* (Kunth) Boeckeler and var. *macrostachyus* Boeckeler; *C. muelleri* Boeckeler; *C. castaneus* Willd. subsp. *amabilis* (Vahl) Lye, ined.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb 7−31 cm tall with solitary or more often tufted culms 5−27 cm long, 0,5−1,8 mm ∅, trigonous, glabrous; leaves to 16 cm long; sheaths 0,5−3 cm long, *purplish-red*; blade 1,5−13 cm long, 1−2,5 mm wide, apex acuminate; inflorescence an open anthela, capitate, more often simple, occasionally compound; primary branches 3−10, 1,5−9 cm long; spikelets in digitate, ovoid clusters, sessile at end of primary branches (when present secondary branches 5−25 per cluster); glumes *pale orange brown*, *reddish brown* or *golden brown*; spikelets linear, 3−17 mm long.

Gravelly places flooded in rainy season; seasonally wet habitats; often on sandy or silty soils near roads, lakes, swamps; sandy hollow on rocky soil; open savanna; cultivated or waste ground; *Hyparrhenia* woodland; abandoned fields; open savanna cultivated on waste ground; (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 609−610, 1985); thicket-grown pastures flooded in rainy season; sandy woods; forming the weed community of arable fields: *Cypero amabilis – Spermacocetum filifoliae* ass. (Witty & al. in Phytocoenologia 41: 130, 2011); near sea-level – 2700 m alt.

Cape Verde Isl. (introd., Scripta Bot. Belg. 50: 375, 2013); Socotra; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Comoros; Asia, India to Vietnam; S N. America, C. America, S. America. "Widely distributed in tropical and subtropical, and warm temperate regions of both E. and W. hemispheres".

C. amauropus Steud. – See below under **Mariscus amauropus** (Steud.) Cufod.

C. ampullaceus (J. Raynal) Bauters – See above under **Ascolepis ampullacea** J. Raynal

C. angolensis Boeckeler, incl. var. *amplibulbus* (!) Peter & Kük.; Renier, Flore Kwango 1: 71, 1948; Jaeger & Adam, Végét. vascul. Mts Loma 2: 215, 1981; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 76, 2006; Fl. Trop. E. Afr., Cyper.: 167, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon.: Boissiera 33: 216, 1981; Haines & Lye, Sedges & rushes E. Afr.: 255, 1983; Flora 176: 68, 1985; Troupin, Fl. Rwanda 4: 439, 1988; Fl. Gabon 44, Cyper.: 41, 2012.

syn.: *C. ochrocephalus* C. B. Clarke 1894, non Steud. 1842 (= *C. eragrostis* Lam.), nom. illeg.; *C. obtusiflorus* Vahl, p.p., var. '*Stylo bifido*' Ridl., Trans. Linn. Soc., Ser. 2, 2: 132, 1894.

Perennial stoloniferous herb with solitary culms from swollen stem bases or bulbs; stolons 1−11 cm long, 2−6 mm ∅, densely covered by brown scales sometimes split into fibres; culms 14−140 cm long, trigonous, smooth, basal part covered in leaf sheaths; leaves to 64 cm long, sheaths 2,5−10 cm long; blades linear, 7−56 cm long, 3,5−8 mm wide, margins and primary vein

scabrid, apex acuminate; inflorescence a congested anthela, capitate, 1,5−2 cm ∅; spikelets numerous per head, ovoid, 6−11 mm long, creamy or grayish white to sometimes pinkish; involucral bracts leaf-like, 3−4, 2,5−13 cm long.

Clefts in rocks; *Loudetia arundinacea* grassland on shallow soil recently burnt; *Hyparrhenia*, *Exotheca* grassland; savanna with *Kotschya lutea*; dry grassland with shrubs and scattered trees; often in places where burning is frequent; grassland on gravelly soil; on low rather dry hills; 0−2650 m alt.

S. Africa.

"A bulb is formed at the base of each year's culm. These solitary bulbs, arranged in rows are especially conspicuous in *C. angolensis*, in which they are nearly woody and particularly well protected by very tough scales. They contain considerable water reserves, even after several months of drought as shown e.g. by the 53 % loss of weight in bulbs of *C. angolensis* collected at the end of the dry season, in October, and dried for further 9 months"; (Flora 176: 67, 1985).

C. aromaticus (Ridl.) Mattf. & Kük. and var. *elatior* (Kunth) Kük. (= *Kyllinga ruwenzoriensis* C. B. Clarke) – See below under **Kyllinga polyphylla** Willd. ex Kunth

C. articulatus L. 1753, non Benth. 1844 (nom. illeg.); incl. var. *nodosus* (Humb. & Bonpl. ex Willd.) Kük., var. *conglomeratus* Britton, var. *erythrostachys* Graebn., var. *fistulosus* Kük., var. *multiflorus* Kük., and fa. *longispiculosus* Kük.; Renier, Fl. Kwango 1: 71, 1948; Gordon-Gray, Cyper. Natal: 54, 1995; Akoègninou & al., Fl. analyt. Bénin: 90, 2006; Naczi & Ford, Sedges: uses: …: 40, 2008; Figueiredo & Smith, Pl. Angola: 179, 2008; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 114, 2010; Fl. Trop. E. Afr., Cyper.: 208−209, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 110, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012 (map by Schmidt & al., Phytotaxa 304: 76, 2017); Thiam & al. in Webbia 68: 179, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 227, 1955; Haines & Lye, Sedges & rushes E. Afr.: 183, 1983; Berhaut, Fl. ill. Sénégal 9: 175, 1988; Troupin, Fl. Rwanda 4: 439, 1988; Fl. Eth. & Eritrea 6: 447, 1997; Cook, Aquat. & wetland pl. south. Afr.: 89, 2004; Boulos, Fl. Egypt 4: 381, 2005; Lisowski, Fl. Rép. Guinée 2: fig. 483, 2009; Malaisse, Guide florist. Parc Natl. Cantanhez (Guinée-Bissau): pl. 728, 2010; Fl. Gabon 44, Cyper.: 41, 2012; Fl. Mascareignes 202, Cyp.: 35, 2018.

syn.: *C. niloticus* Forssk.; *C. nodosus* Humb. & Bonpl. ex Willd., incl. var. *aphyllus* Boeckeler and var. *subnodosus* (Nees & Meyen) Boeckeler; *C. articulatus* Benth. 1844; *C. borbonicus* Steud.; *Chlorocyperus articulatus* (L.) Rikli; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial leafless herb to c. 2 m tall with solitary culms from the end of stolons; stolons ± woody, to 10 cm long, 2−8 mm ∅, clothed with blackish or purple scales; culms few, 0,6−1,6 m long, 3−14 mm ∅, rounded, pith-filled, with *traverse ring*s at 0,5−5 cm intervals, *only lower part covered with 3−5 sheaths*, the very base swollen and woody; leaves reduced to sheaths 3−28 cm long ending in a triangular limb; inflorescence a compound terminal lax anthela 4−15 cm ∅ with 1−3 sessile spikelet clusters and 2−10 pendunculate clusters of ± new sessile and stalked clusters; primary branches 5−8, 1−10 cm long; inflorescence bracts scale-like; spikelets cigar-shaped, 0,5−5 cm long, 20−50-flowered.

River sand banks; growing gregariously on marshy river banks with *Phoenix spinosa*; growing with *Limnophyton obtusifolium* at edges of lake; subruderal near forest gallery; around a pond

with *Pistia stratiotes*; swamps; lake-shores; wet grasslands; in or near open water; often in standing water; widely reported as a weed, crops, rice fields; cultivated around dwelling places and on channels of sandy fields for retaining banks (erosion control) often occurring in pure stands; 0−1970 m alt.

There are many variants (hybrids ?, introgression ?).

Cape Verde Islands (Garcia de Orta, Sér. Bot. 16: 23, 2002, Santo Antão); Bioko/Fernando Poo; Algeria, Egypt; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Mauritius, Réunion, Seychelles; Arabia, Yemen (Wood, Handbook Yemen flora: 323, 1997), Palestine, Iran, India, Sri Lanka; Australia; Americas: SE USA near the coast, to C. & S. America. Type from Jamaica. – Pantropical; "ranges widely in tropical, subtropical, and warm temperate regions around the world" (Naczi & Ford, l.c.).

Dry stems can be used for roofing and mat making; rhizomes used as necklaces in Senegal; "root tubers pleasantly aromatic fragrant". For economic aspects (food materials, medicines, erosion control, etc.), See Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 610−611, 1985; Simpson & Inglis in Kew Bull. 56: 283−285, 2001.

Easily recognised by its septate stems, absence of leaf blades. – "In southern Africa it has often been misidentified as *C. corymbosus* but differs in having scale-like inflorescence bracts very much shorter than the inflorescence and elongate spikelets with glumes in two rows" (Cook, Aquat. & wetland pl. south. Afr.: 89, 2004). However, Gordon-Gray & al. (S. Afric. J. Bot. 72: 147−149, 2006) who studied these two species in S. Africa, came to the conclusion that *C. articulatus* and *C. corymbosus* are synonymous: "The latter bears laminae, has longer bracts and frequently has less septate culms than the former but these differences are phenotypic. Phenotypes formerly referred to *C. corymbosus* are generally rare and scattered, occupying the drier fringing zones of populations… Synonymy is further supported by distribution. *C. articulatus*, except for Malaysia, is common pantropically; *C. corymbosus* is reported from numerous localities within, or fringing the range of *C. articulatus* but is rare. The only exception to this pattern known to us is in Sri Lanka (Ceylon) where Koyama (1985) reported the apparent replacement of *C. articulatus* by *C. corymbosus* over a century". A map of distribution in south Africa figures on p. 148. The World Checklist of Selected Plant Families, Cyperaceae (Roy. Bot. Gard., Kew) maintains *C. corymbosus* as a distinct entity, and we have chosen the same approach.

C. ascocapensis Bauters – See above under **Ascolepis capensis** (Kunth) Ridl.

C. ascodensus Goetgh. – See above under **Asoclepis densa** Goetgh.

C. ascofibrillosus Goetgh. – See above under **Ascolepis fibrillosa** Goetgh.

C. ascohemisphaericus Goetgh. – See above under **Ascolepis hemisphaerica** Peter ex Goetgh.

C. asconeglectus Goetgh. – See above under **Ascolepis neglecta** Goetgh.

C. ascopinguis Goetgh. – See above under **Ascolepis pinguis** C. B. Clarke

C. ascopusillus Goetgh. – See above under **Ascolepis pusilla** Ridl.

C. ascospinulosus Goetgh. – See above under **Ascolepis spinulosa** Goetgh.

C. ascotrigonus Goetgh. – See above under **Ascolepis trigona** Goetgh.

C. assimilis Steud. – See above under **Courtoisina assimilis** (Steud.) Maquet

C. aster (C. B. Clarke ex Cherm.) Kük. var. *biflorus* Peter & Kük. figures at the end of **Mariscus**, "species in need of study" (p. 275).

C. aterrimus Hochst. ex Steud., incl. var. *atroviridis* (C. B. Clarke) Kük. and var. *agglomeratus* Kük.; Podlech in Mitt. Bot. Staatssamml. München 4: 107, 1961; Cabezas & al. in Belg. J. Bot. 137: 6, 2004 (Bioko); Puff & Sileshi, Pl. Simen: 241, 2005; Fl. Trop. E. Afr., Cyper.: 232−233, 2010; Onana, Vascul. pl. Cameroon…: 160, 2011 (as *C. atroviridis*). – Icon.: Engler, Pflanzenreich IV. 20/101: 143, 1935; Haines & Lye, Sedges & rushes E. Afr.: 199, 1983 (as *C. atroviridis*); Troupin, Fl. Rwanda 4: 439, 1988 (idem); Fl. Eth. & Eritrea 6: 454, 1997.

syn.: *C. atroviridis* C. B. Clarke

Perennial herb 0,2−1,5 m tall with short creeping rhizome; culms few, 26−82 cm long, 1,9−7 mm ∅, trigonous; leaf sheaths 4−20 cm long; longest leaf blades 30−70 cm long, 0,4−1,2 cm wide, flat, linear; inflorescence a compound anthela, primary branches 4−10, 1,5−12 cm long; spikelets in crowded spikes, giving the inflorescence a *brush-like* appearance, with to 82 spikelets per spike, 8−15 mm long; glumes dark *reddish-brown*, sometimes *almost black*.

Wet grasslands; swamps and bogs; alongside water; damp places in forest; forest gallery; 1200−3350 m alt.

Bioko/Fernando Poo (reported under the name *C. adoensis* Hochst. ex A. Rich.).

C. atractocarpus Ridl.; Haines & Lye, Sedges & rushes E. Afr.: 261−262, 1983.

Densely tussocky perennial herb; culms with base strongly swollen and covered by fibrous remains of old leaf sheaths; culms 5−30 cm long, 0,3−0,8 mm ∅; leaves absent or very short and almost filiform at flowering time; inflorescence a terminal spikelet or 2−4 digitately arranged spikelets; spikelets linear, 2−5 cm long.

Dry sandy areas; "plentiful in the loftier pastures of Empalanca" (Welwitsch); 1600 m alt.

May also turn up in S Tanzania (Haines & Lye, l.c.).

C. atribulbus Kük. – See below under **Pycreus atribulbus** (Kük.) Napper

C. atronervatus Boeckeler – See below under **Pycreus atronervatus** (Boeckeler) C.B. Clarke

C. atrorubidus (Nelmes) Raymond – See below under **Pycreus atrorubidus** Nelmes

(***C. aucheri*** Jaub. & Spach) – Icon.: Fl. Pakistan 206, Cyper.: 128, 2001.

syn.: *C. conglomeratus* Rottb. var. *aucheri* (Jaub. & Spach) C. B. Clarke, and fa. *oligostachys* Kük.

According to Kukkonen in Fl. Pakistan, l.c. and Väre & Kukkonen in Nord. J. Bot. 24: 291, 2006, *C. aucheri* occurs in Afghanistan to Pakistan. However, Kükenthal in Engler, Pflanzenreich IV. 20/101: 274, 1936, cites a collection by Vogel from S Niger, on a sand hill at Agadem (6°50'N × 13°11'E), an oasis situated on the (ancient) main road N-S (for Lake Chad). He also refers to a collection by Schubert from "Lower Egypt", Belbeys Desert (? 30°25'N × 31°34'E). In Fl. W. Trop. Africa, ed. 2, 3/2: 292, 1972, Hooper remarked that "the relationship between this specimen [Niger, Agadem] and typical examples of the species from the Persian Gulf requires further study". It is for certain that this and other collections from N Africa need re-evaluation.

C. aucheri is treated as a "good" species in Fl. W. Trop. Afr., l.c., "similar to *C. conglomeratus* Rottb. in habit but with a broader spikelet and winged achene". It is maintained as such by Simpson & Inglis in Kew Bull. 56: 285, 2001. However, Boulos (Fl. Egypt 4: 395−397, 2005) took a broader view: "*Cyperus conglomeratus* is a drought-resistant species, widely distributed in arid regions from Senegal to Pakistan, with a wide range of variation in its populations. Many taxa were described due to its variable morphology and habit, these are listed here [incl. *C. aucheri*] as synonyms".

Not mapped by us.

C. auratus (Nees) Huygh – See below under *Kyllinga brevifolia* Rottb., and also under *K. erecta* Schumach. – Our treatment follows Fl. Trop. E. Afr., Cyper.: 313−316, 322−323, 2010 (under *Kyllinga*; by H. Beentje), not the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (consulted July 2017).

C. aureoalatus Lye – See below under **Kyllinga alba** Nees subsp. **alata** (Nees) C. B. Clarke

(***C. aureobrunneus*** C. B. Clarke ("aureobruneus"), Fl. Trop. Afr. 8: 346, 1901.)

syn.: *C. denudatus* L. f. var. *aureobrunneus* (C. B. Clarke) Kük. (in Engler, Pflanzenr. IV. 20/101: 256, 1936).

"The collection [A. Whyte] consists of 5 fine umbels. The species does not resemble any one in this group, and is perhaps really allied to *C. amabilis*, Vahl, though of very large size" (C. B. Clarke, l.c.).

Top of the stem triquetrous; umbel 20 cm ∅, decompound, dense with numerous golden-brown spikes; bracts 3−5, usually much shorter than the umbel; spikelets 5−12 together, c. 1 cm long, compressed, 14−30-flowered; nut small, 1/3 length of the glume, brown ("many white and infertile").

Known only from the type (A. Whyte) collected in 1896 at Fort Hill (= Chitipa, N Malawi, 9°42'S × 33°16'E), 3500−4000 ft. (= c. 1300 m) alt.

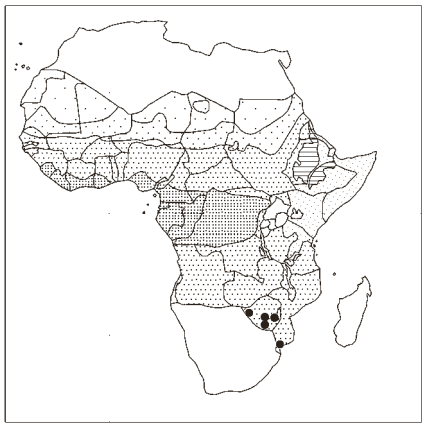
Kükenthal (l.c.) treated the plant as a variety of *C. denudatus*, a widespread species in E. Africa.

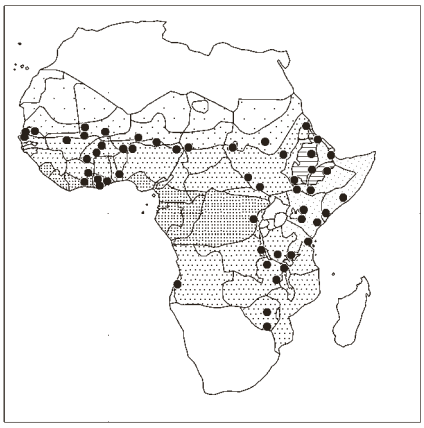
C. aureostramineus Mattf. & Kük., – See below under **Kyllinga chrysantha** K. Schum.

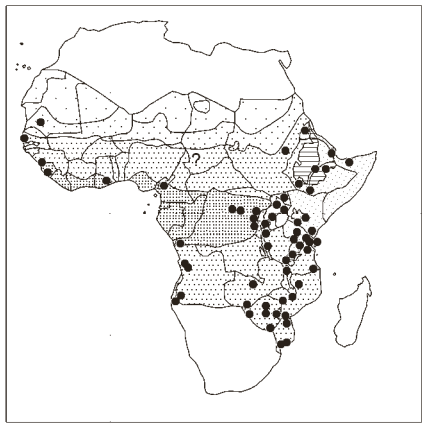
C. aureovillosus (Lye) Lye – See below under **Kyllinga aureovillosa** Lye

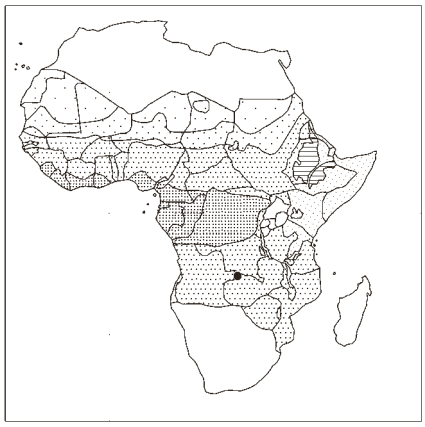
C. austroafricanus C. Archer & Goetgh. – See below under **Mariscus dregeanus** Kunth and **M. dubius** (Rottb.) Kük.

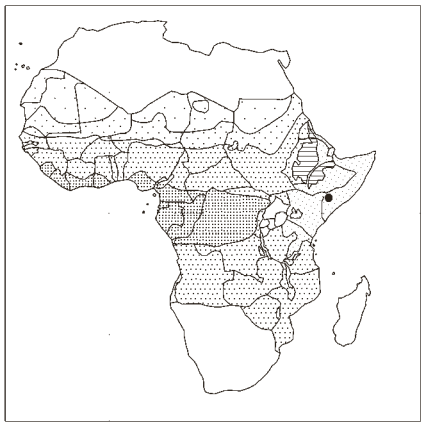
C. austrochrysanthus Lye – Icon.: Lye, Candollea 43: 506−507, 1988.

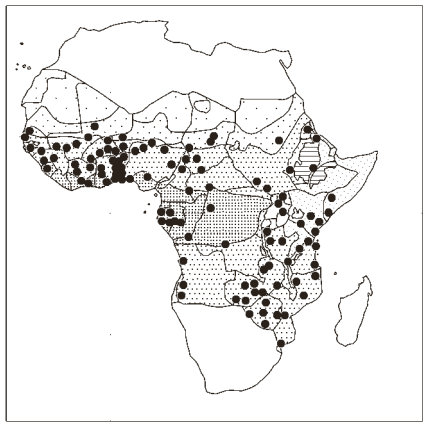

Cyperus albostriatus

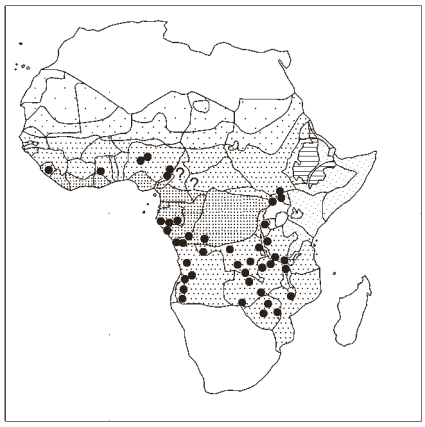

Cyperus alopecuroides

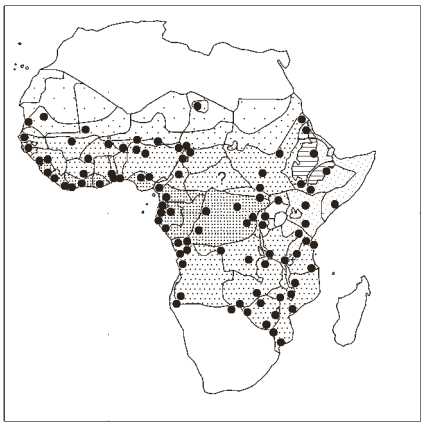

Cyperus alternifolius subsp. flabelliformis

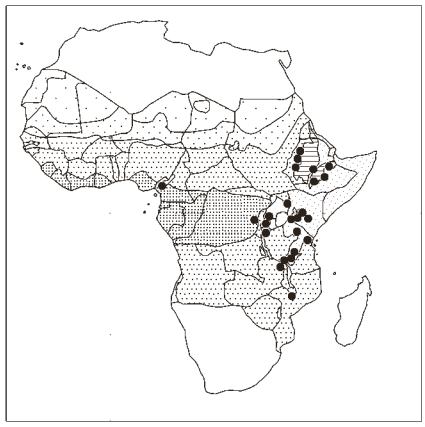

Cyperus altochrysocephalus

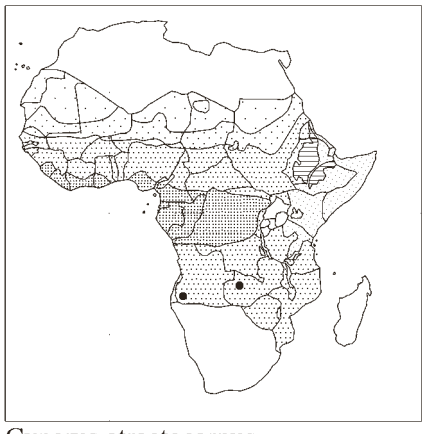

Cyperus altomicroglumis

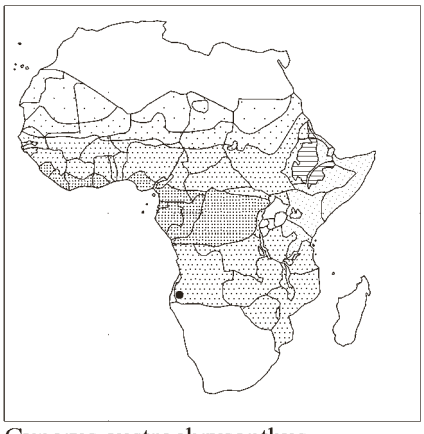

Cyperus amabilis

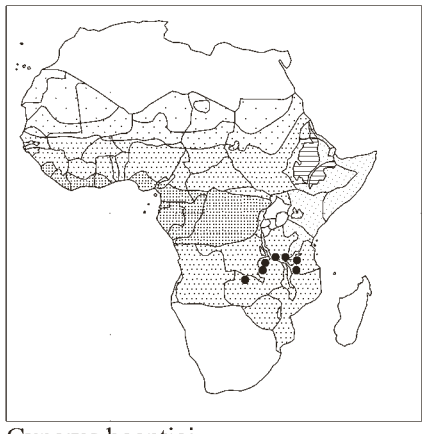

Cyperus angolensis


Cyperus articulatus


Cyperus aterrimus


Cyperus atractocarpus


Cyperus austrochrysanthus


Cyperus beentjei

CYPERUS AUSTROCHRYSANTHUS

Perennial herb with crowded culms, base slightly swollen; culms 6−16 cm long, 0,3−0,5 mm ∅, obtusely triangular; leaves from the basal 2 cm only; sheaths pallid to light reddish brown, as old often splitting up into pallid fibres; blades 2−10 cm long, 0,2−0,5 mm wide, flat or somewhat folded and twisted when dry; inflorescence a congested *bright yellow* anthela 0,8−1,6 cm ∅ with 4−12 erect, *spreading, sessile* spikelets; spikelets 4−9 mm long, 2,5−5,5 mm wide, *strongly compressed*.

Wet sand over flat granite; 650−1700 m alt.

In herbaria the species has been identified as (confused with) *Cyperus niveus* Retz. var. *flavissimus* (Schrad.) Lye (Lye l.c.).

C. baobab Lye – See below under **Mariscus baobab** (Lye) J.-P. Lebrun & Stork

C. baoulensis Kük. – See below under **Mariscus baoulensis** Hutch. 1936 and 1972 (no Latin description) ex J.-P. Lebrun & Stork

(**C. baronii** C. B. Clarke, J. Linn. Soc., Bot. 20: 289, 1883) was described from Central Madagascar. C. B. Clarke in Fl. Trop. Afr. 8: 344−345, 1901, cited specimens from Tanzania, Usambara (Holst 3385), and N Malawi, Khondowe – Karonga (c. 10°36'S × 34°11'E, Whyte s.n., and Buchanan 647). He stated that the latter two gatherings "are identical with the typical *C. Baroni* from Madagascar. As to Holst, 3385, it is nearer *C. Deckenii* than *C. Mannii*…". – Kükenthal (Engler, Pflanzenr. IV. 20/101: 201−202, 1936) cited collections from Cameroon, Buea (Deistel 34) and Musake (Hintze 11). He listed 4 varieties, viz. var. *densus* C. B. Clarke from C Madagascar, var. *squarrosus* C. B. Clarke from the Comoros, var. *interpositus* Kük. from Cameroon, Buea (Preuss 671), Malawi, Mt. Zomba (Whyte), Rwanda (Graf Götzen), Tanzania, Uluguru (Stuhlmann 8814) and Mahenge (Schlieben 1186), and var. *mannii* (C. B. Clarke) Kük. with synonyms *C. mannii* C. B. Clarke (basionym), *C. leptocladus* Boeckeler, *C. ingratus* Hook. f., and *C. elegans* Ridl., present in W Africa, Mt Cameroon (Mann 1358, 2107, Johnston 46, Preuss 564, 979), and Fernando Poo (Bioko) and S. Tomé.

Hooper in Fl. W. Trop. Afr., ed. 2, 3/2: 289, 1972 cites *C. baronii* var. *mannii* as a synonym under *C. mannii* (present in Sierra Leone, Liberia, N Nigeria, W Cameroon, Mt Cameroon, and Fernando Poo. She adds: "Perhaps to be equated with one of the east African species of this section of the genus." – The specimens from West Africa are treated by us under **C. mannii**.

Haines & Lye (Sedges & rushes E. Africa: 156−158, 1983) refer to *C. pseudoleptocladus* Kük. and *C. glaucophyllus* Boeckeler as closely related, also adding that "more research is needed to clarify the taxonomic relationships between *C. glaucophyllus*, *C. pseudoleptocladus*, *C. baronii* C. B. Cl. and *C. fischerianus*."

One the one hand Beentje in Fl. Trop. E. Afr., Cyper.: 198, 200, 2010, treats *C. baronii* p.p. (in FTA 8: 344, 1902) as a synonym under *C. glaucophyllus*. On the other hand, he cites *C. baronii* var. *interpositus* as a species with inadequate data (o.c.: 252). The specimen he had seen (Schlieben 1186 from Tanzania, Mahenge, cf. above) keys to *C. exaltatus* (Stuhlmann 8814 from Uluguru not found by him). – Other specimens from E. Africa (Holst 3385, Lutindi), Malawi (Whyte s.n.; Buchanan 647, without precise locality) need further study.

C. baronii C. B. Clarke seems to be a plant from Madagascar, Réunion, Comoro Islands.

C. beentjei L. R. Gardner & O. Weber, Kew Bull. 69/9501: 6, 2014 (with fig. p. 7 and map p. 8).

CYPERUS BEENTJEI

Perennial rhizomatous herb to 1,5 m tall; culms few to many, 0,18−1,38 m long, 1−5 mm ∅, trigonous, smooth or sometimes minutely barbed near apex; leaf sheath light brownish-red with red dots and occasionally red-veined 5−40 cm long; blade flat, linear, 6−59 cm long, 2−6 mm wide, sometimes barbed to scabrid on midrib and margins, apex acuminate to acute; inflorescence anthelate; involucral bracts leaf-like; primary branches 4−19, 1−32 cm long; secondary branches 0,4−5,7 cm long; tertiary branching sometimes present; spikelets in digitate terminal clusters, sessile and at end of various types of branches, 3−7 per cluster, 0,6−1,5 cm long, 1,1−2,9 mm wide, 5−16-flowered.

Shaded areas; forests, edge of forests; often near water; 1350−1900 m alt.

Near *C. glaucophyllus* but: – leaf sheaths 5−40 cm (not 2−11); nutlets 0,9−1,1 × 0,7−0,9 mm (not (1,3−1,8 × 0,4−0,6 mm).

C. benadirensis Chiov.; Thulin, Fl. Somalia 4: 127, 129, 1995; Fl. Trop. E. Afr., Cyper.: 196, 2010.

syn.: *C. poecilus* C. B. Clarke var. *evolutus* Kük.; *C. frerei* sensu Chiovenda, Result. Scient. Miss. Stefanini-Paoli 1: 179, 1916, non C. B. Clarke (= *C. crassipes*).

Perennial tussocky herb to 54 cm tall with swollen stem-bases, crowded on a short rhizome; culms 15−50 cm long, 1−3 mm ∅, trigonous; leaves from the lower 10 cm only, c. 5−8 per culm; upper leaf sheaths prominently whitish, the lower brown; blades linear, 5−22 cm long, 2−3 mm wide; inflorescence a lax simple anthela c. 4−10 cm ∅ with 1 sessile and 5−10 stalked digitate clusters of spikelets on to 5 cm long peduncles.

Commiphora grassland, edge of cultivation; sand dunes, bushland; near sea-level to c. 1000 m alt.

C. beninensis (Samain, Reynders & Goetgh.) Huygh – See below under **Kyllinga beninensis** Samain, Reynders & Goetgh.

C. bifolius Lye; Fl. Eth. & Eritrea 6: 454−455, 1997; Lye in Biol. Skr. 54: 204, 2001.

Stoloniferous perennial herb with c. 10 cm long curving stolons; culm solitary from the end of a stolon, 80−90 cm long, 0,2−0,4 ∅, 3-angled; leaves from the basal 30 cm only, *often 2 per culm*; blade 40−60 cm long, 0,3−0,8 cm wide; inflorescence a 10−15 × 7−10 cm lax anthela consisting of many sessile and subsessile groups of spikes on 1−9 cm long peduncles, but with a few spikes sessile; spikes 20−50 mm long, 5−10 mm ∅, erect, appearing brush-like; spikelets linear, 6−12 × 1−2 mm, 5−15-flowered; involucral bracts leafy, to 30−40 cm long.

Swampy area in grassland; 1890 m alt.

Only known from the type.

C. blepharoleptos Steud. – See below under **Oxycaryum cubense** (Poepp. & Kunth) Palla

C. blysmoides Hochst. ex C. B. Clarke; Fl. Eth. & Eritrea 6: 451, 1997 p.p. (treated as a synonym of *C. bulbosus* Vahl); Fl. Trop. E. Afr., Cyper.: 148, 2010.

syn.: *C. bulbosus* Vahl var. *spicatus* Boeckeler; *C. bulbosus* Hochst., nom. nud.; *Hemichlaena bulbosa* Hochst. ex A. Rich.

Perennial herb to 30 cm tall with a basal bulb covered by brown to blackish scales and with very slender stolons ending in new bulbs; culms 5−20 cm long, 0,3−1 mm ∅, triangular or compressed, with many crowded leaves in lower half to 35 cm long; blades linear, flat, 6−30 cm long, 0,8−3,8 mm wide; inflorescence ± *paniculate*

with 4−10 spikelets spread out on a 3−10 cm long central axis; spikelets ovoid, 7−15 mm long; *involucral bracts absent*.

Seasonally wet habitats; flooded grasslands; swamp areas; shallow soils on rocky outcrops; weed in cultivation; 30−2150 m alt.

Saudi Arabia, Yemen (Wood, Handbook Yemen flora: 323, 1997).

"Distinct from *C. bulbosus* in the inflorescence consisting of a simple spike; and the absence of involucral bracts. The distribution areas are the same" (Fl. Trop. E. Afr., Cyper.: l.c.).

C. boreobellus Lye; Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 158, 160, 2010. – Icon.: Nord. J. Bot. 3: 220, 1983; Haines & Lye, Sedges & rushes E. Afr.: 258−259, 1983.

Annual (perhaps perennial) herb growing in tussocks, sometimes mat-forming, to 21 cm tall; culms tufted, 5−19 cm long, 0,6−1,1 mm ∅, trigonous; leaves to 18 cm long; sheath 1−3 cm long; blade flat, 5,5−15 cm long, 0,5−1 mm wide; inflorescence capitate with 4−7 spikelets per head, ± lanceolate, each 7−20 mm long.

Damp shallow sandy soil over rocks; rocky pools; 350−400 m alt.

Only known from 2 collections made in 1953 and 1998, respectively.

Similar to *C. kirkii* but with larger glumes, and occurs only in SE Kenya.

C. boreochrysocephalus Lye – See below under **Mariscus boreochrysocephalus** (Lye) J.-P. Lebrun & Stork

C. boreohemisphaericus Lye – See below under **Mariscus boreohemisphaericus** (Lye) J.-P. Lebrun & Stork

C. bracheilema (Steud.) Mattf. & Kük. – See below under **Kyllinga pulchella** Kunth

C. brasiliensis (Kunth) Bauters – See above under **Ascolepis brasiliensis** (Kunth) Benth. ex C. B. Clarke

C. brevifolius (Rottb.) Hassk. – See below under **Kyllinga brevifolia** Rottb.

C. breviglumis Lye – See below under **Kyllinga tisserantii** Cherm.

C. brunneoalatus (Cherm.) Huygh – See below under **Kyllinga brunneoalata** Cherm.

C. brunneoalbus (Lye) Lye – See below under **Kyllinga brunneoalba** Lye

C. brunneofibrosus Lye – See below under **Kyllinga brunneofibrosa** (Lye) J.-P. Lebrun & Stork

C. bulbipes Mattf. & Kük. – See below under **Kyllinga crassipes** Boeckeler

C. bulbosus 1805, non Lag. 1816 (= **C. congestus**, S. Africa, introduced elsewhere), nec *Kyllinga bulbosa* P. Beauv., Fl. Oware 1: 11, 1805 (= *Cyperus richardii* Steud.). – **C. bulbosus** Vahl 1805, incl. var. *elatior* Kük. (non var. *elatus* E. G. Camus 1910 = *C. stoloniferus*), incl. var. *melanolepis* Kük., and fa. *depauperatus* Maire, ? and incl. var. *longibracteatus* Terracc.; but *excl*. var. *spicatus* Boeckeler (= *C. blysmoides*) and var. *elatus* E. G. Camus (= *C. stoloniferus* Retz., W. Indian Ocean, Asia, SW Pacific).

– Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 611, 1985; Thulin, Fl. Somalia 4: 124, 1995; Fl. Eth. & Eritrea 6: 451, 1997, excl. syns. *Hemichlaena bulbosa* Hochst. ex A. Rich., *Cyperus blysmoides* Hochst. ex C. B. Clarke, *C. bulbosus* Vahl var. *spicatus* Boeckeler (all = **C. blysmoides**); and excl. var. *grandibulbosus* (C. B. Clarke) Chiov. and var. *flavus* Chiov., nom. nud. (= **C. grandibulbosus** C. B. Clarke); Figueiredo & Smith, Pl. Angola: 179, 2008; Lisowski, Fl. Rép. Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 221−222, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon. : Engler, Pflanzenreich IV. 20/101: 123 fig. 15 C-E, 1935; Haines & Lye, Sedges & rushes E. Afr.: 194, 1983; Berhaut, Fl. ill. Sénégal 9: 176, 1988; Fl. Eth. & Eritrea 6: 392, 452, 1997; Fl. Pakistan 206, Cyper.: 99, 2001; Bajpai & al. in Phytomorphology 53: 119, 2003 (nutlet); Boulos, Fl. Egypt 4: 387, 2005; Väre in Ann. Bot. Fennici 42: 42, 43, 45, 2005 (typification).

syn.: *C. jeminicus* Retz. 1786, non Rottb. 1773, nom. illeg.; *C. yemenicus* Spreng.; *C. polyphyllus* Vahl; *C. laxus* R. Br. in H. Salt 1814; *C. bulbiferus* A. Dietr.; *C. rotundus* Kunth 1837 p.p., non L. 1753; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with a basal bulb 0,5−1 cm ∅ enclosed in a hard dark brown to black striate coat which splits into lanceolate valves, and with very slender stolons ending in new bulbs 0,3−0,7 cm ∅ from which the culms emerge; culms 5−50 cm long, trigonous; leaves numerous, basal, slender, nearly equalling the stems (5−40 cm long); sheath 2,5−8 cm long; blade 11−31 cm long, 2,4−5,7 mm wide; inflorescence a lax anthela 3−12 cm long, 5−12 cm ∅, consisting of 4−6 leafy bracts, 1 sessile spike and 3−6 stalked spikes, or reduced to 1 single spike; spikelets in loose clusters at end of primary branches or in a single spike, dark red brown, linear, 5−25 mm long.

Sandy shore near river mouth; seasonally wet grassland; sandy-clayey soil with salt during dry season; open sand; dunes; weed of cultivations (Sudan, Kenya, Tanzania); near sea-level to 2500 m alt.

Morocco, Algeria (Hoggar), SE Egypt; Cape Verde Isl.; Arabia, Yemen (Wood, Handbook Yemen flora: 324, 1997), Iran, Pakistan, India, Sri Lanka through to Vietnam, Malaysia, N Australia.

Tubers are eaten roasted or boiled (Naczi & Ford, Sedges: uses…: 10, 2008); used as famine food (Simpson & Inglis in Kew Bull. 56: 285−286, 2001). Plant also used as an ornamental.

Similar and very near to *C. blysmoides* but more robust; also resembling *C. rotundus*.

Cyperus camerunensis Lye – See below under **Kyllinga stenophylla** K. Schum. ex C. B. Clarke

Cyperus capensis (Steud.) Endl. – See below under **Mariscus capensis** (Steud.) Nees

Cyperus capillifolius A. Rich., incl. var. *major* (Cherm.) Kük. See below under **Pycreus capillifolius** (A. Rich.) C. B. Clarke

C. capitatus Vand. 1771, non Retz. 1786 (= *Cyperus cuspidatus*), nec Poir. 1806 (= *Mariscus dubius*), nec *Cyperus capitatus* (L.) Burm. f. ex B. D. Jacks. (Fl. Ind. 21 fide index Kewensis). – Ibn Tattou & Fennane, Fl. vascul. Maroc 2: 158, 2008; Simpson & Inglis in Kew Bull. 56: 286, 2001; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 115, 2010. – Icon.: Maire, Fl. Afr. N. 4: 27, 1957 (as *C. kalli*); Fl. Libya 119: 21, 1985; Boulos, Fl. Egypt 4: 396, 2005.

syn.: *Schoenus mucronatus* L.; *Mariscus mucronatus* (L.) Gaertn.; *Cyperus mucronatus* (L.) Mabille, nom. illeg.; *Galilea mucronata* (L.) Parl.; *Scirpus kalli* Forssk.; *Cyperus kalli* (Forssk.) Murb.; *C. aegyptiacus* Gloxin; *Chlorocyperus aegyptiacus* (Gloxin) Rikli – For full synonymy See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Creeping, glaucous (in vivo), yellowish (dried) perennial herb; roots sand-binding; rhizomes horizontal, much elongate, with acute scales; culms 10−18 cm long, 2−4 mm ∅, erect or incurved, terete at base, subterete towards tip, thickened basally by several leaf sheaths, *almost bulbous* at base; sheaths red-brown or pale purple-brown; blades 2,5−6 mm wide, flexuous or recurved, equalling or longer than culms; inflorescence 1,5−4 cm ∅, *capitate*, spherical or lobed, with 1-several ± confluent spikes; bracts 3−6, leaf-like, much longer than inflorescence; spikelets numerous, densely crowded, lanceolate, 11−15-flowered, 1−1,5 cm long.

Coastal sands; near sea-level.

Canary Isl.; Mediterranean region (in S Europe, for Italy, Po Plain, See Webbia 72: 129, 2017), N. Africa from Morocco (Lagascalia 30: 324, 2010), Tunisia (Le Floc'h & al., Fl. Tunisie: 342, 2010) through to Egypt; Cape Verde Isl.; Turkey, Palestine, Syria.

C. cardosoi (Meneses) Huygh – See below under **Kyllinga cardosoi** Meneses

C. carinalaevis (Lye & Mesterházy) Huygh – See below under **Kyllinga carinalaevis** Lye & Mesterházy

C. cartilagineus (K. Schum.) Mattf. & Kük. – See below under **Kyllinga cartilaginea** K. Schum.

C. castaneobellus Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Nord. J. Bot. 3: 227, 1983; Haines & Lye, Sedges & rushes E. Afr.: 259, 1983.

Perennial herb growing in small very dense tussocks, to 19 cm tall; culms 4−18 cm long, 0,3−0,5 mm ∅, trigonous; leaves to 11 cm long; sheath 0,7−1,5 cm long; blade linear, flat, 3,5−9,5 cm long, 0,3−0,6 mm wide; inflorescence *capitate, dark red-brown to ± black*; spikelets sessile, 3−10 per head, linear, 4−10,5 mm long; bracts leaf-like.

Shallow soil overlying rocks by riverside; 930 m alt.

Only known from the type collected in 1956.

C. cataphyllatus (Huygh & Schouppe) Huygh – See below undere **Kyllinga cataphyllata** Huygh & Schouppe

C. cataractarum (C. B. Clarke) K. Schum. ex Engl. – See below under **Pycreus cataractarum** C. B. Clarke

C. ceylanicus T. Koyama – See below under **Lipocarpha filiformis** (Vahl) Kunth

C. chaetophyllus (Chiov.) Kük. – See below under **Mariscus chaetophyllus** Chiov.

C. chermezonianus Robyns & Tournay, non *C. chermezonii* Kük. (Madagascar). – See below under **Mariscus luteus** (Boeckeler) C. B. Clarke

C. chersinus (N. E. Br.) Kük. – See below under **Mariscus chersinus** N. E. Br.

C. chevalieri Kük. – See below under **Mariscus stolonifer** C. B. Clarke

C. chinsalensis Podlech; Fl. Trop. E. Afr., Cyper.: 171, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 159, 1983.

Perennial herb with creeping rhizome and persistent swollen stem-bases, to 95 cm tall; culms triquetrous, almost winged, 41−92 cm long, 1,8−2 mm ∅; leaves to 55 cm long; sheaths 2−7 cm long; blade linear, 20−18 cm × 5−6 mm, scabrid on margins and veins, apex acute to acuminate; inflorescence loosely capitate, primary branches 0,3, 0−1,5 cm long; spikelets congested in loose clusters, sessile or on short primary branches, 2−5 per cluster, ovoid, 8−10 mm long; glumes ± white; bracts 2−10, leaf-like.

Brachystegia woodland; granite rocks; 1500−2000 m alt.

Similar to *C. mapanioides*.

C. chionocephalus (Chiov.) Chiov. ex Chiarugi – See below under **Mariscus chionocephalus** Chiov.

C. chlorotropis (Steud.) Mattf. & Kük. – See below under **Kyllinga chlorotropis** Steud.

C. chordorrhizus Chiov.; Thulin, Fl. Somalia 4: 126, 1995; Fl. Trop. E. Afr., Cyper.: 163−164, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 263, 1983; Thulin, o.c.: pl. 4D.

Perennial herb with a *long creeping wiry branched stolon* 1−5 m long, 1−4 mm ∅, *with shorter lateral sterile shoots* from the nodes (frequently crowded at tip of stolon), and *fertile terminal shoots* to 26 cm high; *leaves* numerous, *stiff*, *crowded*; sheaths grey with darker reddish brown nerves, translucent, old sheaths darker and splitting up into fibres, 0,5−2,5 cm long; blade linear, subterete, 1−11 cm long, 1,6−3 mm wide; inflorescence a *solitary head* or spikelet-cluster of 2−10 rather flattened reddish brown spikelets, each 4−10 mm long; bracts 2, leaf-like.

Coastal sand-dunes; near sea-level to 50 m alt.

Sand stabilizer, main sand-binding plant in coastal Somalia (Simpson & Inglis in Kew Bull. 56: 286, 2001).

C. chrysanthoides (Mtot.) Huygh – See below under **Kyllinga chrysanthoid**es Mtot.

C. chrysanthus Boeckeler – See below under **Pycreus chrysanthus** (Boeckeler) C. B. Clarke

C. chrysocephalus (K. Schum.) Kük. – See below under **Mariscus chrysocephalus** K. Schum.

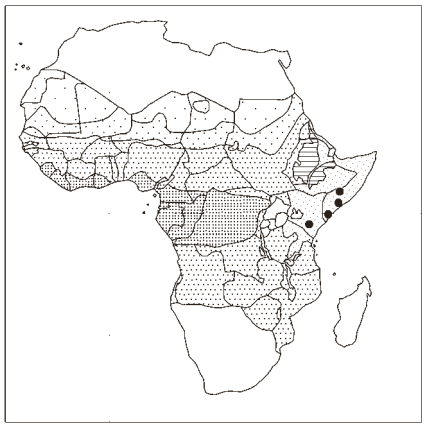
C. ciliatopilosus Mattf. & Kük. – See below under **Kyllinga platyphylla** K. Schum.

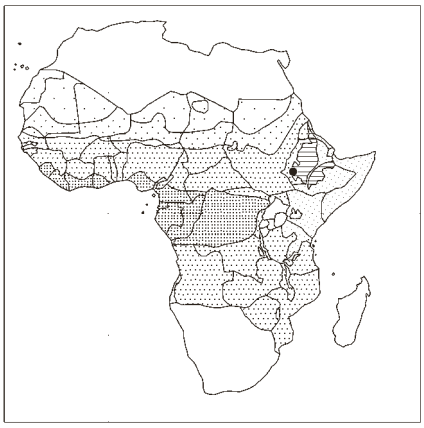
C. clandestinus Steud. – See below under **Ficinia clandestina** (Steud.) Boeckeler

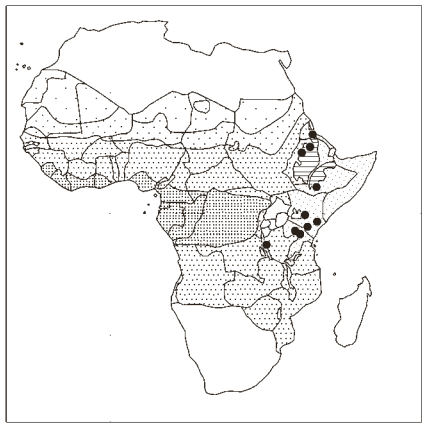
C. clavinux C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 175, 2010. – Icon.: Raynal in Adansonia, Sér. 2, 6: 307, 1966; Haines & Lye, Sedges & rushes E. Afr.: 261, 1983 (incl. nutlet).

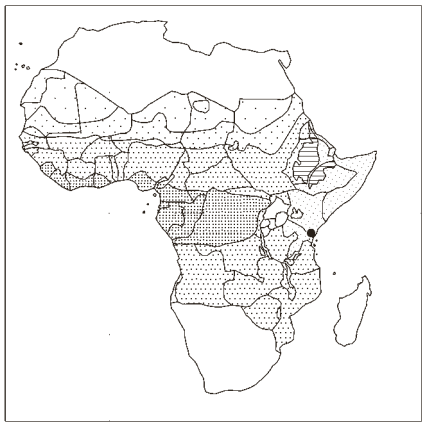
syn.: *C. monostigma* C. B. Clarke, excl. specim. Chevalier 4170 (= *Pycreus scaettae*); *C. meeboldii* Kük. var. *gigas* Berhaut

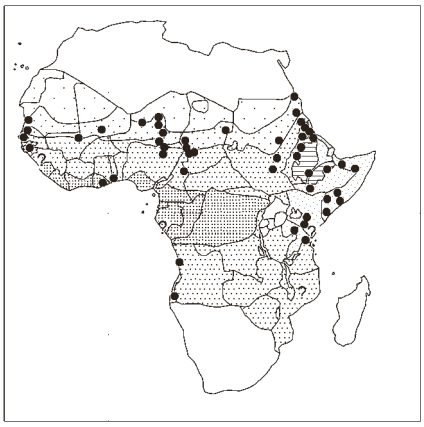
Perennial herb to 26 cm tall, with a slightly swollen culm-base covered by *pale* fibrous remains of old leaf sheaths; culms 3−23 cm

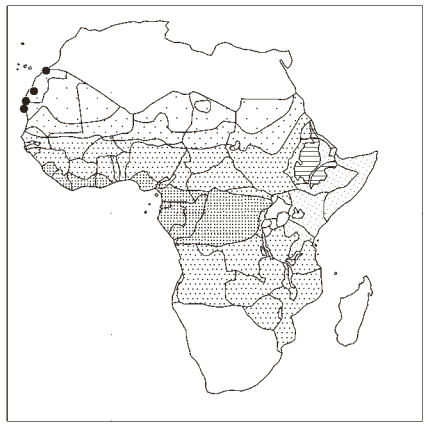

Cyperus benadirensis

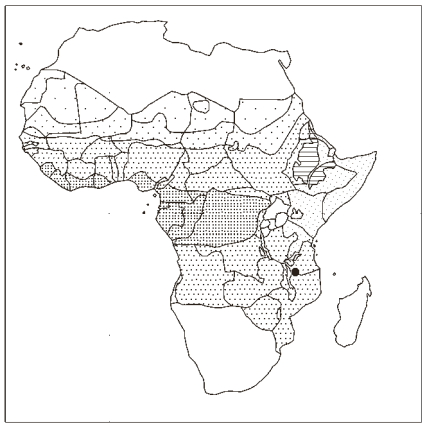

Cyperus bifolius

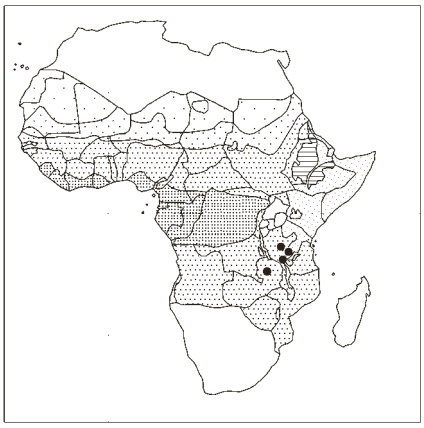

Cyperus blysmoides

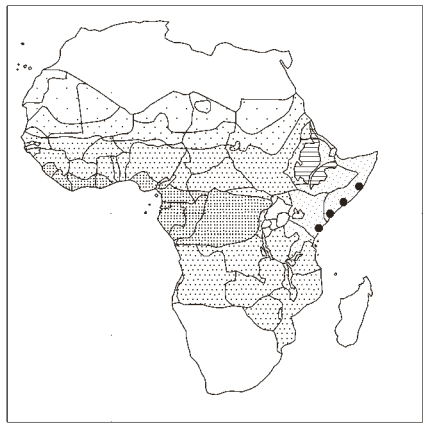

Cyperus boreobellus

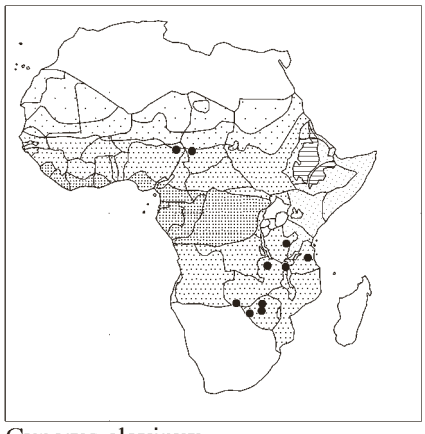

Cyperus bulbosus

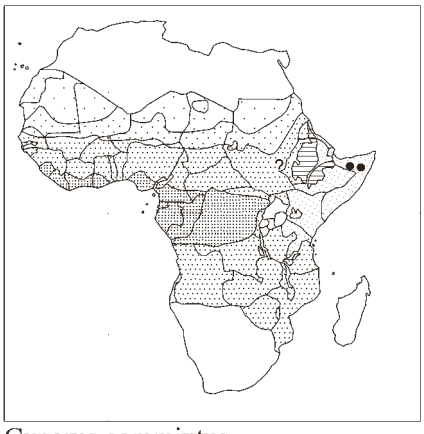

Cyperus capitatus

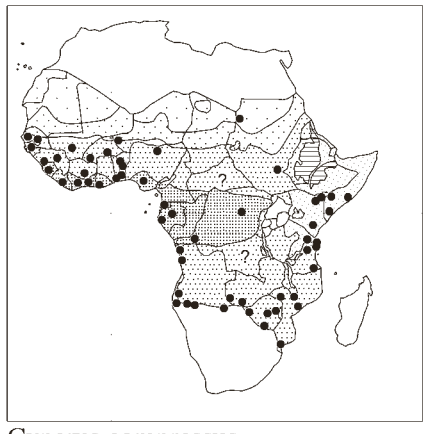

Cyperus castaneobellus


Cyperus chinsalensis


Cyperus chordorrhizus


Cyperus clavinux


Cyperus commixtus


Cyperus compressus

long, 0,8−0,9 mm ∅, trigonous; leaves to 15,5 cm long; sheath pale brown, 1−2,5 cm long; blade linear, folded, 7−13 cm long, 0,8−0,9 mm wide, apex acuminate; inflorescence *capitate* with up to 25 spikelets per inflorescence, each elliptic, 7,5−10,5 mm long; bracts 2, leaf-like.

Wet depression in *Terminalia spinosa* wooded grassland; seasonally damp sandy ground; 125−1240 m alt.

Botswana. – Not in Sénégal (Berhaut 1722 = *C. lateriticus*). Not in Congo-Brazzaville (Chevalier 4170 = *Pycreus scaettae*).

C. colymbetes Kotschy & Peyr. – See above under **Anosporum colymbetes** (Kotschy & Peyr.) Boeckeler

C. commixtus Kük. – Icon.: Thulin, Fl. Somalia 4: 118, 1995.

Perennial herb with a short woody rhizome sometimes with slender stolons; culms few, 20−30 cm long, 0,7−2 mm ∅, obtusely triangular; leaves basal only on lower 5 cm, usually 3−4 per culm; blades 5−40 cm long, 1−2,5 mm wide, flat; inflorescence a lax anthela of 1 sessile and 1−4 stalked digitate groups of 3−6 spikelets.

Small lakes or pools with very variable water level; sometimes inundated at high water level; 500−1000 m alt.

Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015, note that the identity of a single Sudan specimen (Broun 49 of February 1903) is doubtful.

Simpson & Inglis (Kew Bull. 56: 286, 2001) indicate that young vegetative shoot apices are eaten (food).

The type, Hildebrandt 873c, at Kew seems to be lost, "but the two collections cited [in Fl. Somalia (Glover & Gilliland 141; Hemming & Watson 3059)] fit the original description very well."

C. comosipes Mattf. & Kük. – See below under **Kyllinga comosipes** (Mattf. & Kük.) Napper

C. compressus L., incl. several varieties listed in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 111, 1899; Thulin, Fl. Somalia 4: 125, 1995; Clarke & Mannheimer, Cyper. Namibia: 67, 1999 (map); Cabezas & al. in Belg. J. Bot. 137: 7, 2004; Akoègninou & al., Fl. analyt. Bénin: 90, 2006; Naczi & Ford, Sedges: uses…: 40, 72, 2008; Lisowski, Fl. Rép. Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 195−196, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 110, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 43, 2012 + Schmidt & al. in Phytotaxa 304: 76, 2017 (map); Darbyshire & al., Pl. Sudan & S. Sudan: 104−105, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 266, 1983; Berhaut, Fl. ill. Sénégal 9: 177, 1988; Fl. Eth. & Eritrea 6: 460, 1997; Fl. Pakistan 206: 112, 2001; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 26, 2002; Boulos, Fl. Egypt 4: 389, 2005; Fl. Gabon 44, Cyper.: 43, 2012; Fl. China, Ill. 23: 318, 2012.

syn.: *C. conglomeratus* Willd. 1813, nom. nud., non Rottb. 1773; *C. caffer* G. Bertol.; *Chlorocyperus compressus* (L.) Palla; World Checklist of Selected Plant Families, etc. – For typification see Longhi-Wagner & al., Kew Bull. 65: 456, 2010.

Annual tufted herb 5−60 cm tall; culms 10−46 cm long, 1−3 mm ∅, trigonous; leaves to 50 cm long; sheath pale brown to red or purplish, 0,5−6 cm long; blade linear, flat, 5−50 cm long, 2−10 mm wide; inflorescence a simple anthela with 2−7 primary branches 0−13 cm long; spikelets linear, sessile, 1−3 cm long, *flattened* in digital clusters, 4−12 per cluster; *nutlets very large* (1−2 × 1−1,3 mm).

Wooded swamps; damp poor herbage; damp places, drainage trenches; permanent and seasonal pools and wet areas; half dried ponds in the mud; edge of marshes, pools; roadside ditches; sandy sea-shores; sandy soil, black cotton soil; weed of waste places, grasslands, lawns, crops, gardens; fallow rice fields; also dry or rocky places; 0−1200 m alt.

"Most variation in this species depends on age, such that spikelets and branches increase in length and glumes become spreading" (Boulos, Fl. Egypt, l.c.).

Spain (Fl. Mediterr. 24: 199−200, 2014); Cape Verde Isl.; Egypt (Nile region); Bioko/Fernando Poo, Annobón (Cabezas & al., l.c.); Namibia, S. Africa, Botswana, Swaziland; Madagascar, Indian Ocean islands; Asia, from Afghanistan, Pakistan, Sri Lanka E-wards to China, Indonesia, Philippines, Australia, Pacific Ocean islands; N., C. & S. America. – Widely distributed in tropical, subtropical and warm temperate regions around the world; frequently cited as a weed. Anthropogene, commonly found near habitations as well as being a weed of cultivated and disturbed land (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 612, 1985).

Said to have been cultivated as an ornamental, which probably partly accounts for its wide distribution (Naczi & Ford, l.c.).

C. congensis C. B. Clarke – See below at end of **Mariscus** p. 275.

C. conglomeratus Rottb., [non Willd. 1813, nom. nud. (= *C. compressus*)], subsp. **conglomeratus**; excl. var. *aucheri* (Jaub. & Spach) C. B. Clarke (= *C. aucheri*; See above under that species); and excl. fa. *excisus* (Boeckeler) Kük., subsp. *jeminicus* (Rottb.) Lye (= *C. jeminicus* Rottb., Senegal to Arabian Pen., Madagascar), var. *multiculmis* (Boeckeler) Kük., fa. *pumilus* (Boeckeler) Kük.; but incl. var. *ensifolius* (Nees & Ehrenb. ex Boeckeler) Kük., var. *major* Boeckeler, and fa. *major* (Boeckeler) Kük. – Väre & Kukkonen in Nord. J. Bot. 24: 286−288, 2006. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 612, 1985; Kukkonen, Fl. & Veget. Mundi 9: 66−73, figs. 1 & 2 (= p. 67, 69), 1991; Thulin, Fl. Somalia 4: 126, 1995; Fl. Pakistan, Cyper., 206: 123−125, 2001; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 115, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (& map, Schmidt & al. in Phytotaxa 304: 76, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 273, 1936; Haines & Lye, Sedges & rushes E. Afr.: 263, 1983; Fl. Eth. & Eritrea 6: 463, 1997; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 100−101, 2001; Boulos, Fl. Egypt 4: 396, 2005 (sp. sensu lato).

syn.: *C. complanatus* Forssk.; *C. involutus* R. Br. in Salt. Voy. Abyss.: LXII, 1814; *C. arcuatus* Boeckeler; *C. ensifolius* Nees & Ehrenb. ex Boeckeler; *C. jeminicus* Rottb.; *C. plurinervosus* Bodard; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tussocky yellowish-green herb with a short woody rhizome and numerous wiry, deep-penetrating roots densely covered with sand-binding hairs; culms 5−50 cm tall, 1−3 mm ∅, triangular to ± terete, rigid; leaves many from the basal 3−15 cm only; sheaths 4−12 cm long; blade 5−25 cm long, 1−3 mm wide, hard, crescentiform; inflorescence a terminal *head* of 3−20 crowded spikelets, 1−4 cm ∅, or once-branched; spikelets *compressed or subterete*, lanceolate, 5−20 mm long, *greyish white* or *variegated grey and reddish brown* (See note below under *C. jeminicus* p. 113 and *C. plurinervosus* p. 131).

Drought-resistant species; sandy soils often saline; clay soils; gravel; rocky areas; sand with shells; sand stone; sand dunes, often in extensive dominant stretches; 0−800 m alt.

Very variable.

N Africa from Morocco to Egypt, not in Nigeria, Central African Rep., Gabon, E Africa (See note below) – only in dry and hot parts of Africa; W Asia from Afghanistan, Iraq, Iran to NW India; Aldabra, Mauritius, Seychelles, Madagascar.

In E. Africa only known from a very young specimen from Northern Kenya (Haines & Lye, l.c.). No specimen cited. "…it is possible that it [*C. conglomeratus*] does occur in our area"… but … "I place it 'species of uncertain occurrence' (Fl. Trop. E. Afr., Cyper.: 255, 2010).

– Subsp. **curvulus** (Boeckeler) Kukkonen occurs in the Arabian Peninsula (e.g. Wood, Handbook Yemen flora: 324, 1997, as *C. effuses* Rottb.) E-wards to Pakistan. There are intermediates between subsp. *conglomeratus* and subsp. *curvulus* (Fl. Pakistan, l.c.).

Our map includes *C. sahelii* Väre & Kukkonen (Ann. Bot. Fennici 42: 478−479, 2005), probably an annual form of *C. conglomeratus* (cf. below under **C. sahelii**), as well as **C. jeminicus** Rottb. and **C. plurinervosus** Bodard (cf. below under **C. jeminicus**, also for synonyms, and **C. plurinervosus**).

C. constrictus (Goetgh.) Bauters – See below under **Lipocarpha constricta** Goetgh.

C. controversus (Steud.) Mattf. & Kük. – See below under **Kyllinga controversa** Steud.

C. corymbosus Rottb., excl. var. *scariosus* (R. Br.) Kük. (= *C. scariosus* R. Br., Australia, New Guinea, See Kew Bull. 67: 94, 2012); but incl. var. *brevispiculosus* Kuntze, var. *damarensis* Kük., var. *longispiculatus* (Kuntze) Kük., var. *macrostachyus* Boeckeler, var. *pangorei* C. B. Clarke; and *excl*. var. *subnodosus* (Nees & Meyen) Kük. ex Osten (= *C. articulatus*). – Rendle, Cat. Welwitsch's Afric. pl. 2/1: 116−117, 1899; Brunel & al., Fl. analyt. Togo in Englera 4: 537, 1984 (See further below); Gordon-Gray, Cyper. Natal: 54−55, 1995; J. Econ. Taxon. Bot., Add. Ser. 21: 86−87, 2002; Fl. Trop. E. Afr., Cyper.: 233, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 115, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011. – Icon.: Engler, Pflanzenreich IV. 20/101: 81, 1935; Haines & Lye, Sedges & rushes E. Afr.: 184, 1983; Kukkonen, Fl. Pakistan 206, Cyper.: 93, 2001; S. Afric. J. Bot. 72: 148, 2006.

syn.: *C. articulatus* L. "forma haud articulata, …" sensu Ridley in Transact. Linn. Soc. London, Ser. 2, 2, Bot.: 141, 1884 (Welwitsch); *C. diphyllus* Retz.; *C. koenigii* Vahl; *C. nudus* Roxb. 1832, nom. illeg., non Kunth 1816 (= *C. haspan*); and World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb to 1,6 m tall with rather thick scale-covered stolons; culms 0,6−1,25 m long, 0,2−1 cm ∅, rounded to obtusely triangular, *not prominently septate*; leaves to 41 cm long; basal sheaths without or with blades, *5−18 cm long*; blades linear, flat, 10−24 cm long, 4−8 mm wide; inflorescence a compound anthela, with primary and secondary branches; primary branches 7−9, 4−20 cm long; spikelets in loose clusters on elongated axis, at end of secondary branches, 4−10 per cluster, linear, 6−13 mm long.

Riverbanks; seasonally flooded habitats; swamps; thicket grown marshes on riverbanks; 300−600 m alt.

Algeria; S. Africa; Madagascar; Iraq through to S E Asia, India, Burma, N Australia ?; West Indies, Cuba; tropical S. America. – Not in Namibia (Clarke & Mannheimer, Cyper. Namibia: 91, 1999). Perhaps not in Togo (Kersting 440, reported by Kükenthal

is perhaps *C. fenzelianus* Steud., cf. Fl. W. Trop. Afr., ed. 2, 3/2: 293, 1972).

Culms used for making mats & baskets and thatching huts (Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 4, 2002).

Near *C. articulatus* but: stem obscurely septate; involucral bracts 3−7, leaf-like, lowermost ones to 20 cm long (*C. corymbosus* put in synonymy by Gordon-Gray, S. Afric. J. Bot. 72: 147−149, 2006 – cf. above under *C. articulatus*).

Remark by Kukkonen in Fl. Pakistan 206, Cyper.: 95, 2001: "The name *C. corymbosus* Rottb. is solely to be assigned to Rottboell. The protologue (Rottb. 1772) cites as a synonym *Scirpus corymbosus* L., which is *Rhynchospora corymbosa* (L.) Britton, however, with a question mark, and later Rottboell "(l.c., 1773) definitely excludes the synonym (see Kukkonen, Ann. Bot. Fennici 35: 169−170, 1998)."

C. costatus Mattf. & Kük. – See below under **Kyllinga nervosa** Steud.

C. crassicuspis (J. Raynal) Bauters – See below under **Lipocarpha crassicuspis** (J. Raynal) Goetgh.

C. crassipes Vahl; Raynal in Adansonia, Sér. 2, 17: 45, 1977. – Thulin, Fl. Somalia 4: 126, 1995 (as *C. frerei*); Gordon-Gray, Cyper. Natal: 55, 1995; Cabezas & al. in Belg. J. Bot. 137: 7, 2004 (Rio Muni); Väre & Kukkonen in Nord. J. Bot. 24: 282, 2006 (typification); Lisowski, Fl. Rép. Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 162−163, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011; Mesterházy in Lidia 7/5: 104, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 256, 1983 (as *C. frerei*); Berhaut, Fl. ill. Sénégal 9: 180, 1988; Akoègninou & al., Fl. analyt. Bénin: 91, 2006; Gordon-Gray in S. Afric. J. Bot. 72: 135−137, 2006; Fl. Gabon 44, Cyper.: 45, 2012.

syn.: *C. scirpoides* Vahl 1805; *C. maritimus* Poir. 1806, incl. var. *subtilis* Kük. (cf. also under *C. subtilis* below), var. *crassipes* (Vahl) C. B. Clarke, and var. *gracilescens* Kük., and var. *maritimus* sensu Fl. Gabon, l.c.; *C. frerei* C. B. Clarke; *C. jardinei* Steud.; *C. cephalostachyus* Steud.; *C. heterophyllus* Boeckeler; *C. brevis* Boeckeler; *C. congestus* Vahl var. *brevis* (Boeckeler) Kük.; *C. chisimajensis* Chiov.

Tussocky perennial herb to 70 cm tall with a thick branched rhizome and long stolons; culms few, 15−62 cm long, 1,6−5,3 mm ∅, triangular to ± rounded; leaves many, to 85 cm long; blade linear, 25−80 cm long, 3−13 mm wide; inflorescence a *globose head* (or sometimes a more open anthela ("var. *maritima*"), 3−8 cm ∅, of numerous almost sessile digitate clusters of spikelets 8-many per cluster, ± linear, 9−27 mm long (sometimes set on 0,5−2,5 cm long peduncles).

Low gravelly hills by the ocean; dry sandy coast; gravelly soil with *Commelina*; dry sandy places along river-banks; sandy sea-shores; coastal dunes; sandy bed of wadis; also weed in crop fields (Simpson & Inglis in Kew Bull. 56: 289, 2001); 0−280 m alt. – Heliophyte.

Variable in inflorescence appearance.

Cape Verde Isl.; S. Africa; Madagascar.

Our map includes *C. subtilis* (Kük.) Väre & Kukkonen (cf. above, and also under *C. subtilis* below).

C. cremeomariscus Lye – Perhaps better placed in **Mariscus**; See below at end of **Mariscus** p. 275.

C. cruentus Rottb. – See below under **Mariscus schimperi** Hochst. ex A. Rich.

C. cuanzensis Ridl. – See below under **Pycreus cuanzensis** (Ridl.) C. B. Clarke

C. cundudoensis Chiov. – See below under **Mariscus cundudoensis** (Chiov.) J.-P. Lebrun & Stork

C. cuspidatus Kunth, incl. fa. *angustifolius* Kük., var. *burchellii* C. B. Clarke, fa. *exiguus* (Nees) Kük.; Renier, Fl. Kwango 1: 70, 1948; Gordon-Gray, Cyper. Natal: 55, 1995; Thulin, Fl. Somalia 4: 125, 1995; Clarke & Mannheimer, Cyper. Namibia: 68, 1999 (map); Akoègninou & al., Fl. analyt. Bénin: 91, 2006; Lisowski, Fl. Rép; Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 191−192, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (and map, Schmidt & al. in Phytotaxa 304: 76, 2017); Mesterházy in Lidia 7/5: 104, 2012 (Liberia); Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 263, 1936 (spikelet); Haines & Lye, Sedges & rushes E. Afr.: 253, 1983; Berhaut, Fl. ill. Sénégal 9: 181, 1988; Fl. Eth. & Eritrea 6: 461, 1997; Fl. Pakistan 206, Cyper.: 132, 2001; Fl. Gabon 44, Cyper.: 45, 2012; Fl. China 23, Ill.: 304−305, 2012.

syn.: *Dichostylis cuspidata* (Kunth) Palla; *Cyperus capitatus* Retz. 1786, nom. illeg., non Vand. 1771, nec Poir. 1806 (= *Mariscus dubius*), nec (L.) Burm. f. ex B. D. Jacks. (Fl. Ind. 21, fide Index Kewensis); *C. recurvus* Vahl; *C. hamulatus* Kunth; *C. contractus* Steud.; *C. salzmannii* Steud.; *C. solutus* Steud.; *C. waterlotii* Cherm. – See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb with a minute root system; culms 3−20 cm long, 0,2−0,5 mm ∅, 3-angled; leaf blades 1−8 cm long, 0,2−0,8 mm wide; sheaths reddish brown to purple; inflorescence a single spikelet-cluster of 4−20 (rarely 1−3) spikelets, or of 1 sessile and 1−3 stalked spikelet-clusters; anthela 2,5−4 cm ∅ when consisting of several spikelet-clusters, each spikelet-cluster 1−2 cm ∅; apex of glumes with a *long recurved mucron*.

Sunny sandy sparsely-grassed places; growing with *Polygala africana*; sunny wooded marshes; damp places in fields after a crop of *Sorghum*, with *Paepalanthus welwitschii*; shallow seasonally wet soil often near pools on rock outcrops; grassland; sandy soil; turf; wooded zones; meadows; savannas; cultivations; hollows in coastal dunes; fallow land; weed of rice fields; disturbed places; 0−2500 m alt. – Sometimes fugacious.

Pantropical. – Annobón (Phytotaxa 171: 18, 2014); Namibia, S. Africa, Botswana, Swaziland; Madagascar, Mauritius; S Asia from India, Pakistan, Sri Lanka, Taiwan, Malaysia to Australia; SE USA (locally abundant in sandy soils, in and around agricultural fields, weed in container-grown plants and plant nurseries (Naczi & Ford, Sedges: uses…: 43, 2008), C. & S. America.

Similar to *C. volkielloides*.

C. cylindrostachyus Boeckeler 1870, non Small 1903 (USA), non *Mariscus cylindrostachyus* Steud. 1854 [= *Cyperus cyperoides* (L.) Kuntze, also synonym of *Mariscus sumatrensis*]. – See below under **Mariscus sumatrensis** (Retz.) J. Raynal

C. cyperoides (L.) Kuntze – See below under **Mariscus sumatrensis** (Retz.) J. Raynal

C. dactyliformis Boeckeler – See below under **Mariscus solidus** (Kunth) Vorster

C. deciduus Boeckeler – See below under **Mariscus deciduus** (Boeckeler) C. B Clarke

C. decurvatus (C. B. Clarke) C. Archer & Goetgh., Bothalia 41: 300, 2013. – See below under **Mariscus rehmannianus** C. B. Clarke, but compare also under **M. albomarginatus** C. B. Clarke

C. demangei (J. Raynal) Lye – See below under **Pycreus demangei** J. Raynal

C. densibulbosus Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 123, 1995; Nord. J. Bot. 16: 369, 1996.

Perennial herb with a short woody rhizome with *crowded bulbs* producing many leafy shoots and few fertile stems; bulbs ovate, *3−5 × 2−3 mm*; leaf sheaths with prominent blackish nerves, c. 5 of the sheaths with blades; blades to 6 cm long, 0,5−1 mm wide, sometimes minutely scabrid on margins; culms 5−10 cm long, 0,2−0,4 mm ∅; inflorescence a small anthela of 1−2 sessile spikelets or an up to 1 cm wide digitate cluster of 3−6 spikelets with or without an additional stalked spikelet or digitate cluster of 2−3 spikelets; spikelets linear, 3−8 mm long; nutlet known only immature.

Near pool with greatly changing water-level; c. 600 m alt.

Only known from the type collected in 1944; described in (1995) 1996.

C. denudatus L. f., incl. fa. *longispiculosus* Kük., fa. *singularis* Kük., var. *sphaerospermoides* (Cherm.) Kük., but excl. var. *aureobrunneus* (C. B. Clarke) Kük. (= *C. aureobrunneus*), var. *delicatulus* C. B. Clarke and var. *lucentinigricans* (K. Schum.) Kük. (both = *C. platycaulis*), and var. *sphaerospermus* (Schrad.) Kük (= *C. sphaerospermus*); Renier, Fl. Kwango 1: 70, 1948; Gordon-Gray, Cyper. Natal: 55, 1995; Lisowski, Fl. Rép. Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 190, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012; Mesterházy in Lidia 7/5: 104, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 168−169, 1983 (var. *denudatus*); Berhaut, Fl. ill. Sénégal 9: 182, 1988; Fl. Eth. & Eritrea 6: 439, 1997 (excl. syn. *C. sphaerorhizus* K. Schum.); Cook, Aquat. & wetland pl. south. Afr.: 75, 2004 (var. *denudatus*); Fl. Gabon 44, Cyper.: 99, 2012; Fl. Mascareignes 202, Cyper.: 35, 2018.

syn.: *C. amphibolus* Steud.; *C. spretus* Steud.; *C. flavissimus* Steud. 1829, nom. illeg., non Schrad. 1821 (= *C. sphaerocephalus*); *C. verrucinux* C. B. Clarke; *C. sphaerospermoides* Cherm., incl. var. *transiens* Cherm.; *C. haspan* L. var. *sphaerospermoides* (Cherm.) Cherm.; *C. platycaulis* Baker var. *resedens* Peter & Kük.; *C. platycaulis* sensu auctt., non Baker; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tufted herb with scale-covered rhizome to 3 cm ∅; culms 19−95 cm tall, 3-angled; *leaf blades* absent or to 1 cm long, usually red-brown, rarely green, sheaths light to dark red-brown, ending usually in a 3-angled red-brown tip; inflorescence an open or congested anthela, 2−15 × 2−12 cm; largest inflorescence-branches 1−8 cm long, carrying a subumbel-like cluster of digitately arranged spikelets; spikelets linear, 3−10 mm long; nutlet tuberculate.

Rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*, forest edge; small seepage area in *Hagenia abyssinica* grassland; swamps; along ditches and other wet habitats (river-sides; flood plains, damp grassland, moist rock crevices; dried-up ponds; rice fields); often in water or growing in mats of floating vegetation; 0−3000 m alt.

Namibia, S. Africa, Botswana, Lesotho, Swaziland; Madagascar; India, Viet-Nam; N. Australia.

Variable species that intergrades into *C. haspan* L. subsp. *juncoides* (Lam.) Kük. in Asia. It has also been confused with *C. sphaerospermus* a rather similar species with leafy culms; further investigations are needed (Cook, o.c.: 89). – "Very close to and probably a variety of *C. haspan* without blade or reduced to 1 cm long".

C. derreilema Steud., incl. var. *brevispiculosus* Kük., subsp. *deckenii*, and var. *tsaratananensis* (Cherm.) Kük., but excl. var. *ajax* (C. B. Clarke) Kük. (= *C. ajax*); Podlech in Mitt. Bot. Staatssamml. München 4: 108, 1961; Troupin, Fl. Rwanda 4: 442, 1988; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 77, 2006; Fl. Trop. E. Afr., Cyper.: 197−198, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 155, 1983; Fl. Eth. & Eritrea 6: 435, 1997.

syn.: *C. deckenii* Boeckeler; *C. tsaratananensis* Cherm.; *C. tschinsendensis* Turrill; *C. pustulatus* Vahl var. *tschinsendensis* (Turrill) Kük.

Tussocky perennial herb 0,6−2,25 m tall with thick woody rhizome; culms tufted, trigonous to triquetrous; leaves 0,6−1,2 m long, 1−3 cm wide; sheaths not prominent, only seen at the very base of the culm, brown; blades linear, w-shaped or flat, 0,6−1 m long, 1,1−2,2 cm wide; inflorescence a compound anthela, primary branches 6−15, 5−17 cm long; spikelets in digitate clusters at end of primary, secondary and tertiary branches, 1−6 per cluster, ovoid, 4−8 mm long, *glumes rounded at apex*.

Bamboo forest, often in open areas; *Hagenia* formations; sometimes in swamp, along streams, river beds; *Podocarpus latifolius*, *Dombeya* open forest; mountain forest ravines and in scrub; forest clearings; 1700−3170 m alt.

Madagascar.

C. dewildeorum (J. Raynal) Lye – See below under **Pycreus dewildeorum** J. Raynal

(**C. dichromus** C. B. Clarke, Bot. Jahrb. Syst. 38: 133, 1906); Kükenthal in Engler, Pflanzenreich IV. 20/101: 283, 1936; Fl. Eth. & Eritrea 6: 429, 1997.

Plant with a short woody rhizome; culms tufted, 30−50 cm tall, covered at base by old leaf sheaths; leaves shorter than culms, 3−5 mm wide, margins hyaline, gnawed; inflorescence a simple anthela with 5−6 branches to 3 cm long; spikelets 6−14, congested, oblong, 8−12 × 4−5 mm, 10-flowered.

Grassland.

Said to be near *C. poecilus* C. B. Clarke.

Collected in May 1901, in flower; Ellenbeck 2195: Gallahochland, Jeroko (3°24'N × 41°16'E).

Polhill & Polhill (E. Afric. plant collectors: 123−124, 2015) give the following information. Dr Hans Ellenbeck joined Baron von Erlangen's expedition to Aden, Somalia and Kenya in 1900−1901 as physician and botanist. They entered Kenya (K1) on 2 May 1901. Herbarium numbers 2153−2207 were collected in Kenya. 12−13 May they stayed at Jeroko (nº 2193, 2194), nº 2195 is not cited here. Ellenbeck's collections were deposited at B.

Taxonomic status uncertain.

C. dichrostachyus Hochst. ex A. Rich. (as *C. dichroostachyus* by Kükenthal in Engler, Pflanzenreich IV. 20/101: 233, 1936); Gereau & al., Lake Nyasa florist. checklist: 46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 165, 1983; Troupin, Fl. Rwanda 4: 439, 1988; Fl. Eth. & Eritrea 6: 436, 1997; Fl. Trop. E. Afr., Cyper.: 199, 2010.

syn.: *C. scirpoides* R. Br. ex Fresen. 1837, nom. illeg., non Vahl 1805 (= *C. crassipes*); *C. fresenii* Steud.; *C. andschoa* A. Rich.

Perennial stoloniferous herb to 100 cm tall; stolons reddish-brown to black, to 12 cm long, 1−3 mm ∅; culms 25−90 cm long, 0,4−1 cm ∅, 3-angled; leaves to 95 cm long, linear; blades flat, 0,4−1,8 cm wide; sheaths light to dark brown, the basal ones without blades; inflorescence a small to large, open (rarely congested), simple to compound anthela; primary branches 5−12, 1−9 cm long; secondary branches 0,1−3,5 cm long; spikelets in digitate clusters, sessile and at end of secondary and tertiary branches, 3−20 per cluster; spikelets ovoid, 2,5−4 mm long.

Wet habitats near streams and pools in forest or near cultivations; swamps; swampy depressions in grassland; riverine forest; rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea* on moist slope along trail; rice fields; ditches; 1170−3200 m alt.

S. Africa; Madagascar.

Culms used for thatching (Simpson & Inglis in Kew Bull. 56: 289, 2001).

Similar to *C. difformis* but: stoloniferous; inflorescence less congested, usually larger; leaves and bracts larger (fide Haines & Lye, l.c.).

C. difformis L., incl. var. *breviglobosus* Kük., fa. *humilis* Debeaux, fa. *maximus* C. B. Clarke, and var. *subdecompositus* Kük.; Gordon-Gray, Cyper. Natal: 56, 1995; Clarke & Mannheimer, Cyper. Namibia: 68, 1999 (map); Lisowski, Fl. Rép. Guinée 1: 395, 2009; Fl. Trop. E. Afr., Cyper.: 173−174, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez (Guinée-Bissau): 151, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (map, Schmidt & al. in Phytotaxa 304: 76, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 238, 1936; Kirkia 2: pl. XV/D (p. 65−66), 1961; Nord. J. Bot. 1: 58, 1981; Candollea 36: 454,1981; Haines & Lye, Sedges & rushes E. Afr.: 165−166, 1983; Berhaut, Fl. ill. Sénégal 9: 183, 1988; Fl. Eth. & Eritrea 6: 437, 1997; Fl. Pakistan 206, Cyper.: 132, 2001; Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 28, 2002; Phytomorphology 53: 118, 2003 (nutlet); Cook, Aquat. & wetland pl. south. Afr.: 90, 2004; Boulos, Fl. Egypt 4: 391, 2005; Akoègninou & al., Fl. analyt. Bénin: 92, 2006; Fl. Gabon 44, Cyper.: 99, 2012; Fl. China 23, Ill.: 301, 2012.

syn.: *C. protractus* Link 1821, nom. illeg., non Delile 1813; *C. goeringii* Steud.; *C. oryzetorum* Steud.; *C. lateriflorus* Torr. 1858, nom. illeg., non Steud. 1829 (= *C. longus* subsp. *longus*); World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual or perennial herb; culms 6−80 cm tall, 0,7−4 mm ∅, trigonous; basal leaves without blades; sheath green to reddish-brown, 2−10,5 cm long; blade 5−38 cm long, 2,4−8,3 mm wide; inflorescence simple to compound, sometimes almost capitate, 1−8 cm wide; primary branches 0−14, 0−7 cm long; spikelets in dense digitate clusters, 10−60 per cluster; each spikelet head 5−12 mm ∅; spikelets 2−6 mm long, c. 1 mm ∅, 6−30-flowered.

Swampy depression with *Mitragyna stipulosa*; clayey bottom of dried-up ponds; on spongy islands in river; damp sandy places near river; grassy places flooded in summer on river bank; alongside

water edges; temporary pools; roadside ditches; sandy beaches; old mine sites (Liberia); a common weed in cultivations, rice fields (See further below); often very abundant, forming large patches in shallow water, seasonally flooded areas; 0−2100 m alt.

Canary Isl. (Gran Canaria; Verloove in Acta Bot. Croat. 76: 122, 2017); Madeira; Morocco, Libya, Egypt; S. Tomé; Namibia, S. Africa (introduced probably with rice), Botswana, Lesotho, Swaziland; Mediterranean Europe; Turkey, Palestine, Arabia, Yemen (Wood, Handbook Yemen flora: 324, 1997), SW Asia from Afghanistan, Iran, Central Asia, through to SE Asia, Korea, Indonesia, China, Japan, Philippines, Australia, Pacific Isl., Hawaii; naturalized in N., C. & S. America.

An undesirable and common weed, often on irrigated land, "from 35°S to 45°N in tropical and subtropical areas of all continents…" (Fl. Pakistan 206: 134, 2001). Naczi & Ford (Sedges: uses…: 19−20, 28, 36, 2008) give further data. The plant is ranked 32nd among the world's worst weeds. It is resistant to bensulfurone in rice production. It is an excellent example of weeds that were introduced into the U.S.A. more than a century ago and spread. An individual can produce 50.000 seeds with a germination rate of 60 % or more; and can complete its life cycle every four to six weeks throughout the growing season.

Similar to *C. dichrostachyus* (See above under that species).

C. digitatus Roxb. 1820, non Nees 1834 (= *C. imbricatus*); subsp. **auricomus** (Sieber ex Spreng.) Kük., incl. var. *bruntii* S.S. Hooper, var. *abbreviatus* Kük., var. *aureorufus* (Boeckeler) Kük., and var. *minor* (C. B. Clarke) Kük.; but *excl*. var. *khasianus* (C. B. Clarke) J. Kern (India, Sri Lanka, Bangladesh (See Sedges of Karnataka in J. Econ. Tax. Bot., Add. Ser. 21: 91−92, 2002; Kew Bull. 66 : 307, 2011). In some floras cited as *C. auricomus* Sieber ex Spreng. – Clarke & Mannheimer, Cyper. Namibia: 68, 1999 (map); Lisowski, Fl. Rép. Guinée 1: 395, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 110, 2010 (as *C. auricomus*); Fl. Trop. E. Afr., Cyper.: 244, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (map by Schmidt & al. in Phytotaxa 304: 76, 2017); Onana, Fl. Cameroon 40: 222, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Kirkia 2: pl. XVIa, 1961; Haines & Lye, Sedges & rushes E. Afr.: 178, 1983; Berhaut, Fl. ill. Sénégal 9: 184, 1988; Fl. Eth. & Eritrea 6: 443, 1997; Cook, Aquat. & wetland pl. south. Afr.: 91, 2004; Boulos, Fl. Egypt 4: 377, 2005; Fl. Gabon 44, Cyper.: 49, 2012.

bas.: *C. auricomus* Sieber ex Spreng.

syn: *Papyrus auricomus* (Sieber ex Spreng.) Schrad.; *Cyperus aureorufus* Boeckeler; *C. auricomus* Sieber ex Spreng. var. *minor* C. B. Clarke, and var. *microstachyus* Boeckeler; *C. ornithopodioides* Delile, nom. nud.; see also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial robust (tufted) herb to 2(−3) m tall, with a creeping short woody rhizome 0,8−1,2 cm ∅ covered with brown scales or black fibres; culms 0,5−1,6(−3) m long, 0,2−1 cm ∅, sharply trigonous with concave sides, sometimes ± winged; leaves few; sheaths purplish, 10−30 cm long; blades flat, 18−85 cm long, 0,7−2 cm wide, with 1−3 prominent veins; inflorescence simple to compound, of 1 sessile and 2−9 stalked groups of spikes; primary branches 3−8, 2,7−12−20 cm long; spikes 1−5 cm long, 0,8−3 cm wide of 15−60 spikelets; spikelets sessile, at right angles to the rachis, in crowded clusters, 20 to many per cluster; spikelets linear, 4−10 mm long.

Swamps; near or in water; seasonally wet grasslands; black alluvial soil; inundated clayey soils; forest swamps; (swampy) river banks; pools; waste places; canal banks; rice fields; weed in perennial

crops in Somalia (fide Simpson & Inglis in Kew Bull. 56: 290, 2001); 0−3300 m alt.

Egypt; Namibia, Botswana, S. Africa.

Subsp. **digitatus** occurs in E & tropical Asia, N Australia, tropical and subtropical America.

Culms used for weaving mats and baskets (Simpson & Inglis, l.c.); and used as substitute for perfume (also rhizome slightly fragrant); culms suitable for pulping (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 613, 1985).

C. dilatatus Schumach.; Brunel & al., Fl. analyt. Togo in Englera 4: 538, 1984 (with synonyms in herb.); Thulin, Fl. Somalia 4: 122, 1995; Simpson & Inglis in Kew Bull. 56: 290, 2001; Akoègninou & al., Fl. analyt. Bénin: 92, 2006; Lisowski, Fl. Rép. Guinée 1: 395−396, 2009; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 150, 2010; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 221, 2011; Fl. Trop. E. Afr., Cyper.: 236, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (map by Schmidt & al. in Phytotaxa 304: 76, 2017); Lidia 7/5: 105, 2012 (Liberia); Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 132, 1935 (as *C. gracilinux*); Haines & Lye, Sedges & rushes E. Afr.: 196, 1983; Berhaut, Fl. ill. Sénégal 9: 185, 1988; Fl. Gabon 44, Cyper.: 49, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 343, 2014.

syn.: *C. tenuiculmis* Boeckeler 1879, nom. illeg., non 1870; *C. gracilinux* C. B. Clarke; *C. pseudosphacelatus* Chiov. 1915, nom. illeg., non Boeckeler 1890 (America); *C. esphacelatus* Kük.

Perennial herb to 82 cm tall with solitary stems and somewhat swollen stem bases arising from the end of long slender stolons; culms few, 27−70 cm long, 1,5−3,5 mm ∅, triangular or somewhat compressed; leaf sheaths green or reddish; blades linear, flat, 15−32 cm long, 3,5−10 mm wide; inflorescence simple; primary branches 5−8, 2−11 cm long; spikelets in loose clusters, sessile and at end of primary branches, 11−20 per cluster; spikelets linear, 9−20 mm long.

Damp grassland; seasonally wet habitats; swamps; wooded savanna; open forests on sand; along roads in forest; humid clayey or sandy soils; shrubland; sandy beaches; fallows; ruderal in plantations; weed in gardens, irrigated fields; "a pest of lawns in Ghana and difficult to eradicate" (Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 613, 1985); 0−1150 m alt.

Bioko/Fernando Poo.

Used in folk medicine.

Resembling *C. sphacelatus* but: with arcuate stolons, and glumes without dark spots.

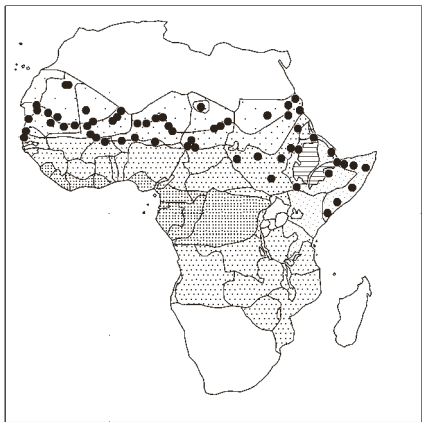
C. diloloensis (Kük. ex Cherm.) Kük. – See below under **Pycreus diloloensis** Kük. ex Cherm.

C. dipsacoides (Schumach.) Bauters – See above under **Ascolepis dipsacoides** Schumach.

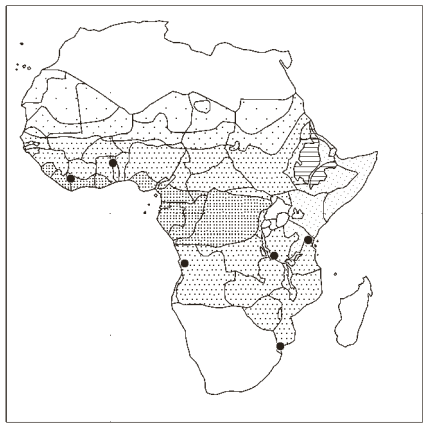
C. distans L. f. 1782, non G. Mey. 1818 – See below under **Mariscus longibracteatus** Cherm.

C. diurensis Boeckeler – See below under **Mariscus diurensis** (Boeckler) C. B. Clarke

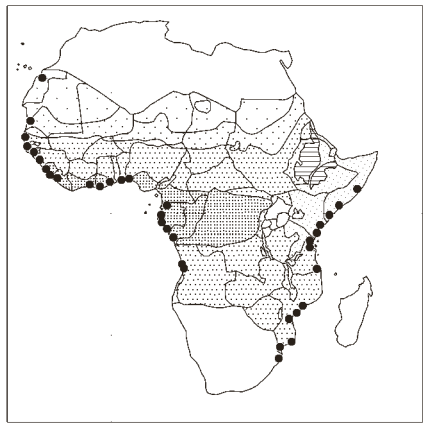
C. dives Delile – Treated below as **C. exaltatus** Retz. var. **dives** (Delile) C. B. Clarke



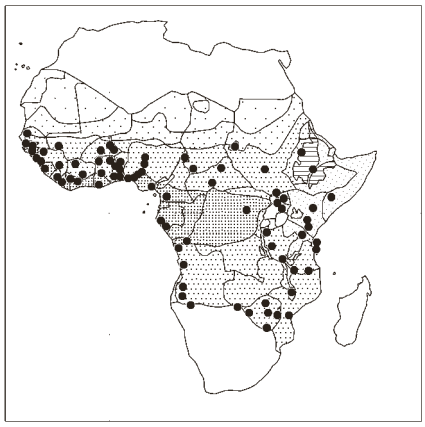
Cyperus conglomeratus (incl. C. jeminicus, C. mauretaniensis, C. sahelii)



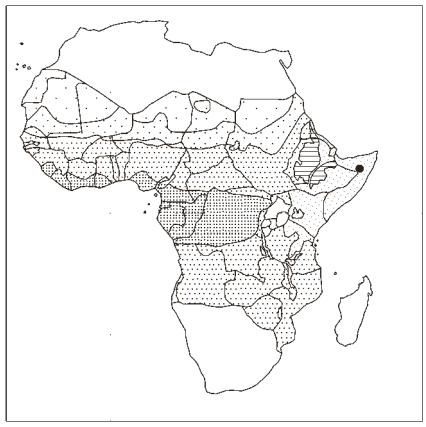
Cyperus corymbosus



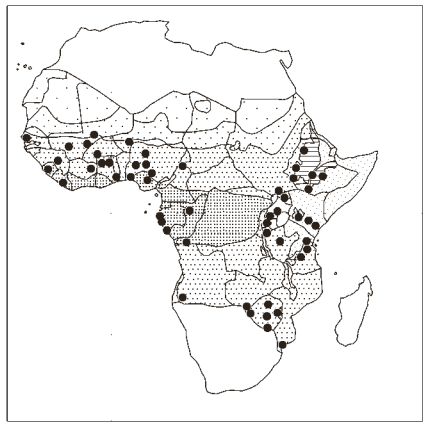
Cyperus crassipes (incl. C. subtilis)



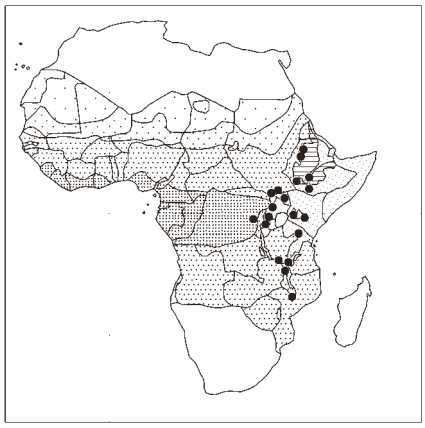
Cyperus cuspidatus



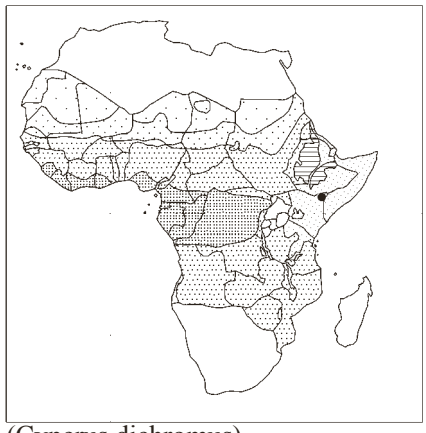
Cyperus densibulbosus



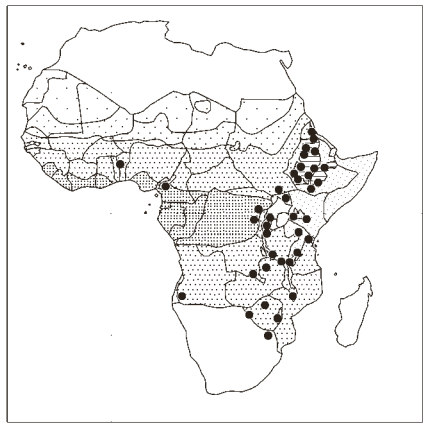
Cyperus denudatus



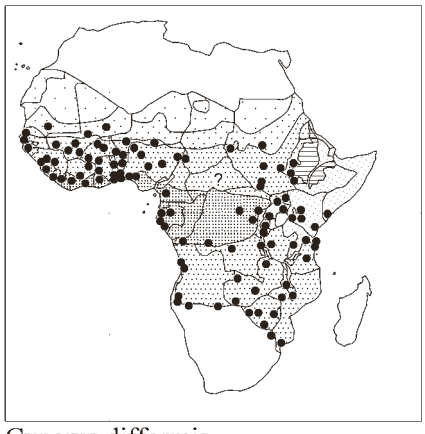
Cyperus derreilema



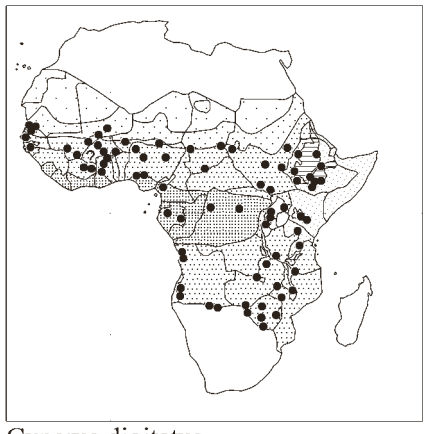
(Cyperus dichromus)



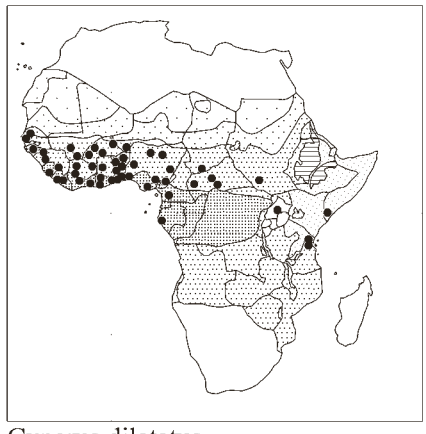
Cyperus dichrostachyus



Cyperus difformis



Cyperus digitatus subsp. auricomus



Cyperus dilatatus

C. dubius Rottb. – See below under **Mariscus dubius** (Rottb.) Kük. ex G. E. C. Fischer

C. durus Kunth – See below under **Mariscus durus** (Kunth) C. B. Clarke

C. dwarkensis K. C. Sahni & H. B. Naithani – See below under **Pycreus dwarkensis** (K. C. Sahni & H. B. Naithani) S. S. Hooper

C. echinus (J. Raynal) Bauters – See below under **Lipocarpha echinus** J. Raynal

C. elegantulus Steud. – See below under **Pycreus elegantulus** (Steud.) C. B. Clarke

C. endlichii Kük.; Fl. Trop. E. Afr., Cyper.: 237, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 188, 1983.

Perennial herb to 75 cm tall with a very slightly swollen culm-base emitting ± 1 mm thick scale-covered stolons; culms few, 40−60 cm long, 1−2 mm ∅, trigonous; leaves to 40 cm long; sheath green to dark brown, 4−11 cm long; blade linear, 10−34 cm long, 2,3−6,4 mm wide; inflorescence a simple anthela, primary branches 3−6, 1,5−9 cm long; spikelets in loose clusters at end of primary branches, linear, 6−13 mm long.

Grassland; wooded grassland; in damp places; swamp; 400−1150 (−? 4000) m alt.

Known from very few, and old, collections. The gathering Endlich 778 (type) from Kilimanjaro, Kibohöhe, 1150 m alt., is not dated. Rudolf Endlich (not Endlicher !) came to Kilimanjaro in 1908, and in 1910 he left German East Africa, where he collected ca. 1000 numbers (Polhill & Polhill, E. Afric. plant collectors: 126, 2015). There are 3 Peter collections made in 1914−1915. A further gathering is due to Edward Armitage Robinson (Nº 1640), from the Rukwa Valley which he visited in 1962. He collected nearly 7000 specimens particularly in Zambia between 1952 and 1967 (Polhill & Polhill, o.c.: 397−398).

Perhaps a high altitude and reduced form of *C. rotundus*.

C. erectus (Schumach.) Mattf. & Kük. – See below under **Kyllinga erecta** Schumach.

C. erinaceus (Ridl.) Kük. – See below under **Sphaerocyperus erinaceus** (Ridl.) Lye

C. eriocauloides (Steud.) Bauters – See above under **Ascolepis eriocauloides** (Steud.) Nees & Steud.

C. erythrocephalus (S. S. Hooper) Bauters – See above under **Ascolepis erythrocephala** S. S. Hooper

C. esculentus L., incl. var. *angustispicatus* Britton, fa. *angustispicatus* (Britton) Fernald, subsp. *aureus* K. Richt., var. *cyclolepis* Boeckeler ex Kük., fa. *evolutus* C. B. Clarke, var. *heermannii* (Buckley) Britton, var. *helodes* (Schrad. ex Nees) C. B. Clarke, var. *leptostachyus* Boeckeler, var. *lutescens* (Torr. & Hook.) Kük. ex Osten, var. *macrostachyus* Boeckeler, fa. *macrostachyus* (Boeckeler) Fernald, var. *nervosostriatus* (Turrill) Kük., var. *phymatodes* (Muhl.) Kük., fa. *princeps* C. B. Clarke, var. *sativus* Boeckeler, and var. *sprucei* C. B. Clarke – Thulin, Fl. Somalia 4: 122, 1995; Clarke & Mannheimer, Cyper. Namibia: 68, (map), 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015; Tindano & al. in Bois Forêts Trop. 325/3: 26, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 118, 1935; Kirkia 2: pl. IX C (p. 56−57), 1961; Fl. Eth. & Eritrea 6: 451, 1997; Fl. Pakistan 206, Cyper.: 99, 2001; Boulos, Fl. Egypt 4: 384, 2005; Fragm. Florist. Geobot. Polon. 14: 11, 2007; Taiwania 52: 61−63, 2007; Fl. Trop. E. Afr., Cyper.: 228, 2010; Kew Bull. 65: 456, 2010 (as *C. nervosus*); Fl. Gabon 44, Cyper.: 55, 2012; Clark & al., Guide vascul. flora Kitty Hawk Woods… USA: 36, 2016; Follak & al., Biol. flora C Europe: *Cyperus esculentus* in Pl. Ecol. Evol. Syst. 23: 33−51, 2016; Browning & Goetghebeur, Sedge genera Africa & Madag.: 43, 2017.

syn.: *Pycreus esculentus* (L.) Hayek; *Cyperus aureus* Ten. subsp. *esculentus* (L.) Nyman; *Pterocyperus esculentus* (L.) Opiz; *Chlorocyperus aureus* (Ten.) Palla ex Kneuck.; *Cyperus melanorhizus* Delile; *C. nervosus* Bertol.; *C. tenorei* C. Presl.; *C. tenoreanus* Schult. & Schult. f.; *C. callistus* Ridl.; *C. buchananii* Boeckeler; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial *stoloniferous* herb 50−100 cm tall; stolons to 15 cm long, 5−15 mm ∅, covered with brown scales and ending in a *blackish tuber* 3−8 mm ∅; culms 10−74 cm long, 1,5−4,5 mm ∅, trigonous or triquetrous; leaf sheaths pale brownish-green to green, 2−9 cm long; blades linear, flat, 11−29 cm long, 2−8 mm wide, apex acuminate; inflorescence simple or compound, primary branches 5−10, 1−18 cm long; spikelets *golden or rust* in loose clusters, sessile, 9−20 per cluster, linear, 5−16 mm long.

Swamps; seasonally wet grassland; damp grassy places; hollows; savannas; gravelly places; inselbergs; riverbeds; sand beaches; muddy and sandy soils; disturbed ground; weed of gardens and cultivations; invasive; 0−2200 m alt.

Variable species. Certain infraspecific taxa may be distinguished at variety level according to certain authors, e.g. var. *esculentus* "roughly corresponds with the cultivated plant (chufa) and probably originates in The Old World tropics. The other varieties are natives of the New World and var. *leptostachyus* Boeckeler apparently is the most widespread taxon in most parts of western Europe and in North America" (Verloove & Sánchez Gullón in Fl. Medit. 20: 144, 2010). For further notes on varieties, See, e.g., Schippers & al. in Syst. Bot. 20: 461−481, 1995; Pascual & al. in Econ. Bot. 54: 439−448, 2001; Bohren & Wirth in Agrarforschung Schweiz 4: 460−467, 2013; De Castro & al. in Ann. Bot. 115: 733−745, 2015; Follak & al. in Perspectives Pl. Ecol. Evol. Syst. 23: 33−51, 2016. – A weedy cultivar or a cultivated weed ? (See F. T. de Vries in Econ. Bot. 45: 27−37, 1991).

Cape Verde Isl.; Bioko/Fernando Poo, Príncipe; Madeira, Azores; N Africa to Egypt; Namibia, S. Africa, Botswana, Lesotho, Swaziland; Comoros, Mauritius, Madagascar. A weed in all continents. S & C Europe (map by Follak & al., o.c.: 38); SW Russia, Palestine, Turkey, Syria, Caucasus, Iran, India, Pakistan; newly naturalized in Taiwan (Taiwania 52: 59−60, 2007); Malaysia (uncommon); Australia; N., C. & S. America.

Widely cultivated for its edible tubers (chufa or tiger nut) eaten raw or cooked. They have a sweet or nutty taste. Used as substitute for almonds in confectionary; and after roasting and grinding used as substitute for coffee or cocoa (See Simpson & Inglis in Kew Bull. 56: 292−293, 2001; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 614−616, 1985). According to Naczi & Ford (Sedges: uses…: 5, 18, 22, 35−36, 2008) the plant is ranked as the world's 16th worst weeds; it reproduces primarily from tubers which can remain dormant for prolonged periods, and it can survive cold winter conditions. It is often planted to provide food for deer,

turkey, wild hogs, and also for domesticated animals. Formerly it was cultivated in the Mediterranean. According to Dajdok & al. (in Fragm. Florist. Geobot. Polon. 14: 9, 2007) the plant is continuously increasing in distribution. As a weed it causes substantial yield losses in field crops, but remains difficult to control by mechanical, chemical or biological means (cf. Follak & al., o.c.; Bohren & Wirth, o.c.).

Sometimes confused with *C. rotundus*: "Often mixed with pale coloured races of *C. rotundus*, but stolons more slender and tubers more regularly zoned, glumes less closely imbricating and glume sides with several distinct, pale nerves" (Fl. Pakistan, l.c.).

C. exaltatus Retz., excl. var. *digynus* (Boeckeler) F. N. Williams (= *C. alopeuroides*). – Cf. text below.

In Flora of Tropical East Africa (Cyperaceae: 244−246, 2010) Beentje "decided to re-instate varietal status for *dives*. The taxa occur in the same area and in the same type of habitat." *C. dives* has been kept separate based on more numerous and more crowded spikelets and slightly shorter glumes (1,2−1,7 mm, not 1,8−2,9 mm). This concept was followed by Gereau & al. (Lake Nyasa florist. checklist: 46, 2012) as well as by Darbyshire & al., (Pl. Sudan & S. Sudan: 106, 2015). However, some authors of Asiatic floras published earlier had re-instated the varietal status; e.g. Prasad & Singh (Sedges of Karnataka, India, in J. Econ. Taxon. Bot., Add. Ser. 21: 95−97, 2002), and Patil & Prasad (Notes on Cyperaceae of Goa 1 in Ind. J. Forestry 32: 447, 2009). Flora of China 23 (Texts): 230−231, 2010, recognizes var. *exaltatus* but adds 3 varieties, viz. var. *hainanensis* L. K. Dai, var. *megalanthus* Kük., and var. *tenuispicatus* L. K. Dai. An eventual var. *dives* does not figure there as it has a more westerly distribution area.

Verloove published a thorough study of some *Cyperaceae* in Europe (Webbia 69: 179−223, 2014), including *Cyperus exaltatus*. He wrote: "*Cyperus exaltatus* is a member of the small but very complex section *Exaltati* and its taxonomy is not undebated. The two other members of this section [*C. dives* (incl. *C. immensus* C. B. Clarke) and *C. imbricatus*] are not easily told apart and the exact placement of a third species, *C. alopecuroides*, is also controversial. Boulos (2005) considers the latter to be conspecific with *C. dives*, as characters separating these species are not constant. However, although *C. alopecuroides* superficially resembles *C. dives* both are readily distinguished on glume, nutlet and stigma characters." Verloove further discussed the varieties *megalanthus* Kük. and var. *iwasakii* (Makino) T. Koyama, which are characterized by very densely arranged, larger and multi-flowered spikelets. He also mentioned the European populations (Italy) with "untidily arranged spikes and spikelets… more characteristic of *C. exaltatus*". These he ascribed to *C. exaltatus* s.l., incl. *C. dives*. – There is also another confusion possible, i.e. with *C. imbricatus*, but southern European populations are referable to *C. exaltatus* s.l.

The name *Cyperus exaltatus* Retz. 1789 was lectotypified by Mallick & al. in Phytotaxa 375: 187−188, 2018.

We have opted for a wide concept of *C. exaltatus*, thus including *C. dives* at a varietal rank.

C. exaltatus s.l.; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 300, 2005; Akoègninou & al., Fl. analyt. Bénin: 93, 2006. – Icon.: Verloove in Webbia 69: 198, 2014. – Cf. text above.

Var. **exaltatus**; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 616, 1985; Thulin, Fl. Somalia 4: 120, 1995; Simpson & Inglis in Kew Bull. 56: 294, 2001; Figueiredo & Smith, Pl. Angola: 179, 2008; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017). – Icon.: Engler,

Pflanzenreich IV. 20/101: 65, 1935; Haines & Lye, Sedges & rushes E. Afr.: 179, 1983; Berhaut, Fl. ill. Sénégal 9: 189, 1988; Fl. Eth. & Eritrea 6: 444, 1997, Kukkonen, Fl. Pakistan, 206, Cyper.: 90, 2001; Fl. China 23, Ill.: 307−308, 2012.

syn.: *C. alopecuroides* J. Koenig ex Roxb. 1820, non Rottb. 1773; *C. iwasakii* Makino; *C. exaltatus* var. *iwasakii* (Makino) T. Koyama; *C. exaltatus* var. *minor* J. M. Black, var. *divergens* Kük., and var. *serpens* Kük.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with crowded stems on a short, ± vertical, woody rhizome c. 1 cm ∅; culms tufted, 0,4−1,8 m long, 0,3−1 cm ∅ (var. *exaltatus*) or 0,5−1,5 mm ∅ (var. *dives*), triangular, base slightly swollen; basal leaves many, to 80 cm long; blade 0,8−1,2 cm wide (var. *exaltatus*) or 1,3−3,5 mm wide (var. *dives*), flat; sheaths thick, green to purple, 7−15 cm long; inflorescence an open, simple to compound anthela, 10−30 cm long, 10−40 cm wide, consisting of 4−6 subsessile and stalked spikes and 5−15 stalked groups of spikes on 5−20 cm long rays; involucral bracts leaf-like, 4−6, 20−80 cm long, 8−12 mm wide (var. *exaltatus*), 14−28 mm wide (var. *dives*); spikelets in dense elongate clusters, sessile and at end of primary and secondary branches, 15−120 per cluster, 6−12 mm long (var. *exaltatus*) or 3,4−7 mm long (var. *dives*).

Water edges; swamps; in open water; 0−1800 m alt.

Widespread in tropical W. and C. Africa, down into Angola; S. Tomé; Seychelles; S & SE Asia to Japan and S-wards to S Australia; C. & S. America.

Var. **dives** (Delile) C. B. Clarke

bas.: *C. dives* Delile

syn.: *C. alopecuroides* Rottb. var. *dives* Boeckeler and var. *microstachys* Boeckeler; *C. canariensis* Steud.; *C. immensus* C. B. Clarke, incl. var. *taylorii* C. B. Clarke, and var. *petherickii* (C. B. Clarke) Kük.; *C. petherickii* C. B. Clarke; ?? *C. baronii* C. B. Clarke var. *interpositus* Kük. (cf. Fl. Trop. E. Afr., Cyper.: 252, 2010).

References: Thulin, Fl. Somalia 4: 120, 1995; Gordon-Gray, Cyper. Natal: 56−57, 1995; Clarke & Mannheimer, Cyper. Namibia: 68, 1999 (map); Kukkonen, Fl. Pakistan 206, Cyper.: 87−88, 2001; Figueiredo & Smith, Pl. Angola: 179, 2008; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012; Gereau & al., Lake Nyasa florist. checklist: 46, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 180, 1983; Berhaut, Fl. ill. Sénégal 9: 187, 1988; Troupin, Fl. Rwanda 4: 441, 1988; Fl. Eth. & Eritrea 6: 444, 1997; Cook, Aquat. & wetland pl. south. Afr.: 91, 2004.

Description: See above under var. **exaltatus**. The distinguishing characters are: leaf blade wider (1,3−3,5 cm); involucral bracts wider (1,4−2,8 cm); spikelets spreading, very numerous and crowded so as to obscure the rhachis; *spikelets golden-yellow* (not reddish-brown), shorter (3−7 mm long); glumes with a narrow keel (not mucronate, 1,2−1,7 mm long, with a clear green keel).

Swamps; river banks; moist depressions; in open water; sugar cane fields; 0−2450 m alt.

Egypt; Madagascar; Syria, Pakistan, India, Vietnam.

C. eximius (C. B. Clarke) Mattf. & Kük. – See below under **Kyllinga eximia** C. B. Clarke

C. felicis (J. Raynal) Lye – See below under **Pycreus felicis** J. Raynal

C. fenzelianus Steud. – See below under **Cyperus longus** L. subsp. **longus**.

C. ferrugineoviridis (C. B. Clarke) Kük. – See below under **Mariscus ferrugineoviridis** (C. B. Clarke) Cherm.

C. fertilis Boeckeler; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 113, 1899; Cable & Cheek, Pl. Mt Cameroon: 154, 1998; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 226, 2002; Harvey & al., Pl. Lebialem Highl., Cameroon: 152, 2010; Chatelain, Cartes distrib. pl. Côte d'Ivoire: 221, 2011. – Icon.: C. B. Clarke, Illustr. Cyper.: pl. 12, 1909; Lowe & Stanfield, Fl. Nigeria, Sedges: 48, 1974; Nord. J. Bot. 1: 59, 1981; Haines & Lye, Sedges & rushes E. Afr.: 163, 1983; Fl. Gabon 44, Cyper.: 101, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 347, 2014.

syn.: *C. lanceola* Ridl.

Annual (or perennial) herb, tufted, with a slightly thickened base; culms flaccidly decumbent, 2−20 cm to long, 1−2 mm ∅, triquetrous with longitudinal crests, with 5−10 leaves close to the base; leaf blades flaccid, plane, *lanceolate-elliptic* (wider above than below), 5−17 cm long, 0,5−2,5 cm wide, margins and main nerves slightly scabrid, in form resembling those of *Plantago lanceolata*; inflorescence a simple umbel with *6−9 rays 20−30 cm long*, each bearing a cluster of 2−4 *flattened*, white or light brown spikelets; spikelets 5−10 mm long; involucral bracts leaf-like, 5−10 cm long; culms sometimes decumbent and rooting at viviparous spikelets.

Roadsides, along tracks in forest, stream sides; swampy forest; marshy clearing or damp places in forest; 0−2100 m alt.

Distinctive plant, the *sole African Cyperus* with leaf blade broadest in middle; umbel rays longer than culms.

Uncertain in Uganda/Ruwenzori (Fl. Trop. E. Afr., Cyper.: 256, 2010).

Used as a pot plant, ornamental (Naczi & Ford, Sedges: uses…: 27, 72, 2008).

C. fibrillosus Kük. – See below under **Pycreus fibrillosus** (Kük.) Cherm., and **P. scaettae** Cherm.

C. fischerianus Schimp. ex A. Rich., incl. var. *ugandensis* Lye; Fl. Trop. E. Afr., Cyper.: 202−203, 2010; Gardner & al. in Kew Bull. 69: 9501: 8, 2014 (map); Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 156, 1983; Fl. Eth. & Eritrea 6: 436, 1997.

Perennial herb to 1,3 m tall with short thick rhizome forming dense tussocks; culms densely tufted, 0,5−1,2 m long, 2,4−5,7 mm ∅, trigonous; leaves to 1,45 m long; sheaths dark purple, glossy, 5−27 cm long; blades linear, flat, 0,54−1,3 m long, 0,9−1,6 cm wide, margins and major veins scabrid; inflorescence compound, often *proliferating*; primary branches 7−17, 3−10 cm long; spikelets in digitate clusters at end of primary, secondary and tertiary branches, 1−5 per cluster, linear-lanceolate, 4−12 mm long.

Rocky outcrops; riverine forest; woodland; forest margins; often near wet habitats; in shade and semi-shade; open places in upland forest; 400−2650 m alt.

(**C. fissus** Steud.); Fl; Trop. Afr. 8: 368, 1902; Kükenthal in Engler, Pflanzenreich IV. 20/101: 105, 1935; Fl. Eth. & Eritrea 6: 488, 1997; Fl. Trop. E. Afr., Cyper.: 256, 2010.

Description from these sources and Wood, Handbook Yemen flora: 324, 1997.

Stoloniferous perennial herb, stolons covered by brown scales; culms single, 5−12 cm long, triangular, base surrounded by brown fibrous leaf sheath remains; leaves ± as long as culms, 2 mm wide, apex long-acuminate; inflorescence a simple anthela, a dense head subtended by 2−3 bracts longer than anthela; spikelets 5−7, dark brown, lanceolate, 6−10 mm long, glumes with a green keel and prominent lateral veins.

Mountain meadows. In Yemen in grassland 2900−3200 m alt.

Type: Schimper 992, Ethiopia, Simen, Gessgessa. According to Fl. Ethiopia, l.c., the type material is very immature, and it is not possible to refer the plant to any other species with certainty. Kükenthal (l.c.) also cites a specimen (Gregory 102) from Sabaki River (Kenya 4/7, c. 3°S × 38°31'−40°08'E), a specimen not seen for Fl. Trop. E. Africa.

Clarke in Fl. Trop. Afr. 8: 368, 1902, compares the plant with *C. rotundus*. According to Wood (l.c.) it is closely related to *C. rigidifolius*.

A doubtful species not mapped by us.

C. flavescens L. – See below under **Pycreus flavescens** (L.) P. Beauv. ex Rchb.

(***C. flavissimus*** Schrad. 1821 non Steud. 1829 = *C. denudatus*) – See below under **C. sphaerocephalus** Vahl

C. flavoculmis Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 251, 2010. – Icon.: Nord. J. Bot. 3: 223, 1983; Haines & Lye, Sedges & rushes E. Afr.: 179, 1983.

Perennial herb to 1,4 m tall with erect woody rhizome 3−8 mm ∅; culms 0,9−1,2 m long, 3−7 mm ∅, trigonous, *yellow* at least *in lower half*; leaves many at base; sheath green and yellow with a wide transparent margin, base dark purplish, 3−12 cm long; blade flat, 40−70 cm long, 6−10 mm wide, scabrid on margins and major veins; inflorescence a compound anthela, primary branches 7−8, to 13 cm long; spikelets in loose clusters, 6−30 per cluster, linear, 20−35 mm long.

Edge of seasonal pool in salt-marsh; 1650 m alt.

Only known from the type collected in 1971.

C. fluminalis Ridl. – See below under **Pycreus fluminalis** (Ridl.) Rendle

C. foliaceus C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 193−194, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 167, 1983; Fl. Eth. & Eritrea 6: 438, 1997.

Annual herb to 78 cm tall; culms 3−59 cm long, 1,3−4 mm ∅, trigonous; leaves to 52 cm long; sheath green to greenish-brown, 1−7,5 cm long; blade flat, 3−44 cm long, 2−10 mm wide, often with distinct transverse bars and prominent veins; inflorescence a compound anthela; primary branches 7−15, 2−13 cm long with a green-pale brown prophyll at base; spikelets in digitate clusters, sessile and at end of primary, secondary and tertiary branches, 1−4 per cluster, linear, 3−11 mm long.

Woodlands; seasonally wet habitats; swamps; along streams and pools; usually on sandy soil; rice fields; 0−1100 m alt.

Species with a "confusing variability" even within the same collection (See Fl. Trop. E. Afr., l.c.).

Not in Togo: the type Warnecke 388 is from Tanzania (not in Fl. analyt. Togo in Englera 4, 1984). Occurrence in Namibia refers to *C. tenuispica*, fide Archer & Craven, Sabonet News 9/1: 20, 2004. Weed in rice fields, Gambia, Sierra Leone, cited by Simpson & Inglis in Kew Bull. 56: 294, 2001.

Resembling *C. haspan* but annual, lacking rhizome or stolons.

(***C. fontinalis*** (Cherm.) Kük.)

bas.: *Pycreus fontinalis* Cherm.

See below under **Pycreus fontinalis** Cherm. and **P. sanguineosquamatus** Van der Veken in particular.

In the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, *Pycreus sanguineosquamatus* Van der Veken, Bull. Jard. Bot. Etat Bruxelles 25 ! (not 24): 145, 1955, is treated as a synonym of *C. fontinalis*, a plant from Central Madagascar, whereas *P. sanguineosquamatus* was collected at Elisabethville, SE-most Zaire. Van der Veken compares his new plant with *Pycreus atrorubidus* Nelmes, and also with *Cyperus teneriffae* Poir., a synonym of *C. rubicundus* Vahl. The latter suggestion seems plausible, although the flower of *Pycreus sanguineosquamatus* is said to have 2 stamens and 2 stigmas (not 3). A drawing of the anthela (*P. sanguineosquamatus*) seems to be in late flowering stage, and stamens and stigmas may have fallen off. We prefer treating this plant as **Pycreus sanguineosquamatus** Van der Veken (See below under that name).

C. fulgens C. B. Clarke, excl. var. *contractus* Kük. (= ***C. usitatus*** Burch. subsp. ***palmatus*** Lye; syn.: *C. palmatus* (Lye) C. Archer & Goetgh.); Clarke & Mannheimer, Cyper. Namibia: 69, 1999 (map); Figueiredo & Smith, Pl. Angola: 179, 2009; Fl. Trop. E. Afr., Cyper.: 229−230, 2010; Archer & Goetghebeur in Bothalia 41: 300−301, 2011. – Icon.: Engler, Pflanzenreich IV. 20/101: 123, 1935; Haines & Lye, Sedges & rushes E. Afr.: 192, 1983.

syn.: *Mariscus fulgens* (C. B. Clarke) Vorster ined. (in Clarke & Mannheimer, Cyper. Namibia: 92, 1999).

Perennial herb to 60 cm tall with small tunicated corms (not often collected) distant from the plant base at tips of very thin, easily broken rhizomes (Archer & Goetghebeur in Bothalia 41: 301, 2011); bulbs 10−15 mm ∅; culms 18−53 cm long, 1,1−2,3 mm ∅, triquetrous; leaves many at base, to 34 cm long; sheath brown, 2−6,5 cm long; blade linear, 19−28 cm long, 1,6−5,7 mm wide, shining; inflorescence simple, primary branches 2−5, 1,5−5,5 cm long; spikelets in lax clusters on an elongated axis, at end of primary branches, 10−20 per cluster, linear-ovate, 3,2−4,6 mm long; glumes reddish brown, with prominent lateral veins.

Open bushland; gravelly ridge; wooded grassland; seasonally wet grassland; 800−1100 m alt.

Namibia, Botswana, S. Africa.

Tubers eaten raw, cooked or roasted (Simpson & Inglis in Kew Bull. 56: 294, 2001).

Near in structure to *C. esculentus*.

The whole group *C. fulgens*-*C. usitatus* is in need of revision (Archer & Goetghebeur in Bothalia 41: 301, 2011).

Cited under *Mariscus* in South. Afric. Bot. Divers. Network Report 33: 89, 2004 (Mapura & Timberlake, eds., A checklist of Zimbabwean vascular plants).

(***C. fuscovaginatus*** Kük.); Engler, Pflanzenreich IV. 20/101: 546, 1936. – Icon.: R. E. Fries in Wiss. Erg. Schwed. Rhodesia-Kongo-Exp. 1911−1912, Erg.: pl. I/4, 1921.

A true **Mariscus**, near *M. amauropus*.

See below at end of **Mariscus** p. 275.

C. ghanechinatus Huygh – See below under **Kyllinga echinata** S. S. Hooper

C. gigantobulbes Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 178, 2010. – Icon.: Nord. J. Bot. 3: 219, 1983; Haines & Lye, Sedges & rushes E. Afr.: 254−255, 1983.

Perennial herb with c. 3 cm thick swollen base containing many to *7 cm long* brown tough leaf *sheaths* from previous years growth, the outer splitting into fibres; culms solitary, 70−80 cm long, 2−4 mm ∅, trigonous; leaf sheaths pale reddish brown to straw-coloured, to 7 cm long; blade flat, linear, 20−30 cm long, *6−9 mm* wide; inflorescence capitate, *2,5−3 cm across*, of many spikelets in a dense congested head, each 10−12 mm long; glumes white.

Seasonally wet habitats (near river); waste ground by road-side; 100 m alt.

Only known from the type collected in 1955.

C. glaucophyllus Boeckeler, incl. var. *zambesiensis* (C. B. Clarke) Kük. and var. *longispiculosus* Kük.; also incl. *C. pseudoleptocladus* Kük. (See Note below); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 77, 2006; Fl. Trop. E. Afr., Cyper.: 198, 200−201, 2010; Gereau & al., Lake Nyasa florist. checklist: 46, 2012; Gardner & al. in Kew Bull. 69: 9501: 1−10, 2014 (comparative table p. 3, map p. 8); Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 157, 1983 (incl. *C. pseudoleptocladus*).

syn.: *C. zambesiensis* C. B. Clarke in Durand & Schinz, Consp. Fl. Afr. 5: 581, 1894, nom. nud. et in Fl. Trop. Afr.: 345, 1902 (type Buchanan 47); *C. leptocladus* sensu Oliv. 1887, nom. nud., non Kunth 1837; *C. pseudoleptocladus* Kük., incl. var. *polycarpus* Kük.; *C. baronii* C. B. Clarke p.p. (quoad specim. Buchanan 47); *C. deckenii* C. B. Clarke p.p.

Perennial herb with creeping woody rhizome; culms 28−120 cm long, 1−4 mm ∅, trigonous; leaves to 80 cm long; sheath purplish at base, brown, 2−11 cm long; blade linear, flat, 22−75 cm long, 3,7−12 mm wide; inflorescence a compound anthela, primary branches 5−11, 1−12 cm long; spikelets in digital clusters at end of primary and secondary branches, 2−8 per cluster, ± linear, 4−12,5 mm long, 10−12-flowered.

Forest; riverine forest; secondary areas in forest zone; openings in rain-forest; shrubby forest borders; in dense shade on forest floor; forest/woodland transition, in shade of rocks or bluff; path sides; 750−2500 m alt.

S. Africa, Swaziland. – Identification of the single S. Sudanese specimen requires confirmation (Darbyshire & al., l.c.).

Note: In Fl. Trop. E. Afr. (l.c.) *C. pseudoleptocladus* Kük. is treated as a synonym of *C. glaucophyllus*. We follow this concept, as we consider the differences very small. However, Gardner & al. (o.c.), like Haines & Lye (o.c.: 156), point out that the involucral bracts are "much wider at the base" in *C. pseudoleptocladus* "than in any other species in this group". In their comparative table Gardner & al. (p. 3) give the following data: *C. glaucophyllus* 1,58−7,51, mean 3,11 mm, versus *C. pseudoleptocladus* 1,79−12,9, mean 5,8 mm. More important, though, seems to be the chromosome number: *C. glaucophyllus* n = 16, *C. pseudoleptocladus* n = 9. The distribution areas are different although they overlap in Rwanda and Malawi-Mozambique. *C. pseudoleptocladus* has a western distribution, whereas *C. glaucophyllus* occurs in the eastern part of the area, with an outlyer in C. Congo-Brazzaville (See map partly based on Gardner & al.).

C. gossweileri Kük. – See below under **Pycreus pubescens** Turrill 1914.

C. graciliculmis Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 153, 2010. – Icon.: Lye in Nord. J. Bot. 3: 225, 1983; Haines & Lye, Sedges & rushes E. Afr.: 161, 1983.

Perennial herb to 55 cm tall with a short creeping rhizome; culms tufted, crowded, many, slender, 20−50 cm long, *0,5−0,6 mm* ∅, trigonous to angular, wiry; leaves to 50 cm long; sheath light reddish-brown above, dark purplish below; blade (when present) flat, filiform, 20−50 cm long, *0,5−0,6 mm* wide; inflorescence capitate; spikelets in digitate clusters, *2−3 per cluster*, sessile, more rarely with an additional stalked spikelet on a 2−5 mm long peduncle, ± linear, 3−6 mm long. – Recognisable by its wiry and slender habit.

Very steep slopes, partly with vertical bare rocks, on summit edge; 2075 m alt.

Only known from the type collected in 1978.

C. cf. *graciliculmis* sensu Troupin, Fl. Rwanda 4 : 446, 1988 = *C. vandervekenii*.

C. gracillimus (Chiov.) Kük. – See below under **Pycreus gracillimus** Chiov.

C. grandibulbosus C. B. Clarke, incl. var. *amplus* Kük.; Thulin, Fl. Somalia 4: 124, 1995; Simpson & Inglis in Kew Bull. 56: 295, 2001; Fl. Trop. E. Afr., Cyper.: 177, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 193, 1983; Fl. Eth. & Eritrea 6: 452, 1997.

syn.: *C. giolii* Chiov., incl. var. *nogalensis* (Chiov.) Kük.; *C. bulbosus* Vahl var. *flavus* Chiov., nom. nud.; *Mariscus nogalensis* Chiov.

Perennial herb to 60 cm tall with 0,7−1 cm thick *black* bulbs; culms 10−60 cm long, 1−2, 4 mm ∅, trigonous, growing directly from the bulb; leaves many from base, to 42 cm long; sheath pale brownish-green, 1,5−10 cm long, somewhat fleshy; blade linear, 19−32 cm long, 1,9−4 mm wide; inflorescence (loosely) capitate, *golden brown*, very occasionally simple, 2−4 cm ∅, then primary branches 0,3−0,4 cm long; spikelets in loose digitate clusters, many per cluster, lanceolate, 8−20 mm long.

Seasonally wet habitats; wooded grassland and grasslands; often on red loamy or sandy soil; often in irrigated land; near sea-level-1500 m alt. – Also a weed (Kenya).

C. grandis C. B. Clarke; Simpson & Inglis in Kew Bull. 56: 295, 2001; Fl. Trop. E. Afr., Cyper.: 218−219, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 178, 1983.

Perennial herb with culms 1,1−2 m tall, 0,9−1,2 cm ∅, trigonous; leaves to 2 m long; sheath reddish-brown to reddish-black, 17−35 cm long; blade 0,8−1,75 m long, 1,7−4 cm wide, flat; inflorescence simple to compound, primary branches 3−10, 10−30 cm long; spikelets in crowded clusters on elongated axis, sessile and at end of primary and secondary branches, many per cluster, linear, 5−24 mm long.

Swamps, in stagnant or moving water; sea-level-400 m alt.

? W Madagascar.

C. gubanii Väre & Kukkonen, Ann. Bot. Fenn. 42: 479, 2005 (with fig.).

syn.: *C. macrorrhizus* sensu Thulin, Fl. Somalia 4: 126, 1995 p.p., quoad specim. Hemming 2380.

Perennial glaucescent rigid herb 60 cm tall; rhizome *lacking*; culm erect, *6 mm* ∅, cylindrical, distinctly furrowed; leaves almost equal to stem; basal sheaths to c. 10 cm long; blades to 30 cm long, 3 mm wide, straight, channeled, flexuous, apex long-attenuate; inflorescence an anthela 9 × 6,5 cm; spikelets in spreading clusters 26−36 per cluster, sessile, ellipsoid, 12−18 mm long; nutlet distinctly winged.

Sand dunes by coastal hills; < 140 m alt. (450 ft.)

Perhaps related to *C. conglomeratus* and *C. eremicus* (from Arabian Pen. to Afghanistan). It is characterized by the stout and rigid habitus, and especially by very thick stem; as in these two species it has also winged nutlets.

Perhaps a coastal form of *C. conglomeratus*.

Only known from the type collected in 1962.

C. gypsophilus Lye – See below under **Mariscus gypsophilus** (Lye) J.-P. Lebrun & Stork

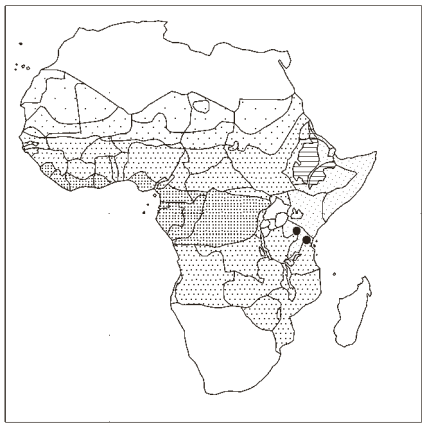
C. hamulosus M. Bieb. – See below under **Mariscus hamulosus** (M. Bieb.) S. S. Hooper

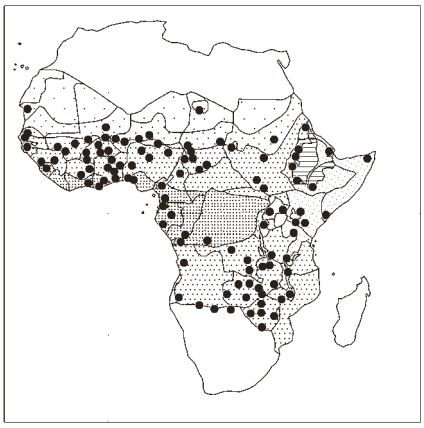
C. haspan L. (also known as *C. "halpan"*, See Comment below), incl. var. *adenophorus* (Schrad. ex Nees) Kük., var. *amplissimus* Kük., var. *bulboides* Kük., var. *cancellaltus* (Ridl.) Kük., var. *coarctatus* Nees and fa. *coarctatus* (Nees) Osten, var. *firmicaulis* Kük., var. *flaccidissimus* Kük., var. *gracillimus* Ridl., subsp. *juncoides* (Lam.) Kük., and ? var. *laevinux* C. B. Clarke, etc. (See further World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew); but *excl*. var. *sphaerospermoides* (Cherm.) Cherm. (= *C. denudatus* L. f.). – Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 617, 1985; Thulin, Fl. Somalia 4: 117−118, 1995; Akoègninou & al., Fl. analyt. Bénin: 93, 2006; Lisowski, Fl. Rép. Guinée 1: 396, 2009; Naczi & Ford, Sedges: uses…: 36−37, 2008; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017); Velayos & al., Fl. Guinea Ecuat. 11: 101, 2014;. Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 168, 170 (as *C. kipasensis*), 1983; Berhaut, Fl. ill. Sénégal 9: 190, 1988; Fl. Eth. & Eritrea 6: 438, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 31, 2002; Fl. Trop. E. Afr., Cyper.: 206, 2010; Fl. Gabon 44, Cyper.: 101, 2012; Fl. China Ill. 23: 302, 2012; Clark & al., guide vascul. fl. Kitty Hawk Woods… N. Carol., USA: 38, 2016.

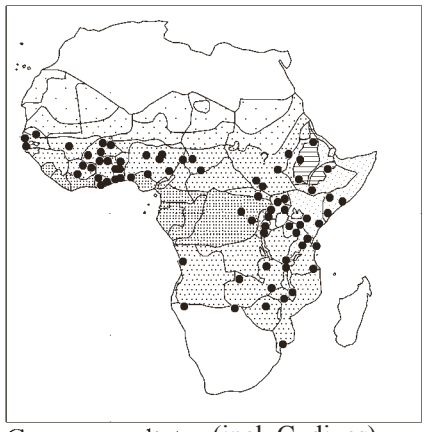
syn.: *C. juncoides* Lam.; *C. adenophorus* Schrad. ex Nees; *C. riparius* Schrad. ex Nees; *C. cancellatus* Ridl.; *C. phaeorhizus* K. Schum., incl. var. *princeae* (C. B. Clarke) Kük.; *C. princeae* C. B. Clarke; *C. kipasensis* sensu Haines & Lye, o.c.: 170, 1983, non Cherm.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

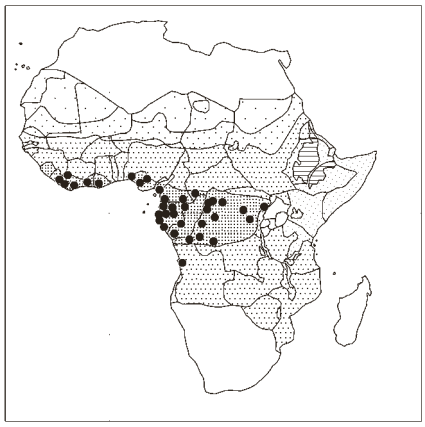
Perennial herb with sometimes creeping rhizome; roots reddish; culms pale to bright green, crowded, 5−90 cm tall, 0,8−2,5 mm ∅, trigonous; leaf sheaths reddish-brown or purple, 1−11 cm long; blade present at least at some shoots, pale to bright green, 5−33 cm long, 1,5−4,5 mm wide; inflorescence a simple to compound anthela, primary branches 1−10, 1−7 cm long; spikelets in sessile digitate clusters at end of primary and secondary branches, 2−9 per cluster, ± ovoid, 3−12 mm long, 7−30-flowered.

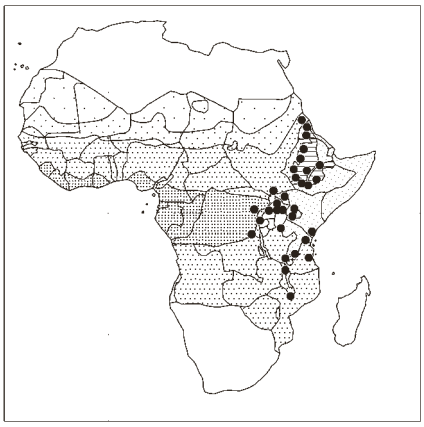
Damp meadows; deeper forest-marshes; partly dried marshes; spongy places at a ferruginous spring; spongy thickets on river banks; marshes with *Flagellaria guineensis*; swampy sites; wet hollows and seasonally wet grassland; areas of impeded drainage; thin seepage soil over rock; forest gallery; occasionally in silty sites; river-banks; granitic and dripping granitic slabs with *Utricularia* sp.; peat with *Afrotrilepis pilosa*; dune depressions

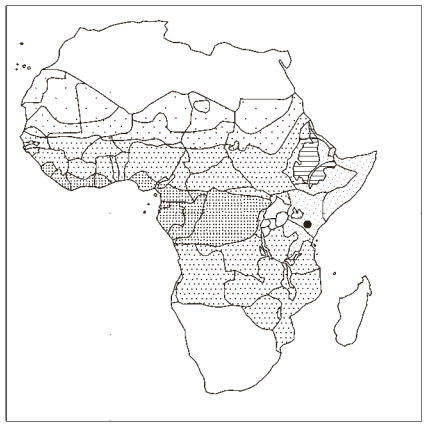

Cyperus endlichii

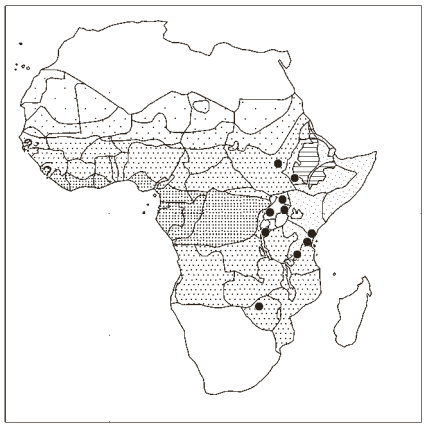

Cyperus esculentus

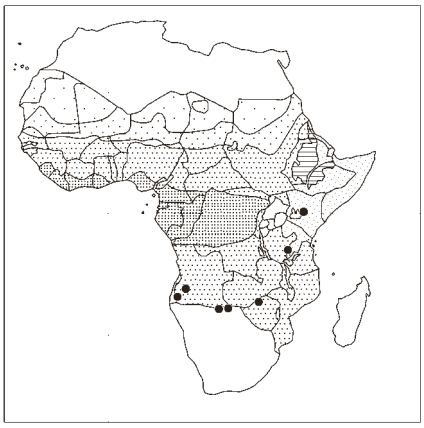

Cyperus exaltatus (incl. C. dives)

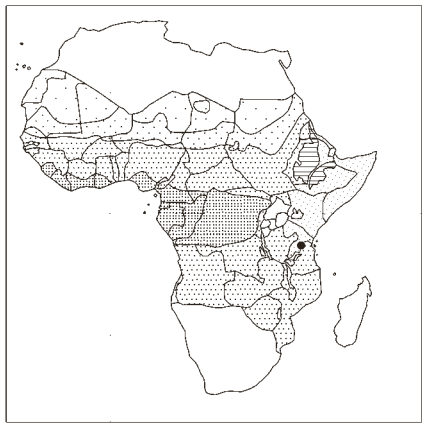

Cyperus fertilis

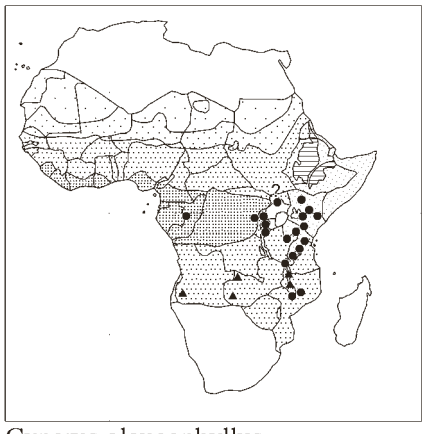

Cyperus fischerianus

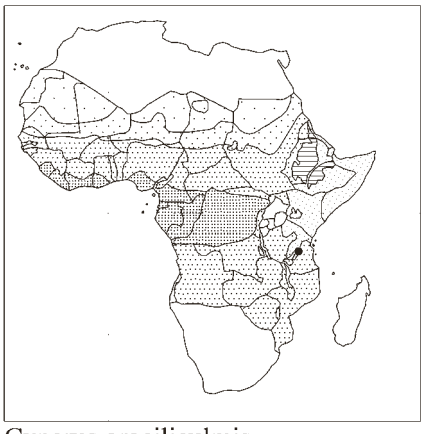

Cyperus flavoculmis

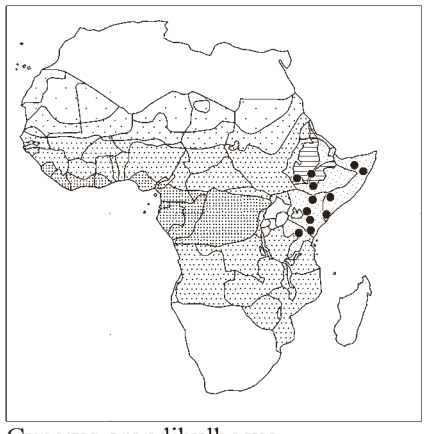

Cyperus foliaceus


Cyperus fulgens
(s.str.)


Cyperus gigantobulbes


Cyperus glaucophyllus
(incl. C. pseudoleptocladus ▲)


Cyperus graciliculmis


Cyperus grandibulbosus

["tannes", Casamance, Senegal, with *Hygrophila auriculata*, *Sphaeranthus senegalensis* (*sphaeranthetosum senegalensis* subass. of *Hygrophiletum barbatae*; Müller & Deil in Phytocoenologia 35: 362, 2005)]; weed in rice fields and rotation crops; sometimes locally common; 0−2700 (? 3000) m alt.

C. haspan is among the top 5 tropical weed species (Naczi & Ford, o.c.: 5, 36−37, 2008), i.e. among the world's worst weeds. "An individual plant can produce more than 50.000 achenes per year…, and although plants produce achenes during the first season of growth, they do not form rhizomes until the second year… it germinates and grows well in wet, sandy, acid soils".

Tropical and subtropical regions of the world, widespread; S. Africa; Madagascar, Comoros, Seychelles. Not in Namibia (Archer & Craven, Sabonet News 9/1: 20, 2004; cited specimens are *C. denudatus* var. *denudatus* and *C. sphaerospermus*; cited by Podlech 1967). Occurrence in S Somalia (S2, S3) needs confirmation.

Fibres used for mats and baskets (Simpson & Inglis in Kew Bull. 56: 295−296, 2001); plant also used for obtaining potash salts; also planted as an ornamental.

Close to *C. denudatus*, but more slender. Plants without rhizome and with a more short-lived look are referred to *C. foliaceus*, which might only be a form of *C. haspan* (Fl. Trop. E. Afr., Cyper.: 207, 2010).

Comment on the spelling of *haspan* vs. *halpan* (cf. Fl. Trop. E. Afr., Cyper.: 207, 2010). Kartesz & Gandhi (in Phytologia 72: 19, 1992) thoroughly investigated the use of these two epithets, and concluded that Linnaeus' use (1753: 45) of *C. haspan* was deliberate. This spelling goes back to his *Flora Zeylanica* (1747: 15) where Linnaes cites both spellings from the pre-Linnean literature: '*haspan*' from Burman (1737: 108) and '*halpan*' from P. Hermann (K. Wilson in Telopea 5: 598, 1944). Cf. also Wilson in Cyperaceae Newsletter 9: 8, 1991.

C. hemisphaericus Boeckeler – See below under **Mariscus hemisphaericus** (Boeckeler) C. B. Clarke

C. hensii C. B. Clarke; Fl. Trop. Afr. 8: 334−335, 1901; Kükenthal in Engler, Pflanzenreich IV. 20/101: 260, 1936. – Icon.: De Wildeman & Durand, Ill. fl. Congo (Ann. Mus. Congo 1: pl. 8, 1898).

syn.: *C. kuebensis* Kük.; *C. spissiflorus* "C. B. Clarke" sensu Baum in Warburg, Kunene-Sambesi-Exped.: 178, 1903, non (C. B. Clarke) K. Schum. 1895 [= *Pycreus spissiflorus* (*"spiciflorus*") C. B. Clarke].

Perennial glabrous herb with short hard rhizome; culms 20−50 cm tall, decumbent at base, ± rounded; leaves c. 1/3 the length of the culm; sheaths red-brown, torn, scarious; inflorescence a simple anthela, contracted, with 1−6 rays 0−1,2 cm (rarely to 4 cm) long; spikelets digitate, sessile, 12−20 to a spike, compressed, c. 1 cm long, 16−24-flowered.

Brook sides in humid sandy places; riverside on white sand; waterfalls; flooded plain; 300−1170 m alt.

C. hirtellus (Chiov.) Kük. – See below under **Mariscus hirtellus** Chiov.

C. holostigma C. B. Clarke ex Schweinf.; Fl. Trop. Afr. 8: 318, 1902; Engler, Pflanzenreich IV. 20/101: 301, 303, 1936, p.p., excl. "Damaraland" (Dinter 2537, 2446); Fl. Eth. & Eritrea 6: 464, 1997; Fl. Trop. E. Afr., Cyper.: 161, 2010. [– Icon.: Proc. Rhodesia Sci. Assoc. 33: 63, 1934, probably represents *C. schinzii*.]

Dwarf perennial herb with short woody rhizome, 14 cm tall; culms tufted, 4,5−12 cm long, 0,4−0,8 mm ∅, trigonous; leaves to 6 cm long; sheath pale brown to brown, 0,5−1 cm long; blade linear, 2−5 cm long, 0,6−1 mm wide; inflorescence capitate with 3−8 spikelets per head, these linear, 5−16 mm long; glumes almost black with prominent pallid margin.

Wet depressions in wooded grassland; shallow soils; often flat limestone outcrops with shallow pockets of soil; 1530−2700 m alt.

Perhaps a true *Pycreus*; more material is needed.

C. holstii Kük.; Engler, Pflanzenreich IV. 20/101: 75, 1935, excl. syn. *C. zollingeri* Steud. var. *robusta* K. Schum.; Fl. Trop. E. Afr., Cyper.: 196−197, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 185, 1983.

Perennial herb to 1,15 m tall, with stolons c. 2 mm ∅ covered by loose scales; culms few, 45−67 cm long, 3,5−6 mm ∅, trigonous; leaves 1−3, to 50 cm long; sheath pale brown, sometimes pale reddish-brown, 6−12 cm long; blade flat, 16−38 cm long, 5,5−10 mm wide; inflorescence a compound anthela, primary branches 5−12, 6−26 cm long; spikelets in digitate spikes, 6−20 per spike, sessile and on primary and secondary branches; spikelets linear, 5−30 mm long.

Seasonally wet grassland; alongside pools; swamps; 0−250 m alt.

Very similar to *C. longus* from which it differs by its longer peduncles (10−30 cm vs. 0,5−10 cm), more numerous (6−9 vs. 2−5) and larger involucral bracts (15−40 × 0,4−0,8 cm vs. 6−28 × 0,2−0,5 cm).

C. hortensis (Salzm. ex Steud.) Dorr – See below under **Kyllinga pumila** Michx.

C. hyalinus Vahl – See below under **Queenslandiella hyalina** (Vahl) Ballard

C. hystricoides (B. Nord.) Bauters – See below under **Lipocarpha rehmannii** (Ridl.) Goetgh.

C. imbricatus Retz. 1788, incl. var. *capitatus* (Boeckeler) Kük., var. *densispicatus* (Hayata) Ohwi, var. *elongatus* (Boeckeler) Kük., subsp. *elongatus* (Boeckeler) T. Koyama, var. *minor* (Boeckeler) Kük., var. *multiflorus* Kük., and var. *viridispicatus* (Boeckeler) Kük. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 617, 1985; Clarke & Mannheimer, Cyper. Namibia: 69 (map), 1999; Simpson & Inglis in Kew Bull. 56: 296, 2001; Fl. Pakistan 206, Cyper.: 93, 2001; Akoègninou & al., Fl. analyt. Bénin: 93−94, 2006; Lisowski, Fl. Rép. Guinée 1: 396, 2009; Fl. Trop. E. Afr., Cyper.: 251−252, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 116, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 65, 1935; Haines & Lye, Sedges & rushes E. Afr.: 181, 1983; Berhaut, Fl. ill. Sénégal 9: 191−192, 1988; Fl. Eth. & Eritrea 6: 445, 1997; Amini Rad in Iran. J. Bot. 9: 259, 2002; Boulos, Fl. Egypt 4: 377, 2005; Fl. Gabon 44, Cyper.: 55, 2012; Fl. China Ill. 23: 308, 2012.

syn.: *C. radiatus* Vahl 1805, nom. illeg. (based on the same König type, India); *Dichostylis radiata* (Vahl) Palla; *Cyperus verticillatus* Roxb.; *C. digitatus* Nees 1834, nom. illeg., non Roxb. 1820; *C. radiatus* var. *capitatus* Boeckeler, and var. *elongatus* Boeckeler, and var. *minor* Boeckeler; *C. flexifolius* Boeckeler; *C. involucratus* Poir. 1806, nom. illeg., non Rottb. 1772 (= *C. alternifolius* subsp. *flabelliformis*), nec R. Br. 1814 (= *C. conglomeratus*

subsp. *conglomeratus*); See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb 0,25−1,35 m tall with a short woody rhizome; culms few, 26−60 cm long, 3−4,3 mm ∅, trigonous; leaves few, to 50 cm long; sheath pale brown and purple, 3,5−17 cm long; blade flat, linear, 22−33 cm long, 4,2−7 mm wide; inflorescence a compound anthela, primary branches 4−8, 0 (var. *capitatus*)−2,5−6 cm long; spikelets in *very dense spikes*; spikes elongate, 2−3,5 cm long; spikelets 30−80 per spike, ± ovoid, 3−6 mm long. – Habit of *Mariscus*.

Swamps; along streams, lakes, rivers; forest edges; sandy clayey places; also in muddy- or clayey denudated soils; rice fields; fallows; 0−1250 m alt.

Species highly polymorphous.

Egypt; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Seychelles; S & SE Asia from Afghanistan, Iran, India, Sri Lanka, E-wards to China, East Indies, Philippines; C. & S. America. In tropical regions of all continents.

Fibres used for mats & screens. Provides grazing for animals in Sudan.

Confusion possible with *C. exaltatus*: plants naturalised in Europe determined as *C. imbricatus* belong to *C. exaltatus* (Verloove in Webbia 69: 196, 199, 2014).

C. impubes Steud. – See below under **Mariscus impubes** (Steud.) Napper

(C. inauratus (Nees ex Boeckeler) Mattf. & Kük. – See below under (**Kyllinga inaurata** Nees ex Boeckeler), in Fl. Trop. E. Africa, Cyperaceae: 328, 2010, treated as **Kyllinga sp. A**

C. incompressus C. B. Clarke in Fl. Trop. Afr. 8: 348 !, 1901; Engler, Pflanzenreich IV. 20/101: 160−161, 1936; Brunel & al., Fl. analyt. Togo in Englera 4: 541, 1984; Lisowski, Fl. Rép. Guinée 1: 396, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017). – Icon.: Candollea 36: 460, 1981; Haines & Lye, Sedges & rushes E. Afr.: 266, 1983; Berhaut, Fl. ill. Sénégal 9: 193, 1988.

syn.: *C. trachycladus* Cherm. var. *multiflorus* sensu Berhaut, Fl. Sénégal, ed. 2: 384, 1967.

Annual or perennial erect tufted herb 0,4−1 m tall; culms triangular, almost 3-winged; leaves from the basal 30 cm; sheaths reddish-brown, wide; blades flat, 30−60 cm long, 2−8 mm wide; inflorescence a simple or compound anthela, primary branches 5−10, very unequal, 5−25 cm long with 1 to several (sub-)sessile spikes or new groups of sessile and stalked spikes 1,5−3 cm long, each with 3−10 spreading lanceolate spikelets 10−17 mm long.

Seasonally wet habitats; swampy river banks and near water; rice fields.

N Madagascar (disjunct area).

"Has been distributed as *C. compressus* L.: the obtuse round-backed glumes are very different" (Fl. Trop. Afr., l.c.).

C. indecorus Kunth – See below under (**Mariscus indecorus** (Kunth) Podlech)

C. inselbergensis Lye – See below under **Kyllinga inselbergensis** (Lye) J.-P. Lebrun & Stork

C. iria L., incl. fa. *chrysomelinis* (Link) Kük., fa. *diaphaniria* (Steud.) Miq., fa. *flavescens* (Benth.) Domin, var. *flavescens* Benth., fa. *multiflora* Domin, var. *paniciformis* (Franch. & Sav.) C. B. Clarke, var. *santonici* (Rottb.) Fernald & Griscom, and var. *typicus* Domin; but excl. var. *rectangularis* Kük. (India). – Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 617, 1985; Thulin, Fl. Somalia 4: 124−125, 1995; Gordon-Gray, Cyper. Natal: 59, 1995; Clarke & Mannheimer, Cyper. Namibia: 69, 1999 (map); Simpson & Inglis in Kew Bull. 56: 296, 2001; Prasad & Singh, Sedges Karnataka (India): 100−102, 2002; Mbayngone & al. in Etudes flor. vég. Burkina Faso 9: 35−38, 2005; Akoègninou & al., Fl. analyt. Bénin: 94, 2006; Naczi & Ford, Sedges: uses…: 5, 15, 20, 22−23, 36, 2008; Fl. Trop. E. Afr., Cyper.: 214, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 45, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015. – Icon.: Clarke, Illustr. Cyp.: pl. 14/1−2, 1909; Haines & Lye, Sedges & rushes E. Afr.: 198, 1983; Berhaut, Fl. ill. Sénégal 9: 194, 1988; Fl. Eth. & Eritrea 6: 453, 1997; Fl. Pakistan 206, Cyper.: 112, 2001; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 34, 2002; Fl. Gabon 44, Cyper.: 57, 2012; Fl. China Ill. 23: 317, 2012.

syn.: *Chlorocyperus iria* (L.) Rikli; *Cyperus panicoides* Lam.; *C. chrysomelinus* Link; *C. resinosus* Hochst. ex Steud.; See also Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual or short-lived perennial herb to 50(−90) cm tall (very variable in size and robustness) with numerous yellowish short roots; culms single to tufted, 8−50 cm long, 0,6−3 mm ∅, triangular; leaves to 37 cm long; largest blades 4−25 cm long, 1−5 mm wide, flat; sheaths green to reddish brown, 3,5−8 cm long; inflorescence very variable in size and branching, from a compound loose anthela to a congested head, 1,5−20 cm long, 1−20 cm wide, with groups of spikes sessile or on 0,5−15 cm long major rays (3−8), unequal, patent, the longer ones paniculately branched into 3−5 spikes; spikes ± sessile, rather irregular in shape or length, with 5−26 spikelets spicately arranged, strongly compressed, 4−14 mm long, 6−16-flowered.

Seasonally wet habitats: temporary pools and edges thereof, rice fields; swamp grassland; streambanks in dry zones; *Cyperus iria* community, an ephemeral type of flooded rice fields (Phytocoenologia 35: 370, 2005); weed in gardens; 0−1200 m alt. – A serious weed and ranked 33rd among the world's worst weeds.

Namibia, S. Africa, Botswana, Swaziland; Madagascar, Mauritius; Spain (Verloove & al. in Fl. Mediterr. 24: 201, 2014); tropical and subtropical regions of the Old World, widely distributed in tropical Asia (most common in SE Asia) from Caucasus, Iraq, India through to Malaysia, Indonesia, Japan, extending to Australia; Pacific Islands. Introduced and naturalised into E & SE USA more than a century ago (Rhodora 119/978: 178−179, 2017), West Indies, C. & S. America.

Fibres used for matting.

For fruit morphology, See Bajpai & al. in Phytomorphology 53: 117, 121, 2003.

C. isolepis (Nees) Bauters – See below under **Lipocarpha hemisphaerica** (Roth) Goetgh.

(**C. jeminicus** Rottb. 1773, non Retz. 1786)

Very doubtfully different from **C. conglomeratus** Rottb. 1773 (cf. Thulin, Fl. Somalia 4: 127, 1995) from which it differs in

its: – more flattened reddish brown spikelets; – slender roots without tomentum. It is intermediate between *C. mudugensis* D. A. Simpson and *C. conglomeratus*. – Boulos, Fl. Egypt 4: 395, 2005, also treats *C. jeminicus* as a synonym of *C. conglomeratus*. – Icon.: Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 102, 2001.

For a more complete treatment of *C. jeminicus* we list synonyms and literature references below. However, *C. jeminicus* is mapped by us with **C. conglomeratus** (p. 105).

syn.: *C. conglomeratus* Rottb. subsp. *jeminicus* (Rottb.) Lye; *C. proteinolepis* Steud., incl. var. *pumilus* Boeckeler; *C. excisus* Boeckeler; *C. conglomeratus* fa. *excisus* (Boeckeler) Kük., and fa. *pumilus* (Boeckeler) Kük., and var. *multiculmis* (Boeckeler) Kük.; *C. pungens* Boeckeler var. *multiculmis* Boeckeler; *C. cadamostoi* Bolle ex E. H. L. Krause; *C. olivetorum* Murb.; *C. adansonii* C. B. Clarke; *C. nubianus* Gand.; *C. plurinervosus* Bodard (cf. also below under that species, p. 131).

Literature references:

Lowe & Stanfield, Fl. Nigeria: sedges: 43, 1974; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 618, 1985; Burkill, Useful pl. W. Trop. Afr., ed.2, 1: 618, 1985; Berhaut, Fl. ill. Sénégal 9: 179, 1988; Thulin, l.c.; Fl. Eth. & Eritrea 6: 463−464, 1997; Wood, Handbook Yemen flora: 324, 1997; Simpson & Inglis in Kew Bull. 56: 297, 2001; Boulos, l.c.; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 115 ("cadamostii"), 116, 2010; Le Floc'h & al., Fl. Tunisie…: 342, 2010 ("cadamosti"); Bull. Inst. Sci. Rabat, Sect. Sci. Vie 33: 59, 2011 (Mauritania); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 106, 2015.

(**C. juncelliformis** Peter & Kük.); Fl. Trop. E. Afr., Cyper.: 254, 2010. – Icon.: Engler, Pflanzenreich IV. 20/101: 346, 1936.

Herb with short rhizome; culms several, tufted, 20−30 cm tall, compressed with obtuse angles; leaves with long purplish sheaths, the upper 1−2 with a short narrow blade; involucral bracts 2, longer than inflorescence; inflorescence a simple anthela with 2−4 rays to 2 cm long, each with 5−10 spikelets, these compressed, 12−16 mm long, 14−26-flowered.

Riverside; 990 m alt.

Known only from the type (Peter 36328); Tanzania (T4), Kigoma Distr., Uvinza, Malagarasi stream (5°06'S × 30°50'E). – Insufficiently known species (known from the illustration), not mapped. – Certainly a true **Pycreus** without a valid name in that genus.

(**C. kabarensis** Cherm., Bull. Jard. Bot. Etat Bruxelles 14: 310, 1937) cited as such in the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

In Bull. Jard. Bot. Etat, Bruxelles 14: 310−311, 1937, C. E. B. Bremekamp described a new *Pavetta* (*Rubiaceae*) species from Zaire, Kabare, lake side grass steppe on Lake Kivu, August 1914, J. Bequaert 5353.

In Index Kewensis, Suppl. 10, 1947, both names figure, viz. *Cyperus kabarensis* Cherm. … 1937 (p. 69), and *Pavetta kabarensis* Bremek. …1937 (p. 162), with the same reference. – Conclusion: "*C. kabarensis* Cherm." is a true "**ghost species**".

C. kaessneri C. B. Clarke; Engler, Pflanzenreich IV. 20/101: 306, 1936; Fl. Eth. & Eritrea 6: 465, 1997; Fl. Trop. E. Afr., Cyper.: 160, 2010.

Annual tussocky herb; culms tufted, 3,5−18,5 cm tall, 0,5−0,7 mm ∅, trigonous; leaves to 9 cm long; sheath rusty

reddish-brown, 1−3 cm long, with many veins; blade linear, 2−6 cm long,1,3−3 mm wide; inflorescence capitate; spikelets 4−20 per head, squarrose, 6,5−12 mm long.

Seasonally damp habitats, on limestone rocks; bushland; 0−900(−1500 ?) m alt.

Perhaps only a variety of *C. rubicundus*.

C. karisimbiensis (Cherm.) Kük. – See below under **Mariscus karisimbiensis** Cherm.

C. karlschumannii C. B. Clarke; Lowe & Stanfield, Fl. Nigeria: sedges: 43, 1974; Fl. Trop. E. Afr., Cyper.: 256, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017). – Icon.: Candollea 36: 447, 1981.

syn.: *C. margaritaceus* Vahl var. *karlschumannii* (C. B. Clarke) Kük.

Stiffly erect perennial herb 0,7−1,2 m tall; stem-base thickened and bulb-like, rounded-triangular, sides 1,5−2 mm wide; leaf sheaths purple; blades glaucous, to 5 mm wide; inflorescence a digitate cluster of 1−5 *golden-yellow* spikelets 1,5−3,2 cm long, 1 cm wide (a specimen from Ghana has spikelets nearly 5 cm long, with 25 glumes along each side; fide Lowe & Stanfield, o.c.: 43).

Open savanna woodland or grassland; slope with stone blocks; from ? to 1200 m alt.

Near *C. margaritaceus* but: – glumes less closely overlapping, maximum 13 along each side, 6−7 mm long (a specimen from Ghana has 25 glumes).

The presence of this species is uncertain in Mali: Fl. W. Trop. Afr., ed. 2, 1: 292, 1972, cites 2 specimens from Mali, Bamako to Ouagadougou, viz. Adam 15234 and 15237. As a matter of fact, specimen Adam 15234 was collected at Banfora (Burkina Faso) and 15237 probably so, too.

Kükenthal in Engler, Pflanzenreich IV. 20/101: 285, 1936, cites 3 Peter specimens (37172, 36322, 36329b) from Tanzania, which were not seen for the Flora of Tropical E. Africa, Cyperaceae, treatment. The presence of this species in E. Africa is uncertain, if not doubtful.

C. kasamensis Podlech; Mitt. Bot. Staatssamml. München 4: 108−109, 1961; Lock in Kew Bull. 70/4: § 46: 3, 2015 (Robinson collections).

Herb with a creeping thick woody rhizome; culms 30−40 cm tall, somewhat terete, leaf-less, basal part with 2−3 brownish sheaths enlarged at mouth; blades very short; inflorescence bracts 2−3, much shorter than the anthela; inflorescence a compound anthela, primary branches 4−15, unequal, 0,5−2,5 cm long, with 1−3 digitate clusters of spikelets, these linear, 3−10 mm long, *1 mm wide*, flattened, 8−20-flowered, glumes very short (1,5 mm long).

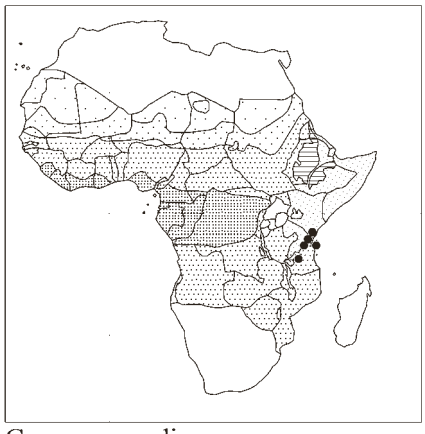
Ecology not recorded.

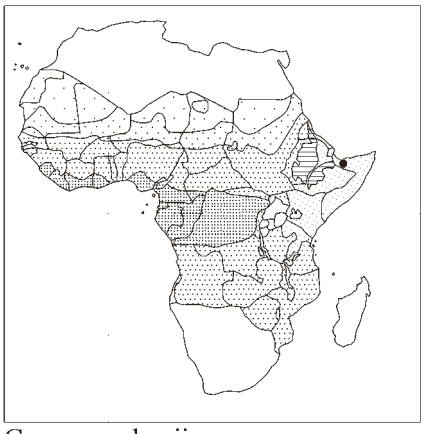
"A conspicuous species that can only be compared with *C. marginatus* Thunb." from which it differs by its smaller spikelets (not 2−3 mm wide), shorter glumes (not 2 mm), and very short and smooth inflorescence bracts (not scabrid).

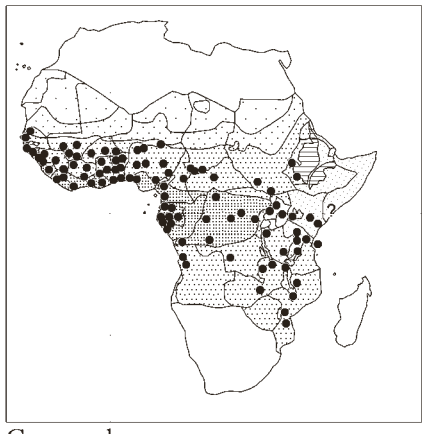
Known only from the type (Robinson 4021) collected in 1960.

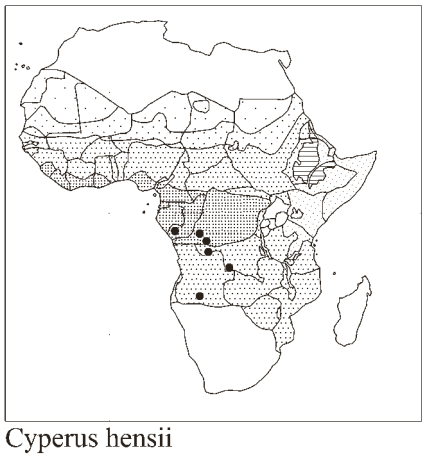
C. kernii (Raymond) Bauters – See below under **Lipocarpha kernii** (Raymond) Goetgh.

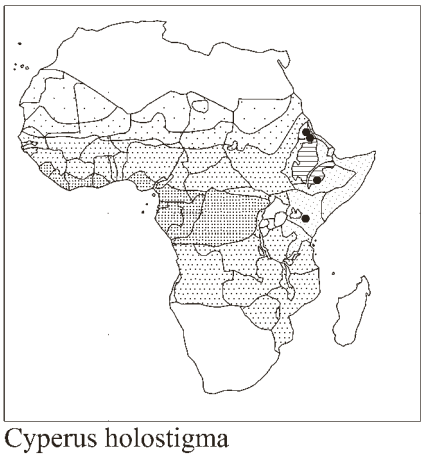
C. kerstenii Boeckeler – See below under **Mariscus kerstenii** (Boeckeler) C. B. Clarke

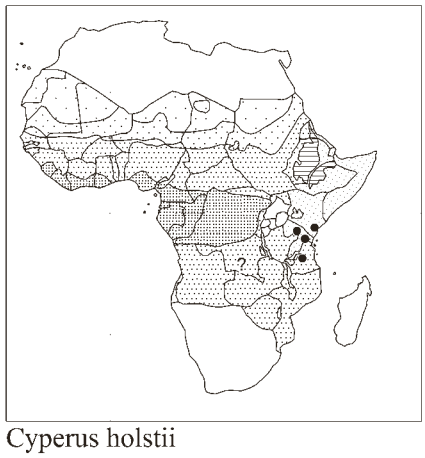

Cyperus grandis

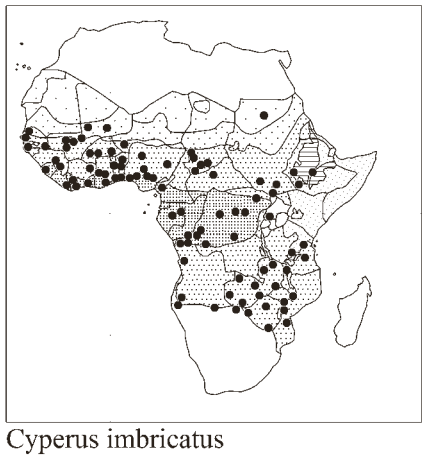

Cyperus gubanii

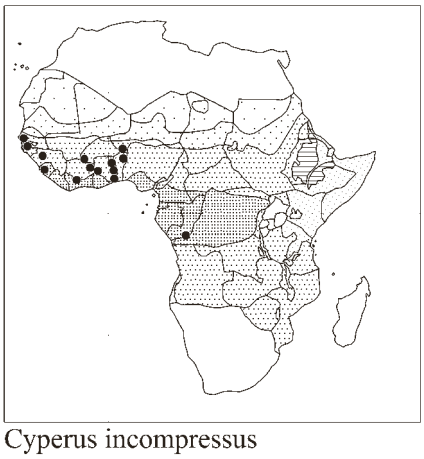

Cyperus haspan

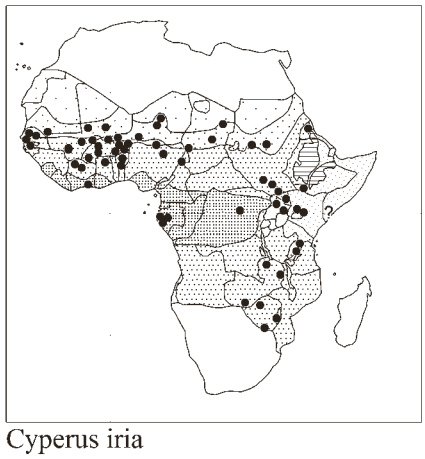

Cyperus hensii

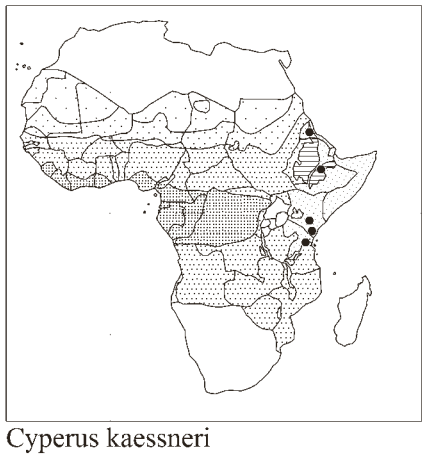

Cyperus holostigma

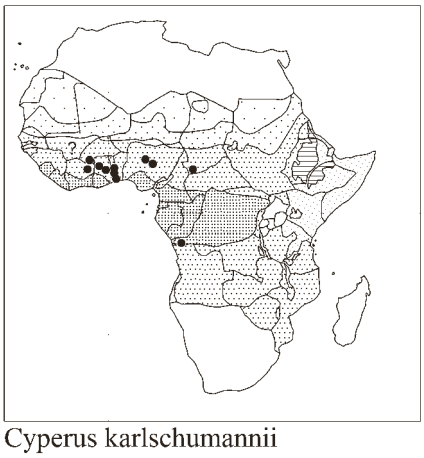

Cyperus holstii

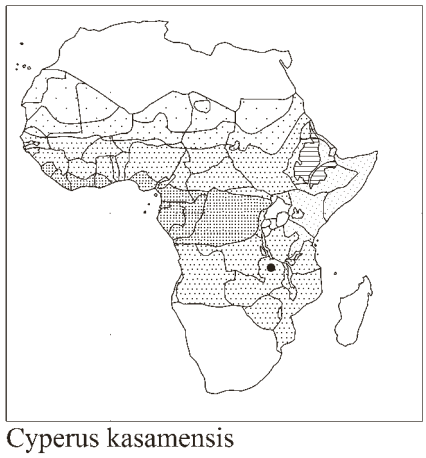

Cyperus imbricatus


Cyperus incompressus


Cyperus iria


Cyperus kaessneri


Cyperus karlschumannii


Cyperus kasamensis

(**C. kerstingii** Engl.) in Engler & Drude, Vegetation der Erde 9, Pflanzenwelt Afrikas (Engler): 204, 1908; Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015.

A plant "only 8−10 cm tall forming dense mats".

Occurs in Djur, Sudan.

Not cited by Kükenthal in Engler, Pflanzenreich IV. 20/101, 1935−1936.

A nomen subnudum, figuring in World Checklist of Selected Plant Families, Cyperaceae, as an "unplaced name".

C. kibweanus P. A. Duvign.; Pl. Ecol. Evol. 143: 9, 2010. – Icon.: Malaisse & al., Copper-cobalt flora of Upper Katanga and Copperbelt: 327, 2016.

Perennial bulbous herb 10−35 cm tall; *bulbs* blackish, not shiny, *1−2 cm long and wide*, in a row; leaves linear, 5−15 mm long, 0,5 mm wide, glaucous; culms trigonous, c. 0,5 mm ∅; inflorescence subcapitate, subtended by 2 filiform bracts 0,5−2 cm long; spikelets 2−4, 7−15 mm long, 5 mm wide, flattened, *dark yellow* or orange, 7−13-flowered; glumes 4 mm long, 2−3 mm wide, with numerous longitudinal clefts.

Open forest; grassland; copper steppe savanna; superficial rocky, lateritic or clayey compact soils; steppe rich in *Gladiolus* on a cupriferous hillslope; cupriferous soils with 10.000 ppm copper where the plant is appearant.

Related to *C. margaritaceus* Vahl.

C. kilianii (Muasya & D. A. Simpson) Lye – See below under **Kyllinga kilianii** Muasya & D. A. Simpson

C. kilimandscharicus Kük., incl. var. *chlorolepis* Peter & Kük.; Fl. Trop. E. Afr., Cyper.: 250−251, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 185, 1983; Fl. Eth. & Eritrea 6: 448, 1997.

Perennial herb to 95 cm tall, with a thick creeping woody *nodular rhizome*, covered by fibrous remains of old scales; culms tufted, 15−72 cm long, 2−3 mm ∅, trigonous, base *swollen*, almost corm-like; leaves to 62 cm long; sheath green to pale brown, 3,5−10 cm long; blade linear, flat, 14−52 cm long, 3−4,7 mm wide; inflorescence *dark, almost black*, a compound anthela, primary branches *4−7, 0−6* cm long; spikelets in loose, distant spikes, sessile and at end of primary branches, 3−21 per spike, ± linear 4,5−17 mm long.

Seasonally wet grassland; open forest; stream banks; swamps; seasonal pools; black cotton soil; 1100−3300 m alt.

According to Fl. Ethiopia, l.c., the specimens examined from that flora area are without mature achenes, and the identifications were provisional.

C. kipasensis Cherm., Rev. Zool. Bot. Africaines 24, 297, 1934, and Bull. Jard. Bot. Etat Bruxelles 13: 281−282, 1935; Podlech in Mitt. Bot. Staatssamml. München 4: 109, 1961; Figueiredo & Smith, Pl. Angola: 179, 2008. – The figs. 323−324 in Haines & Lye, Sedges & rushes E. Afr. p. 170, 1983, represent *C. haspan*.

syn.: *C. platycaulis* Baker var. *kipasensis* (Cherm.) Kük. !

Perennial herb with woody creeping slender rhizome 1−2 mm ∅; culms 15−60 cm long, 1,5 mm ∅, slightly 3-angled, not bulbous at base; leaves shorter than or as long as culms, 2−3,5 mm wide; sheaths dark purple; anthela compound, dense, small, 1,5−4 cm ∅, primary branches 3−8, unequal, 0−2 cm long, suberect; secondary branches spreading, 0−0,5 cm long; fascicles each with 7−12 spikelets, these linear, 3−7 mm long, 16−20-flowered.

Ecology not recorded.

Near *C. platycaulis*, *C. haspan*, *C. hensii*.

Not in Tanzania (= *C. haspan*).

C. kirkii C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 175−176, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 259, 1983.

syn.: *C. ducis* Buscal. & Muschler; *C. amabilis* sensu Graebner in Bot. Jahrb. Syst. 53: 369, 1915, non Vahl (cf. Engler, Pflanzenreich IV. 20/101: 305, 1936).

Perennial tussocky herb with base slightly swollen and covered with some fibrous dark remains of old leaf sheaths, to 21 cm tall; culms tufted, 10−19 cm long, 0,6−0,9 mm ∅, trigonous; leaves to 21 cm long; sheaths brown, 1−3 cm long; blades linear, 6−18 cm long, 0,6−1 mm wide; inflorescence capitate, spikelets 4−15 per head, ± lanceolate, 7−15 mm long.

Shallow peaty soils in rock crevices; rocky outcrops; 300−900 m alt.

Related to *C. tanganyicanus*, also similar to *C. boreobellus*.

C. kituiensis Muasya; Samara 6: 2, 2004; Fl. Trop. E. Afr., Cyper.: 218, 2010. – Icon.: Kew Bull. 59: 248−249, 2004.

Annual to short-lived perennial herb to 1,2 m tall; culms few, 0,48−1,18 m long, 0,2−0,6 cm ∅, trigonous; leaves to 56 cm long; sheath 17,4−26 cm long, pale to mid-brown; blade linear, 23−36 cm long, 0,5−0,8 cm wide, flat; inflorescence a lax, compound anthela; primary branches 7, 5,6−15,5 cm long, secondary branches 2−3,2 cm long; spikelets in loose clusters at end of primary and secondary branches, 5−25 per cluster, linear, flattened, 10−32 mm long, spreading during maturation.

Seasonally moist grassland; roadside ditch; 400−700 m alt.

Near *C. kwaleensis*. Easy to recognise due to its nutlet structure: the *nutlet surface* has *prominent ridges* reminiscent of that of *Hypolytrum* or *Mapania*. This is the first time such a feature has been observed in *Cyperus*.

Occurs in a small area in SE Kenya, i.e. it is vulnerable.

C. koyaliensis Cherm.; Lowe & Stanfield, Fl. Nigeria: sedges: 43, 1974; Lisowski, Fl. Rép. Guinée 1: 396, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Mesterházy in Lidia 7/5: 103, 2012. – Icon.: Amer. J. Bot. 39, 380, 1952; Raynal in Adansonia, Sér 2, 6: 391, 1966; Velayos & al., Fl. Guinea Ecuat. 11: 349, 2014.

syn.: *C. immanis* Nelmes; *C. papyrus* sensu auctt.: A. Chevalier, Explor. Bot. Afr. Occid. Franç.: 693, 1920, p.p. quoad specim. Chevalier 20553, 21520; Kükenthal in Engler, Pflanzenreich IV. 20/101: 47, 1935, p. min. p. quoad cit. Dahomey, Côte d'Ivoire pro patria, non L.

Perennial "Papyrus-like" herb, tufted with short rhizome, to 2 m tall; culms fleshy, 0,6−1,5 m long, 5−7 mm ∅ (at apex), ± 3-angled, angles blunt, not bulbous at base; leaves usually longer than flowering stems, 1,5−2 cm wide, flat; sheaths straw-coloured to dark brown; inflorenscence a compound anthela 20−25 cm ∅, with 10−12 primary erect branches, often equal, to 20−35 cm long, 2−3,5 mm ∅, drooping; secondary branches up to 20 cm long subtended by bracts c. 10 cm long; tertiary branches (if present) short, thread-like; secondary and tertiary branches bearing clusters of fastigiate spikelets at apex of each branch, slender, 0,5−2 cm long, c. 1 mm wide; glumes golden-brown.

Swamps, wet marshy places; humid depression with *Panicum repens*; (200−)580−1250 m alt.

Bioko/Fernando Poo.

The four species *C. elephantinus* (C. B. Clarke) C. B. Clarke from S. Africa, *C. prolixus* Kunth from C. & S. America, *C. koyaliensis* Cherm. from W & WC tropical Africa, and *C. ankaratrensis* Cherm. from C Madagascar, are very close, and with a remarkable disjunction (map in Adansonia, Sér. 2, 6: 388, 1966; also with key and figs.). – There is a note by Hooper in Fl. W. Trop. Afr., ed. 2, 3/2: 288, 1972, on a specimen from Ivory Coast (de Wit 971); it has spikelets 2,5 mm wide and mucronate glumes 3 mm long and seems close to the S. American *C. prolixus*: "it may be introduced".

C. kwaleensis Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 246, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 186, 1983; Nord. J. Bot. 3: 221, 1983.

Perennial, tussocky herb with short woody rhizome; culms tufted, 35−50 cm long, 1,5−2,5 mm ∅, trigonous; leaves many from base; sheath pale reddish brown; blade linear, stiff, 20−40 cm long, 1−5 mm wide; inflorescence a simple to compound anthela 8−15 cm ∅, with 1−2 (sub-) sessile spikes and 5−7 stalked spikes on stalks 2−12 cm long and consisting of 12−22 spikelets in loose clusters, at end of primary and secondary branches; spikelets linear, 1−2,5 cm long.

Shallow sandy soil over outcropping rocks; c. 360 m alt.

Similar to *C. rotundus* but without stolons.

Known only from the type collected in 1953.

C. kyllingiella Larridon – See below under **Kyllingiella microcephala** (Steud.) R. W. Haines & Lye

C. kyllingiformis Lye ("kyllingaeformis"); – See below under **Mariscus kitaleensis** J.-P. Lebrun & Stork

C. laevigatus L.

syn.: *Pycreus laevigatus* (L.) Nees; *Juncellus laevigatus* (L.) C. B. Clarke; *Chlorocyperus laevigatus* (L.) Palla; *Acorellus laevigatus* (L.) Palla

– Subsp. **laevigatus**, incl. var. *albidus* Vahl, subsp. *albidus* (Vahl) Maire & Weiller, fa. *atratus* Peter ex Kük., var. *caespitosus* C. B. Clarke, fa. *macra* C. B. Clarke, var. *pallae* (Kneuck.) Kük., var. *ramlehensis* Sickenb., var. *pictus* Boeckeler, fa. *reptans* (Boeckeler) C. B. Clarke, var. *reptans* (Boeckeler) Kük., var. *subaphyllus* (Boeckeler ex Schinz) Kük., and var. *viridulus* (Boeckeler) C. B. Clarke; Thulin, Fl. Somalia 4: 132, 1995; Wood, Handbook Yemen flora: 324, 326, 1997; Clarke & Mannheimer, Cyper. Namibia: 70, 1999 (map); Simpson & Inglis in Kew Bull. 56: 297, 2001; Naczi & Ford, Sedges: uses…: 45, 85, 2008; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 116−117, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015 (2 subspp.). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: fig. 5/E, H p. 37, 1935; Haines & Lye, Sedges & rushes E. Afr.: 265, 1983; Fl. Libya 120: fig. 5, 1985; Berhaut, Fl. ill. Sénégal 9: 195, 1988; Gordon-Gray, Cyper. Natal: 60, 52 (nutlet), 1995; Fl. Eth. & Eritrea 6: 392, 459, 1997; Boulos, Fl. Egypt 4: 394, 2005; Fl. Trop. E. Afr., Cyper.: 154, 2010; Abdel Bary, Fl. Qatar 2, Monocot.: 46−47, 2012.

syn.: *C. laevigatus* var. *albidus* Vahl, and subsp. *albidus* (Vahl) Maire & Weiller, and var. *subaphyllus* (Boeckeler ex Schinz) Kük. (bas.: *C. subaphyllus* Boeckeler ex Schinz); *C. laevigatus* var. *ramlehensis* Sickenb., and fa. *atratus* Peter ex Kük; *C. lateralis* Forssk.; ? *C. junciformis* Desf.; ? *C. mucronatus* Rottb.; *Juncellus laevigatus* (L.) C. B. Clarke; *J. lateralis* (Forssk.) M. R. Almeida; *Acorellus laevigatus* (L.) Palla; *A. distachyos* (All.) Palla × *A. laevigatus* (L.) Palla; *Pycreus lateralis* (Forssk.) Nees; ? *Chlorocyperus junciformis* (Desf.) Rikli; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb to c. 1 m tall; rhizome long, creeping, to > 30 cm long, 1−5 mm ∅, pale brown to purple-black; culms tufted, crowded, or spaced, in rows, 3−95 cm long, 0,5−4,4 mm ∅, rounded to trigonous, sometimes triquetrous, base covered with short scales; leaves to 16 cm long; sheath pale to dark purple brown, 1,5−14 cm long; blade sometimes absent or when present linear, inrolled, culm-like, 2,2−6,5 cm long, 0,5−2 mm wide; inflorescence appears lateral, capitate, with 1−24 spikelets per head, loosely crowded, *white*, ± lanceolate, 5−25 mm long; involucral bract 1, leaf-like, upright.

(Salt-)lake shores; streambanks, in (temporary) pools and flood areas; near hot springs; often forming dense mats, or vast stands; hollows in coastal dunes; margins of brackish pools; immerged rocks; seepage zones; weed in aquatic biotopes; 0−2800 m alt.

– Subsp. **distachyos** (All.) Ball; Boulos, Fl. Egypt 4: 394, 2005.

bas.: *C. distachyos* All.

syn.: *C. laevigatus* var. *distachyos* (All.) Coss. & Durieu; *Acorellus distachyos* (All.) Palla; *A. laevigatus* subsp. *distachyos* (All.) Holub; *Juncellus distachyos* (All.) Turrill; *J. laevigatus* subsp. *distachyos* (All.) P. H. Davis – According to Boulos, l.c., synonyms are: *Cyperus junciformis* Cav. 1795 !; ? *C. laevigatus* var. *pictus* Boeckeler; ? *Chlorocyperus junciformis* (Cav.) Rikli

The morphological differences between the 2 subspp. are:

– subsp. **distachyos**: spikelets slightly compressed (± compressed in cross-section); glumes not closely imbricate, ovate, usually dark coloured; glumes with incurved apicula;

– subsp. **laevigatus**: spikelets terete; glumes closely imbricate, broadly ovate, usually pale; glumes with often incurved apicula.

Geographical distribution areas:

– subsp. **distachyos**: Madeira, Tenerife, Mediterranean region (N Italy, Po riverbeds widespread and expanding, fide Webbia 72: 129, 2017), Cyprus, Sinai, W Asia from Turkey to C Asia (syn.: *Juncellus calananthus* Peter), India, S. Australia, Mexico, Ecuador; – S Europe, N Africa, Mauritania, West Sahara, Sudan;

– subsp. **laevigatus**: Macaronesia, Mediterranean area, Sinai, Palestine, W Asia from Turkey through to India, Polynesia, Australia, Hawaii, S N. America, C. & S. America. – In Africa subsp. **laevigatus** is recorded from N Africa from Morocco to Egypt; Cape Verde Islands (Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 23, 2002); Namibia, S. Africa, Botswana, Swaziland, Lesotho; Madagascar, Mauritius. – Pantropical.

Not in Jebel Uweinat (fide Léonard in Bull. Jard. Bot. Natl. Belg. 66: 275−276, 1997).

A very variable species (with many synonyms and many varieties described). "Reduction of all inflorescences on a plant, each to a solitary, more or less erect spikelet… is frequent in tropical Africa. Such reduction alters the overall facies of the species quite markedly" (Gordon-Gray, o.c.: 59, 1995).

Plant confused with *Pycreus* species, but nutlet morphology and position different.

C. lanceolatus Poir. – See below under **Pycreus lanceolatus** (Poir.) C. B. Clarke

C. lateriticus J. Raynal; Berhaut, Fl. ill. Sénégal 9: 195, 1988; Lisowski, Fl. Rép. Guinée 1: 396, 2009. – Icon.: Adansonia, Sér. 2, 6: 307, 1966.

Perennial herb 10−12 cm tall with a short rhizome; culms slender, 0,6 mm ∅, trigonous, base bulbous covered by brownish scales; leaves basal, filiform, 5−9 cm long, 0,3 mm wide; inflorescence a pseudolateral cluster of 5−10 sessile spikelets, recurved towards the top as in *C. laevigatus*, each 15−40-flowered, 7−17 mm long; glumes much imbricate, 2,2 mm long; involucral bracts 2, 4−6 cm long, much overtopping the inflorescence. – Similar to *C. meeboldii*, of similar size and habit, but inflorescence different (key to the species in Adansonia, l.c.).

Lateritic pool, edge of temporary water, bowé.

C. latifolius Poir., incl. var. *angustifolius* C. Krauss, var. *austroafricanus* Kük., var. *fimbristyloides* Kük., and var. *herana* (Cherm.) Cherm.; but excluding var. *solidifolius* (Boeckeler) Cherm. (= *C. solidifolius* Boeckeler, Madagascar); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 618, 1985; Gordon-Gray, Cyper. Natal: 57, 61, 1995; Simpson & Inglis in Kew Bull. 56: 297, 2001; Akoègninou & al., Fl. analyt. Bénin: 94, 2006; Fl. Trop. E. Afr., Cyper.: 233−234, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 89, 1935; Haines & Lye, Sedges & rushes E. Afr.: 182, 1983; Fl. Eth. & Eritrea 6: 446, 1997; Fl. Mascareignes 202, Cyper.: 40, 2018.

syn.: *C. labiatus* Peter 1928 (fide Kükenthal in Engler, Pflanzenreich, o.c.: 87); *C. herana* Cherm.

Perennial caespitose herb 0,5−3 m tall, with hardened base producing 1−3 mm thick stolons covered with blackish scales; culms few, triquetrous; leaves to 2,7 m long; sheath green to reddish-brown, 8−20 cm long; blade linear, 0,53−2,56 m long, 0,9−2,8 cm wide; inflorescence a compound anthela, primary branches 6−9, 2,5−23 cm long; spikelets in loose clusters, spreading and rather distantly placed, sessile and at end of primary and secondary branches, 5−20 per cluster; spikelets linear, 7−30 mm long.

Swamps; marshes; boggy or wet grasslands; roadsides; ditches; along streams; inundated soils; lake sides; rice fields; wooded savanna; drier sides of *Cyperus papyrus* swamps; also a weed in pastures; 0−2450 m alt.

S. Africa, Botswana, Swaziland; Comoros, Mauritius, Madagascar, Réunion; Palestine.

Culms used for thatching.

C. laxespicatus Kük. – See below under **Pycreus laxespicatus** (Kük.) Hoenselaar

C. laxus Lam. 1791, non Willemet 1796, nec Vahl 1805, non R. Br. 1814 (= *C. bulbosus*), nec Grisebach 1864; Raynal in Adansonia Sér. 2, 17: 277, 1977; Lisowski, Fl. Rép. Guinée 1: 396, 2009; Fl. Trop. E. Afr., Cyper.: 201−202, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Mesterházy in Lidia 7/5: 105, 2012; Marshall & Hawthorne, Checklist N Nimba Co., Liberia: 431, 2013; Velayos & al., Fl. Guiné Ecuat. 11: 102, 2014 (subsp. *buchholzii*); Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015 (idem). – Icon.: Lorougnon, Les Cypér. forest. Côte d'Ivoire, Mém. ORSTOM 58: 49, 1972 (as *C. diffusus*); Haines & Lye, Sedges & rushes E. Afr.: 163, 1983 (subsp. *buchholzii*); Berhaut, Fl. ill. Sénégal 9: 197, 1988 (idem); Fl. Gabon 44, Cyper.: 103, 2012 (idem).

Perennial herb to 1,2 m tall, with short woody rhizome; culms tufted, 0,2−1,13 m long, 1,1−4 mm ∅, trigonous to triquetrous; leaf sheath reddish-brown to purple, 4−9 cm long; blade linear, flat, 25−53 cm long, 0,3−1,3 cm wide; inflorescence simple to compound, primary branches 6−10, 2−7 cm long; spikelets in small digitate clusters at end of primary, secondary and sometimes tertiary branches, 3−5 per cluster; spikelets 4−6 mm long.

Forest, forest gallery; secondary vegetation; stream banks; glades; gallery in savanna; path sides and other openings in forest; on wet stones close to waterfalls; steep and rocky places with leaching water; herbaceous fringes of inselbergs, transition between *Loudetiopsio glabratae – Virectarietum belinganae*, etc. (Parmentier, Phytocoenologia 36: 575, 2006); 0−2400 m alt.

"Not uncommonly proliferous, the achenes being replaced by green shoots giving the inflorescence a witches'-broom appearance" (Fl. W. Trop. Afr., ed. 2: 3/2: 289, 1972, as *C. diffusus* subsp. *buchholzii*).

Bioko/Fernando Poo; possibly in Rwanda and Senegal.

Comprises 3 subspp.: – subsp. **laxus**; syn. *C. diffusus* Vahl (Mexico, Cuba S to Paraguay – Bolivia; SE Asia, with subsp. *macrostachyus* (Boeckeler) V. P. Prasad & N. P. Singh, Sedges of Karnataka (India), J. Econ. Taxon. Bot., Add. Ser. 21: 104−106, 2002; – subsp. **buchholzii** (Boeckeler) Lye [bas.: *C. buchholzii* Boeckeler; syn.: *C. diffusus* Vahl 1805 subsp. *buchholzii* (Boeckeler) Kük.; *Torulinium angolense* Turrill], a smaller plant with culms 28−49 cm long, 1,1−2,4 mm ∅; leaves 23−31 cm long, 3,2−8 mm wide; glumes 1−1,4 mm long; widespread in Africa; – subsp. **sylvestris** (Ridl.) Lye [bas.: *Cyperus sylvestris* Ridl.; syn.: *C. diffusus* subsp. *sylvestris* (Ridl.) Kük.], larger, with culms 0,5−1,13 m long, 2,8−4 mm ∅; leaves 36−53 cm long, 9−13 mm wide; glumes 1,9−3 mm long; in Uganda, Tanzania, Zimbabwe; occurring in shady forest, open woodland, plantations, on rocky outcrops with thin soil at rather low altitude (450−1850 m).

The concept of *C. laxus* and its subspecies has varied considerably. The World Checklist of Cyperaceae (Govaerts & Simpson: 334−335, 2007) maintains only 2 subspp., viz. subsp. *buchholzii* including, e.g., *C. sylvestris* Ridl., and subsp. *laxus*, a tropical American taxon.

C. leptorhachis Mattf. & Kük. – See below under **Kyllinga debilis** C. B. Clarke

C. leucaspis (J. Raynal) Bauters – See below under **Lipocarpha leucaspis** J. Raynal

(***C. leucocephalus*** Retz. 1788, non Hassk. 1848) – Cited in Fl. Trop. E. Afr., Cyper.: 252, 2010, under "Species with inadequate data". – Icon.: Engler, Pflanzenreich IV. 20/101: 279, 1936.

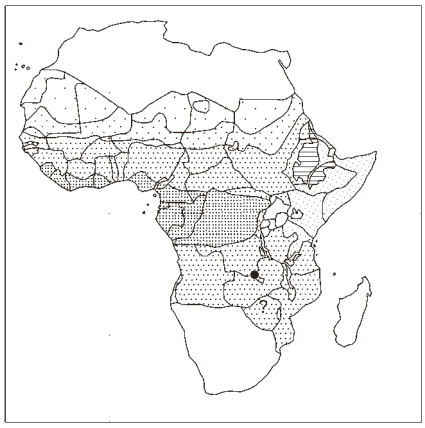
syn.: *Sorostachys leucocephalus* (Retz.) Lye (Nord. J. Bot. 1: 190, 1981); *Scirpus coronarius* Vahl; *Isolepis coronaria* (Vahl) Roem. & Schult.; *Cyperus coronarius* (Vahl) Kunth; *Kyllinga pierreana* E. G. Camus

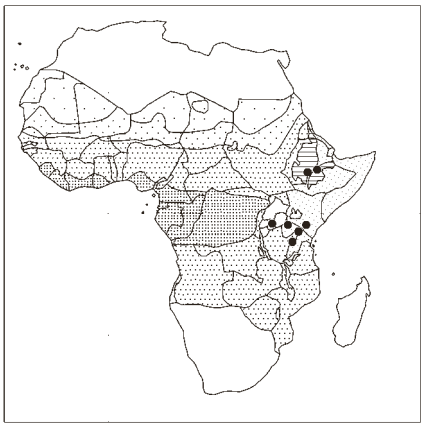
In Fl. W. Trop. Afr., ed. 2, 3/2: 292, 1972, some specimens cited under *C. pulchellus* are those figuring in different floras – flora lists under *C. leucocephalus* Retz. or "non Retz.". Also, Prasad & Singh, Sedges of Karnataka (India), J. Econ. Taxon. Bot., Add. Ser. 21: 119−121, 2002, note: "It seems most of the specimens labelled as *Cyperus leucocephalus* Retz. in some Indian herbaria are actually of *C. pulchellus* R. Br.". – We treat "*C. leucocephalus* Retz. 1788" under **C. pulchellus** below.

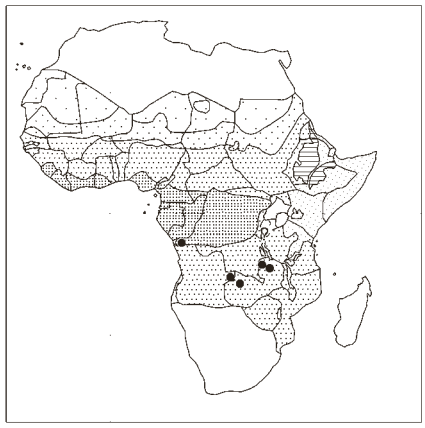
C. *ligularis* L. – See below under **Mariscus ligularis** (L.) Urb.

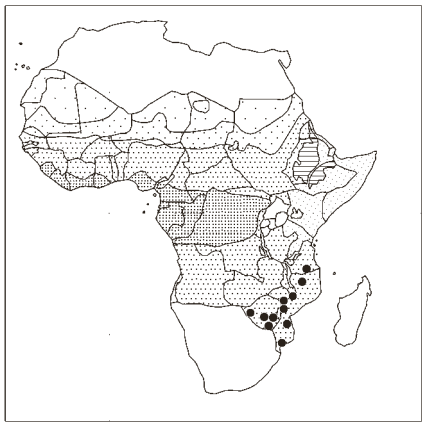
C. lipoater Goetgh. – See below under **Lipocarpha atra** Ridl.

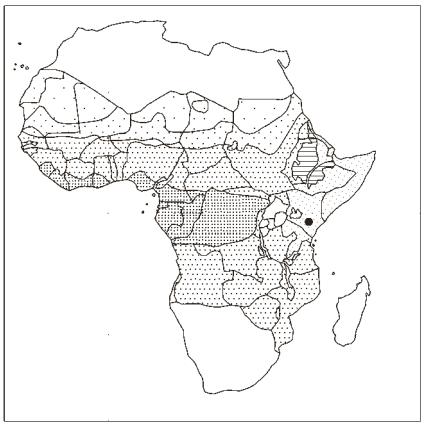
C. lipocarphioides (Kük.) Lye – See above under **Alinula lipocarphioides** (Kük.) J. Raynal

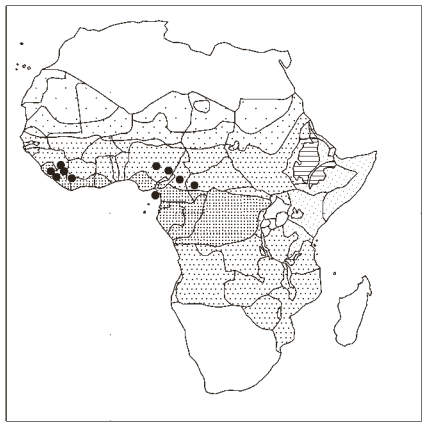

Cyperus kibweanus

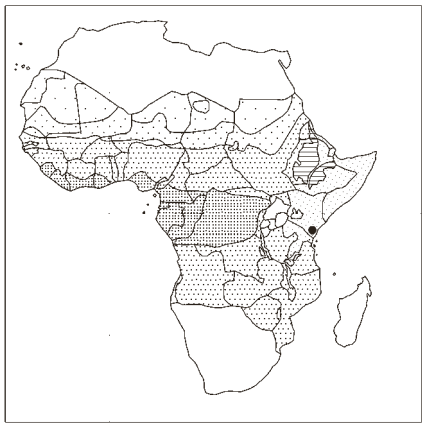

Cyperus kilimandscharicus

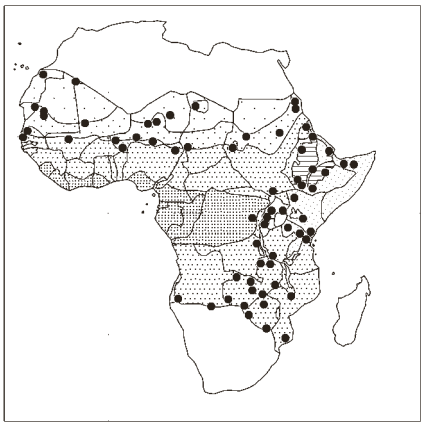

Cyperus kipasensis

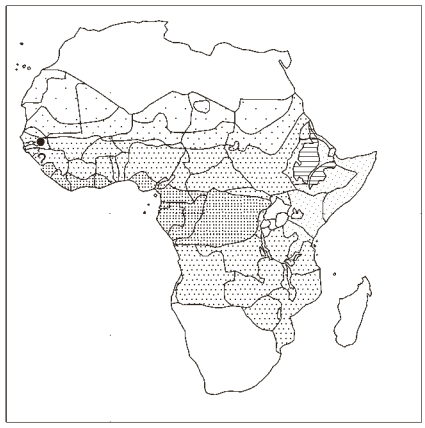

Cyperus kirkii

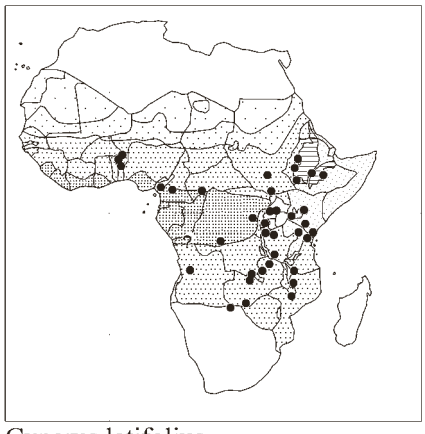

Cyperus kituiensis

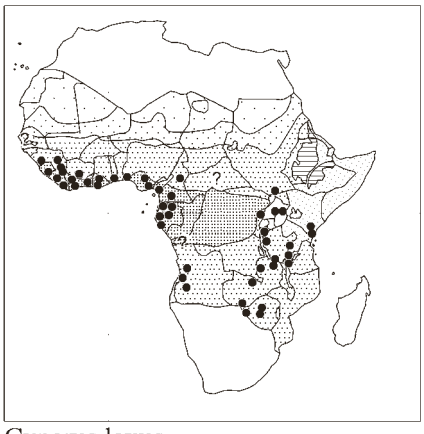

Cyperus koyaliensis

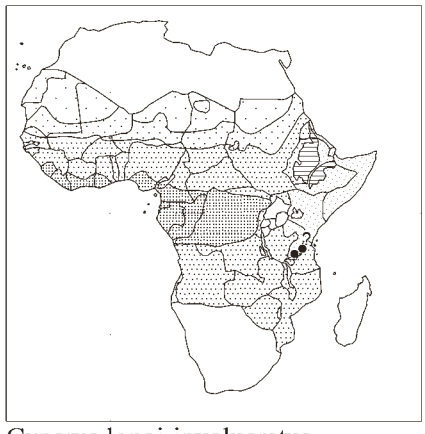

Cyperus kwaleensis


Cyperus laevigatus


Cyperus lateriticus


Cyperus latifolius


Cyperus laxus


Cyperus longi-involucratus

C. lipocomosus Goetgh. – See below under **Lipocarpha comosa** J. Raynal

C. lipofiliformis Goetgh. – See below under **Lipocarpha filiformis** (Vahl) Kunth

C. lipomonostachyus Goetgh. – See below under **Lipocarpha monostachya** R. Gross & Mattf.

C. liporobinsonii Goetgh. – See below under **Lipocarpha robinsonii** J. Raynal

C. lipothermalis Goetgh. – See below under **Lipocarpha thermalis** J. Raynal

(***C. locuples*** C. B. Clarke) – See below under **Cyperus sphacelatus** Rottb.

C. longi-involucratus Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 214−215, 2010. – Icon.: Nord. J. Bot. 3: 221, 1983; Haines & Lye, Sedges & rushes E. Afr.: 208, 1983.

Perennial tussocky herb to 53 cm tall *with narrow cylindric fleshy basal culms*; culms tufted, 12−50 cm long, 0,5−2 mm ∅, trigonous, glabrous; leaves to 36 cm long; sheath pale brown to transparent, 3−12 cm long; blade linear, 8−30 cm long, 1−2 mm wide; inflorescence an open simple anthela, primary branches 1−3, 0,5−2,5 cm long composed of 2−5 rounded reddish brown spikes, more rarely congested to a solitary head < 1 cm ∅ (perhaps only in young specimens); spikes shortly cylindric to ± spherical, 5−6 × 5−7 mm, each spike with c. 10−30 spreading spikelets, these lanceolate, 2,5−3,7 mm long, 0,7−1 mm ∅, few-flowered, falling off entire when mature; *involucral bracts* leaf-like, 3−4, (8,5−)*20−40 cm long*.

Granite slab; rock-crevices; (1050-)1700−2300 m alt.

"Perhaps most similar to *C. amauropus*" (= *Mariscus amauropus*). – Certainly a true **Mariscus** without a valid name in that genus. See at end of **Mariscus** p. 275**.**

C. longispicula Muasya & D. A. Simpson – Icon.: Kew Bull. 59: 597, 2004.

Perennial herb with short rhizome; culms moderately to densely tufted, 18−22 cm long, 0,7−0,9 mm ∅, terete to trigonous, densely covered at base by mid- to dark brown sheath remains; leaf blade linear, 6−20 cm long, 0,4−0,7 mm wide; sheath 2,5−3,5 cm long, mid-brown; inflorescence lax, capitate, 2,5−5 × 4−5,5 cm; *spikelets* 14−18 per inflorescence, linear, *1−2,5 cm long*, flattened.

Peaty soil in rock fissures; shallow soil on rock outcrops; vlei grassland on quartzite sands; 430−500 m alt.

Related to *C. kirkii*.

C. longistolon Peter & Kük. – See below under **Pycreus longistolon** (Peter & Kük.) Napper

C. longus L. 1763, non Boeckeler 1880 (= *C. rotundus*); *excl*. var. *adoensis* (Hochst. ex A. Rich.) Boekeler (= *C. rigidifolius*), var. *maculatus* (Boeckeler) Boeckeler (= *C. maculatus*), var. *pallescens* (Desf.) Coss. & Durand (= *C. corymbosus*), and var. *gracilis* Boeckeler (= *C. mitis* Steud., from Madagascar E-wards to China); but including many varieties (cf. below under synonyms). – Fl. Somalia 4: 121, 1995; Gordon-Gray, Cyper. Natal: 61−63, 1995; Clarke & Mannheimer, Cyper. Namibia: 70, 1999 (map); Archer & Craven, Cyper. Namibia: 21, 2004; Boulos, Fl. Egypt 4: 383−385, 2005 (as *C. rotundus* var. *fenzelianus*, 2005, with fig. glume ± nutlet p. 384); Akoègninou & al., Fl. analyt. Bénin: 93, 2006 (as *C. fenzelianus*); Cafferty & Jarvis in Taxon 53: 179, 2004 (typification); Fl. Trop. E. Afr., Cyper.: 230, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 117, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 99, 1935; Haines & Lye, Sedges & rushes E. Afr.: 180, 1983; Berhaut, Fl. ill. Sénégal 9: 198, 1988; Fl. Eth. & Eritrea 6: 450, 1997; Fl. Pakistan 206, Cyper.: 105, 2001; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 98, 2001; Cook, Aquat. & wetland pl. south. Afr.: 92, 2004; Desfayes in Fl. Mediterr. 14: 182−184, 2004 (*C. badius*, *C. longus*).

syn.: *Eucyperus longus* (L.) Rikli; *Chlorocyperus longus* (L.) Palla; *Pycreus longus* (L.) Hayek (See also under the subspecies below).

Perennial herb with rather *thick* horizontal, often curved, scale-covered stolons; culms few, *slightly swollen* at base 0,2−1,5 m long, 1,9−4 mm ∅, trigonous above, terete below; leaves few, withering early, to 50 cm long; sheath pale to dark reddish-brown, 3−10 cm long; blade flat, 16−40 cm long, 3−5 mm wide; inflorescence a simple to compound anthela; primary branches 4−8, 0,5−10 cm long; spikelets in almost digitate spikes, sessile and at end of primary branches, 3−15 spikelets per spike, linear, 8−25 mm long.

Lake edges; black cotton soils; ditches; periodically flooded depressions in grassland or bushland; swamps and temporary pools; clayey zones; sandy pools; rice fields; canal banks; 0−2700 m alt.

Very variable species, often confused with *C. rotundus* (cf. treatment by Boulos, l.c.). "Most plants from Ethiopia are intermediate between *C. longus* and *C. rotundus*. Only plants with 2−2,5 mm long glumes and a thick rhizome not emitting stolons can be safely ascribed to *C. longus*" (Fl. Eth. & Eritrea, l.c.). – "Most easily identified by long, linear, fairly wide spikelets (11−22 × 1,5−2 mm) numerous and dense on inflorescence rays, softly textured dark glumes that give a 'heavy' handsome look to the inflorescence and scarcely swollen stolons and culm bases" (Gordon-Gray, o.c.: 61). Also very similar to *C. holstii* which differs by its longer peduncles (10−30 cm, vs. 0,5−10 cm), less numerous (6−9, vs. 2−5) and narrower involucral bracts (15−40 × 0,4−0,8 cm, vs. 6−25 × 0,2−0,5 cm).

Widespread in C & S. Europe (Italy, Webbia 72: 129, 2017), Africa (Morocco, Lagascalia 30: 325, 2010), W Asia (Yemen uncertain; Wood, Handbook Yemen flora: 326, 1997); Azores, Madeira, Canary Islands; Cape Verde Islands.

In Asia E as far as E Kazakhstan, Pakistan, NW India. – Uncertain in Togo. – In Africa: Morocco, Algeria, Egypt; Namibia, S. Africa, Botswana, Lesotho, Swaziland; Madagascar. According to Boulos (l.c.) in Egypt, N, NW tropical Africa, Arabia, India; naturalized elsewhere.

Comprises 2 subspp.: – subsp. **badius** (Desf.) Bonnier & Layens [bas.: *C. badius* Desf. 1798, non Steud. 1829 (= *C. congestus*), nec (Willd. ex Kunth) Boeckeler 1870 (= *C. subbadius* Kük., Madagascar); *C. longus* var. *badius* (Desf.) Cambess.; *Chlorocyperus badius* (Desf.) Palla; *Ch. longus* subsp. *badius* (Desf.) Soó; *Pycreus badius* (Desf.) Hayek]; – subsp. **longus** [syn.: *C. tenuiflorus* Rottb. 1773, non Roxb. 1820; *C. longus* var. *tenuiflorus* (Rottb.) Boeckeler; *C. amoenus* Kunth; *C. fenzelianus* Steud.; *C. rotundus* L. var. *fenzelianus* (Steud.) El-Hadidi; *C. longus* var. *pallidus* Boeckeler; *C. fenzelianus* var. *badiiformis* Chiov.; *C. longus* fa. *badiiformis* (Chiov.) Kük.]; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew).

The distinction between the two subspecies is given by Desfayes in Fl. Mediterr. 14: 185, 2004, as follows:

– *C. longus* Plant usually over 100 cm; longest primary inflorescence rays well over 10 cm; number of rays 7 or more

– *C. badius* Plant usually under 70 cm; longest primary inflorescence rays under 10 cm; number of rays 7 or less

C. longus is used as an ornamental in gardens: in ponds, lakes, water gardens (Naczi & Ford, Sedges: uses…: 27, 86, 2008; European Garden Flora, ed. 2, 1: 415, 2011); a hardy specie

C. luteus Boeckeler – See below under **Mariscus luteus** (Boeckeler) C. B. Clarke

C. macranthus Boeckeler – See below under **Pycreus macranthus** (Boeckeler) C. B. Clarke

(**C. macrorrhizus** Nees); Thulin, Fl. Somalia 4: 126, 1995, p.p., excl. specim. Hemming 2380 (= *C. gubanii*). – Icon.: Fl. Iranica 173: pl. 20/4, 1998; Väre & Kukkonen in Ann Bot. Fenn. 42: 482, 2005 (nutlet); Chaudhary, Fl. Kingd. Saudi Arabia ill. 3:103, 2001.

syn.: *C. pungens* Boeckeler, incl. var. *elatus* Boeckeler, var. *multiceps* Boeckeler and var. *tenuis* Boeckeler

Tufted perennial herb 10−70 cm tall; rhizome horizontal, creeping deep in soil, c. 2 mm ∅; culms 1,5−2,5 mm ∅, obtusely trigonous, yellowish; leaves shorter than culms; sheaths to >10 cm long, brown or brownish, "disintegrating into fibres"; blades to > 40 cm long, 1,5−2 mm wide, rigid, curved, apex long attenuate, pungent; inflorescence a globose cluster of spikes, 25−40 mm ∅, or compound with 2−3 primary branches to 5,5 cm long; cluster of spikes composed of 10−22 digitately arranged spikes (ovoid, 8−20 mm long, 3−6 mm ∅).

Coastal plain; near sea-level.

According to Darbyshire & al. (Pl. Sudan & S. Sudan: 107, 2015) "*C.* cf. *macrorrhizus*" in SW Sudan (Schweinfurth 645, April 1868) requires confirmation.

A "poorly circumscribed species" (Väre & Kukkonen, l.c.) near *C. algeriensis* Väre & Kukkonen, o.c.: 481. These authors excluded specimen Hemming 2380 (Fl. Somalia, l.c.) which they described as *C. gubanii* (see under this species above). Boulos (Fl. Egypt 4: 395, 2005) included *C. macrorrhizus* within the more widespread *C. capitatus*. This was already done by Kükenthal (Engler, Pflanzenreich IV. 20/101: 267−268, 1936).

Occurring in ? Egypt, ? Arabia, Palestine, Iran.

Remark: The description of the leaf sheaths in Thulin, Fl. Somalia 4: 126, 1995, is contradictory to that of Flora Iranica.

We consider *C. macrorrhizus* a doutful species in Somalia – Sudan.

C. macrostachyos Lam. – See below under **Pycreus macrostachyos** (Lam.) J. Raynal

C. maculatus Boeckeler, incl. var. *contractus* Cherm.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 618−619, 1985; Thulin, Fl. Somalia 4: 122, 1995; Clarke & Mannheimer, Cyper. Namibia: 70, 1999 (map); Simpson & Inglis in Kew Bull. 56: 299−300, 2001; Archer & Craven, Cyper. Namibia: 21, 2004; Akoègninou & al., Fl. analyt. Bénin: 94, 2006; Steentoft, Flow. pl. W. Africa: 317−318, 2008; Lisowski, Fl. Rép. Guinée 1: 396−397, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Fl. Trop. E. Afr., Cyper.: 230−231, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 117, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015. – Icon.: Haines & Lye, Sedges & rushes

E. Afr.: 189, 1983; Fl. Eth. & Eritrea 6: 450, 1997; Boulos, Fl. Egypt 4: 387, 2005; Fl. Gabon 44, Cyper.: 59, 2012.

syn.: *C. longus* L. var. *maculatus* (Boeckeler) Boeckeler

Perennial herb with stolons to 15 cm long, or with many densely crowded swollen woody culm-bases (in rock-cracks); culms 10−70 cm long, 0,1−0,3 cm ∅, 3-angled to subterete; leaf blades 4−40 cm long, 0,15−0,5 cm wide, flat; sheaths green to light red-brown; inflorescence an anthela 1−12 cm long, 1−10 cm ∅, consisting of 1 sessile and 1−6 stalked spikes, but usually with 1−5 secondary sessile or stalked spikes from base of the primary spikes; spikes 1−5 cm long, 1−3 cm wide with 3−10 spikelets *sometimes dark-spotted*, linear, 0,8−4 cm long.

Sandy habitats near lakes, pools, rivers; probably also in temporary damp site in dry bushland; humid rocks; rock crevices; 50 (? and less) – 1700 m alt.

Egypt; Namibia, S. Africa, Botswana; Madagascar, Mauritius, Seychelles.

Comprises 2 subspp.: – subsp. **maculatus** [syn.: *C.vulgaris* Hochst. ex Boeckeler 1868, nom. illeg., non Sieber & Kunth 1837 (= *Pycreus flavidus* (Retz.) T. Koyoma, Japan); *C. naumannianus* Boeckeler; *C. maculatus* var. *naumannianus* (Boeckeler) Kük.; *C. galegensis* C. B. Clarke; *C. kamphoeveneri* Boeckeler; *C. heudelotii* C. B. Clarke], with glumes 2,2 mm long, nutlet 1−1,2 mm long, widespread in Africa; – subsp. **ogadensis** Lye, with glumes 3−3,5 mm long, nutlet 1,7−1,8 mm long, in Ethiopia.

Culms used as cooked or uncooked vegetable, famine food; rhizomes edible, also sold in fragrant sachets and perfume, burnt in fires to create a pleasant odour. The foliage is edible to stock and provides much-relished grazing (Burkill, l.c.).

Closely allied to *C. longus*. Beentje (in Fl. Trop. E. Afr., Cyper.: l.c.) "feels varietal status under *C. longus* might be better".

Cyperus maderaspatanus Willd. – See below under **Mariscus maderaspatanus** (Willd.) Napper

C. majungensis Cherm.; Kükenthal in Engler, Pflanzenreich IV. 20/101: 75−76, 1935.

syn.: *C. zollingeri* sensu auct. (specim. Kuntze 202, Mozambique), non Steud. (fide Kükenthal, l.c).

Perennial stoloniferous herb with short horizontal woody rhizome; culms 60−90 cm long, 2−3 mm ∅ (at apex), triangular, scarcely bulbous; upper leaf sheaths 8−15 cm long; blades 5−10 cm long, 2−3 mm wide; inflorescence a lax (simple or) ± compound anthela 10−15 cm ∅, rays 8−10, primary branches unequal, to 10−20 cm long, trigonous; secondary branches sessile or very short; spikes very dense, with 8−15 spikelets; spikelets linear, compressed, 15−30 mm long, 15−25-flowered.

Ecology in Mozambique not recorded. In Madagascar: swamps on humid sand.

Cited by Clarke, Fl. Trop. Afr. 8: 361, 1901, under *C. zollingeri*, Mozamb. Dist. (= Nampula Prov., c. 15°09'S × 39°14'E), Mozambique, Kuntze 202, sine loco.

C. malawicus (J. Raynal) Lye – See above under **Alinula malawica** (J. Raynal) Goetgh. & Vorster

C. mannii C. B. Clarke; Kükenthal in Engler, Pflanzenreich IV. 20/101: 202, 1936 (as *C. baronii* var. *mannii*); Jaeger & Adam, Végét. vascul. Mts Loma 2: 217−218, 1981; Cable & Cheek, Pl. Mt Cameroon: 155, 1998; Chapman & Chapman, Forests Taraba & Adamawa States, Nigeria: c49, 2001; Harvey & al., Pl. Bali Ngemba: 136, 2004; Cheek & al., Pl. Mefou prop. natl.

park Yaoundé, Cameroon: 221, 2011; Velayos & al., Fl. Guinea Ecuat. 11: 97, 2014 (as *C. baronii*). – Icon.: Adam, Fl. descr. Mts Nimba 6: pl. 1043, 1983.

syn.: *C. baronii* C. B. Clarke var. *mannii* (C. B. Clarke) Kük.

Perennial herb 1−1,5−2 m tall, with short rhizome or swollen base; culms leafy tufted, sharply triangular, sides 2−3 mm wide; leaf sheaths reddish at base; blades probably longer than flowering stem, 1−2 cm wide; inflorescence 15−30 cm across, a compound anthela with primary rays 10−15 cm long, secondary 2−5 cm long, tertiary 0,5 cm long; ultimate branches ending in small digitate clusters of brown spikelets, each 3−5 mm long.

Woodland and grassland, beside streams; forest-grassland transition; montane forest; edges of meadows; cracks in rocks; grassy corridors on dolerite escarpments; forest gallery; 500−2200 m alt.

Bioko/Fernando Poo, S. Tomé. Perhaps present in higher part of Gabon (Fl. Gabon 44, Cyper.: 105, 2014).

Cf. above under **C. baronii**.

C. mapanioides C. B. Clarke, incl. var. *major* (Boeckeler) Kük., and fa. *micranthus* (Cherm.) Kük.; Renier, Fl. Kwango 1: 70, 1948 (incl. *C. dichromeniformis*, *C. major*); Lisowski, Fl. Rép. Guinée 1: 397, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Fl. Trop. E. Afr., Cyper.: 167−168, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 107−108, 2015. – Icon.: Lorougnon, Les Cypéracées forest. Côte d'Ivoire: 44, 1972; Haines & Lye, Sedges & rushes E. Afr.: 159−160, 1983; Fl. Gabon 44, Cyper.: 103, 2012.

syn.: *C. dichromeniformis* Kunth var. *major* Boeckeler; *C. major* (Boeckeler) Cherm., incl. var. *micranthus* Cherm.

Perennial leafy herb; rhizome creeping, 1−5 cm long, 2,5−4 mm ∅, covered by (blackish) brown scales; culms 12−54 cm long, 1−4 mm ∅, triquetrous or winged; leaf sheaths reddish-brown to deep purple, 1,5−7 cm long; blades flat, linear, 10−31 cm long, 0,4−1,2 cm wide; inflorescence capitate, a congested, sometimes loosely so, whitish anthela of 10−20 spikelets per head, as young almost hidden among the large bracts (10−20 cm long, 0,4−1 cm wide); spikelets linear-ovoid, 7−12 mm long, 2,5−4 mm wide, 8−25-flowered; glumes whitish, ciliate, keeled.

Shady spongy places; by springs on rocks; in very shady places, and even in caverns; (wet) forest or woodland; often alongside paths; clearings and alongside streams; cultivated land; crops; dry forest; savanna woodland; forest gallery; 100−1800 m alt.

"Looks very similar to *C. chinsalensis* but has more involucral bracts and smaller glumes."

Aromatic herb with "smell of the dry root-stock almost that of *Anthoxanthum*" (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 111, 1899, as *C. dichromeniformis*).

C. maranguensis K. Schum., excl. var. *ferrugineoviridis* C. B. Clarke [= *Mariscus ferrugineoviridis* (C. B. Clarke) Cherm., syn.: *Cyperus ferrugineoviridis* (C. B. Clarke) Kük.]; Simpson & Inglis in Kew Bull. 56: 300, 2001; Fl. Trop. E. Afr., Cyper.: 246−247, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 194−195, 1983; Fl. Eth. & Eritrea 6: 449, 1997.

Perennial herb (sometimes appearing as annual) to 1,25 m tall; culms few, 25−109 cm long, 1,4−4 mm ∅, trigonous, with slightly swollen base from a short woody nodular rhizome; leaf sheath pale brown to greenish, often papery, 3−16 cm long; blade linear, 15−68 cm long, 0,5−1,2 cm wide; inflorescence simple to compound, primary branches 5−8, 2−19 cm long; spikelets in loose clusters on elongated axis, at end of primary and secondary branches, 14−25 per cluster; spikelets linear, 1,2−3,4 cm long.

Grassland; swampy grassland; weed in cultivations; roadsides; open forest; 800−2150 m alt.

C. margaritaceus Vahl, incl. var. *prorepens* Kük. and var. *pseudoniveus* (Boeckeler) C. B. Clarke; but *excl*. var. *karlschumannii* (C. B. Clarke) Kük. (= *C. karlschumannii*), var. *nduru* (Cherm.) Kük. (= *C. nduru*) and var. *tisserantii* (= *C. niveus* var. *tisserantii*); Renier, Fl. Kwango 1: 70, 1948; Gordon-Gray, Cyper. Natal: 63, 1995; Clarke & Mannheimer, Cyper. Namibia: 70, 1999 (map); Simpson & Inglis in Kew Bull. 56: 300, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Akoègninou & al., Fl. analyt. Bénin: 94, 2006; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Fl. Trop. E. Afr., Cyper.: 179−180, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez (Guinée-Bissau): 151, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 77, 2017). – Icon.: Engler, Pflanzenreich IV. 20/101: 279, 1936; Haines & Lye, Sedges & rushes E. Afr.: 257, 1983; Flora 176: 66, 1985; Berhaut, Fl. ill. Sénégal 9: 199, 1988; Fl. Gabon 44, Cyper.: 61, 2012; Malaisse & al., Copper-cobalt flora Upper Katanga & Copperbelt: 328, 2016.

syn.: *C. eburneus* Thonn. ex Kunth; *C. pseudoniveus* Boeckeler

Perennial herb 10−70 cm tall; culms with swollen bulb-like base, 30−68 cm long, 0,8−1,9 cm ∅, trigonous; leaves to 45 cm long; basal sheaths reddish-brown to blackish, covering the base, leaf base on culm pale brown, 2−8 cm long; blade linear, 5−37 cm long, 1,6−3,7 mm wide; inflorescence capitate, 2−4 cm across; spikelets 1−9 per head, *white* and *shining*, ovate, 0,6−2,2 cm long, 0,5−1 cm wide.

± Bare sandy soils, temporarily waterlogged; open woodland; grassland; riverbanks; often on sandy or loamy soil; often rather abundant; meadows; rocky slopes; also on hardpan soils; copper steppe savannas with low copper content; 0−2000 m alt.

Namibia, S. Africa, Botswana, Lesotho, Swaziland.

Used as an ornamental.

Near *C. niveus*.

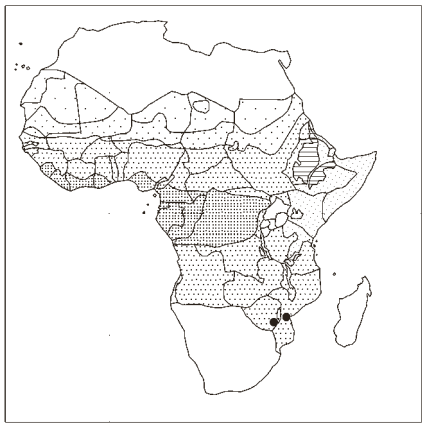
C. marginatus Thunb., incl. var. *blandus* (Kunth) Kük.; Clarke & Mannheimer, Cyper. Namibia: 70, 1999 (map); Fl. Trop. E. Afr., Cyper.: 256, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 264, 1983 (? confusion with *C. conglomeratus*, based on specimen Magogo 1454 from Kenya, Marsabit area, K1, c. 2°20'N × 38°E, a specimen not seen for Fl. Trop. E. Afr.); Gordon-Gray, Cyper. Natal: 62, 1995 (nutlet); S. Afric. J. Bot. 65:375−379, 1999; S. Afric. J. Bot. 75: 168, 2009.

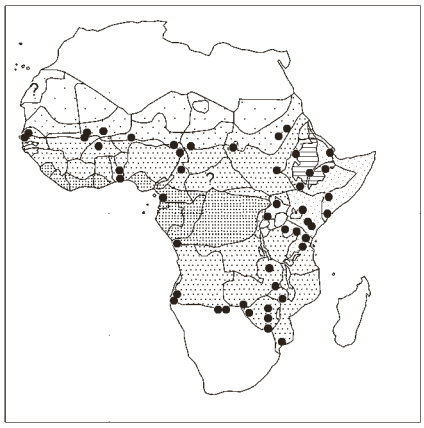
syn.: *C. blandus* Kunth; *C. fonticola* Kunth; *C. prionodes* Steud.; *C. brunneovaginatus* Boeckeler; *Eucyperus brunneovaginatus* (Boeckeler) Rikli

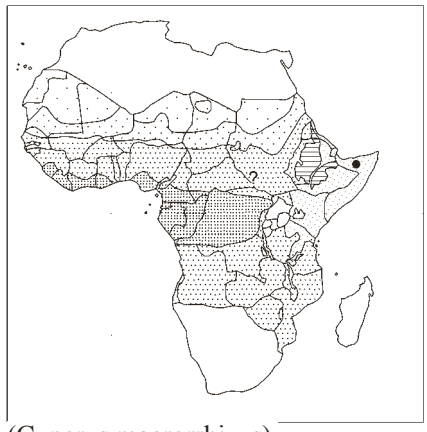
Perennial herb; rhizome horizontal, 5−8 mm ∅; *culms rounded*, 0,3−0,9 m tall, clothed basally in persistant sheaths; top sheaths producing (or not) blades 2,5−5 cm long, hardly green; inflorescence a simple or compound, contracted (sometimes reduced to a head) or branched anthela; spikelets digitately arranged by groups of 2−10 (often some solitary), glossy *red-brown*, flattened, c. 1−2 cm long.

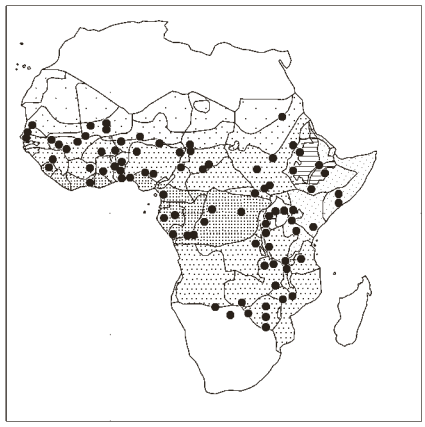
Rather damp sandy maritime places; near river banks; open coastal areas; salt-loving.

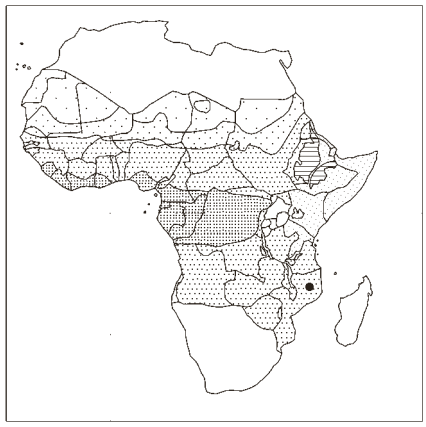
Namibia, S. Africa, Swaziland, Lesotho. – Not in Kenya (perhaps confusion with *C. conglomeratus*).

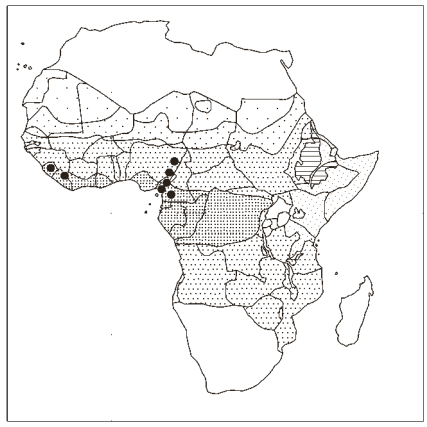

Cyperus longispicula

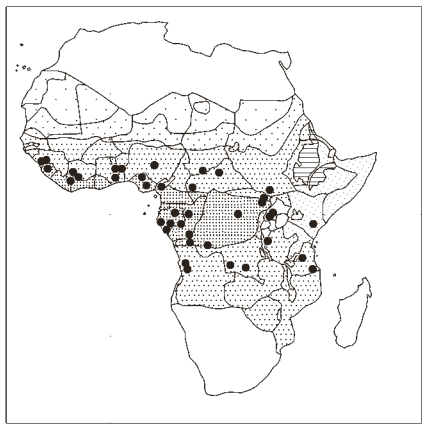

Cyperus longus

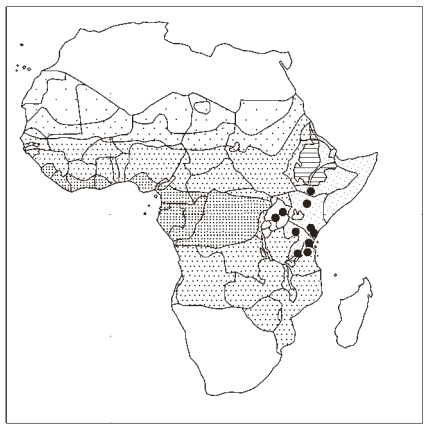

(Cyperus macrorrhizus)

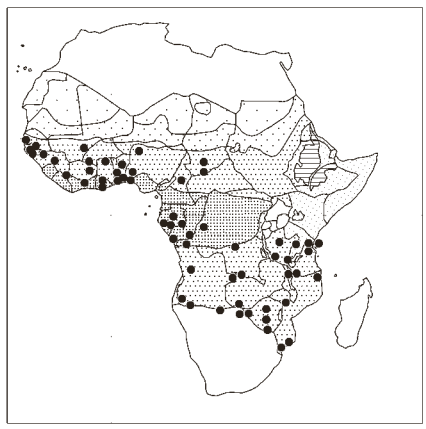

Cyperus maculatus

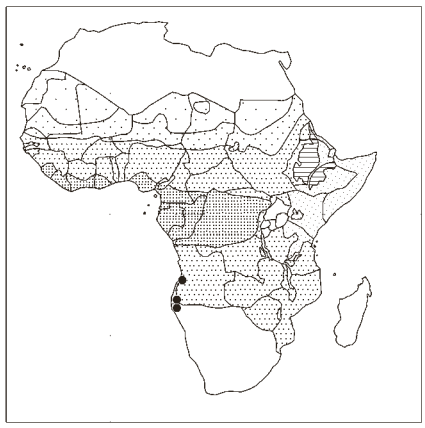

Cyperus majungensis

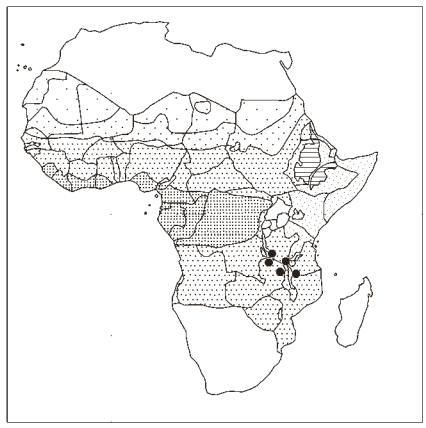

Cyperus mannii

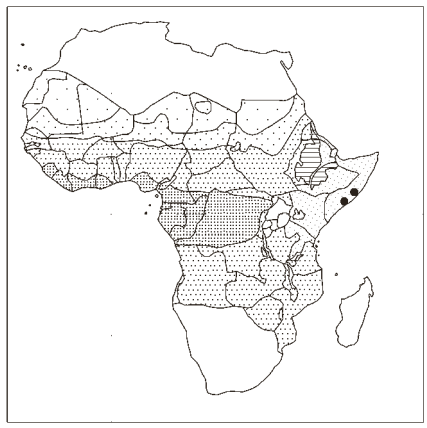

Cyperus mapanioides


Cyperus maranguensis


Cyperus margaritaceus


Cyperus marginatus


Cyperus matagoroensis


Cyperus medusaeus

Known to reproduce by pseudovivipary (Gordon-Gray & al. in S. Afric. J. Bot. 75: 166, 2009).

Cyperus marginatus, a complex of 3 entities (Browning & al., S. Afric. J. Bot. 65: 374−381, 1999, with illustrations of all forms): entity 1 (= sp. sens. str.), with short leaf blade to leaf sheath; entity 2, segregated as var. *blandus*, recorded from Swaziland and Lesotho); entity 3, a dryland plant, described as *C. fonticola*, common in Namibia & Angola.

Welwitsch collected *C. marginatus* in SW-most Angola in swampy places on the sea coast S of the town of Benguella, and on the edges of Riv. Bero (Kükenthal in Engler, Pflanzenreich IV. 20/101: 189, 1936).

C. matagoroensis Muasya & D. A. Simpson; Fl. Trop. E. Afr., Cyper.: 205, 2010. – Icon.: Kew Bull. 59: 594, 2004.

Rhizomatous perennial herb to 55 cm tall with short rhizome; culms moderately to densely tufted, 30−50 cm long, 0,7−0,9 mm ∅, trigonous, densely covered at base by fibrous, dark reddish-brown to blackish leaf sheath remains; blade linear, V-shaped in cross section, 17−30 cm long, 0,5−0,7 mm wide; sheath 1,5−2 cm long, brownish; inflorescence with simple branching, lax, 2,5−3,5 cm long; primary branches 3−4, 0,5−3 cm long; spikelets in digitate clusters, 2−4 per cluster, lanceolate, 8−10 mm long.

Woodland; grassland; dry stream banks; shallow soils overlying rocks; 1410−2100 m alt.

Near *C. nyererei* but with: – narrower leaves (0,5−0,7 mm not 1,3−3); longer inflorescence branches (0,5−3 cm long not 0−3); shorter glumes (2,3−2,7 mm long not 2,7−4); mid-reddish-brown spikelets (not dark reddish-brown with pale brown margins).

(**C. mauretaniensis** Väre & Kukkonen); Nord. J. Bot. 24: 293, 2006 (typification). – Icon.: Ann. Bot. Fennici 42: 480, 2005.

Densely tufted perennial herb 30−60 cm tall forming large tufts with many flowering stems; culms cylindrical to channelled at base, glaucescent; basal leaf sheaths 7 cm long, **soft, light brown**, becoming fibrous; blade to 40 cm long, 1−2 mm wide; inflorescence a **compound anthela** 9 × 7 cm, primary branches 3−5, to 7 cm long; cluster of spikelets spreading with 10−18 spikes; spikelets ovoid, 9−15 mm long.

Dunes near coastal regions and inland.

W Africa from Mauretania – Senegal to Mali, Algeria.

A form of **C. conglomeratus** (and mapped with that species p. 105). Differences: *C. conglomeratus* has basal leaf *sheaths hard and dark reddish*, and *a capitate inflorescence*.

C. mbitheanus (Muasya) Huygh – See below under **Kyllinga mbitheana** Muasya

C. medusaeus Chiov.; Engler, Pflanzenreich IV. 20/101: 272, 1936; Kukkonen & Lye, Ann. Bot. Fennici 33: 21−27, 1996 (redescription); Väre & Kukkonen, Nord. J. Bot. 24: 292, 2006 (typification). – Icon.: Chiovenda, Fl. Somala: pl. 38/2, 1929; Thulin, Fl. Somalia 4: 128, 1995.

Tussocky perennial herb with a prominent woody rhizome, to c. 5 mm ∅; culms solitary or a few together, 5−25 cm long, 0,7−1,5 mm ∅, obtusely angular to somewhat compressed or almost terete; leaves numerous, mostly basal and only 2−3 cm up the stem; blade to 20 cm long but *mostly prominently coiled* up and then often < 3 cm long, 0,5−2 mm wide, very thick; sheath straw-coloured to reddish-brown, margin membranous; inflorescence a terminal head, 0,9−1,3 cm ∅ with numerous crowded sessile spikelets, these ovate, 5−7 mm long, 10−20-flowered.

Sand dunes; coastal grassland; probably < 50 m alt.

The holotype consists of a single non-flowering shoot.

Close to *C. mogadoxensis*.

C. meeboldii Kük., excl. var. *gigas* Berhaut (= *C. clavinux*); Thulin, Fl. Somalia 4: 130, 1995; Prasad & Singh, Sedges Karnataka (India): 109, 2002; Fl. Trop. E. Afr., Cyper.: 176, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015. – Icon.: Adansonia, Sér. 2, 6: 303, 1966; Haines & Lye, Sedges & rushes E. Afr.: 260, 1983; Berhaut, Fl. ill. Sénégal 9: 200, 1988; Fl. Eth. & Eritrea 6: 463, 1997.

syn.: *C. sphaeranthelus* Chiov.; *C. adamii* Raymond

Perennial herb with root system much reduced; culms 4−25 cm long, 0,4−1,3 mm ∅ with swollen base covered by blackish fibres, triangular; leaf blades 3−13 cm long, 0,5−2 mm wide; sheaths grey to light brown, 0,5−2,5 mm long; inflorescence a congested anthela 0,7−2 cm ∅ with 15−60 crowded, sessile spikelets, these linear, 4−10 mm long, 15−30-flowered.

In small, light stands on clayey-siliceous soils, humid in rainy season, not cracked when becoming dry; seasonally wet habitats in grassland or on rocks; clayey soils at edge of temporary water; often in wet sandy soil or mud; clayey-sandy depressions; 30−1600 m alt. – For more details on ecology, See: Adansonia, Sér. 2, 6: 304, 1966.

NW & S India (Hyderabad, Badami). – Probably not in Mali (specimen Duong Huu Thoi not surely localized). According to Darbyshire & al. (l.c.) the Darfur occurrence (Quézel, 1969) needs confirmation.

Closely related to *C. clavinux*.

C. melanacme (Nelmes) Raymond – See below under **Pycreus melanacme** Nelmes

C. melanospermus (Nees) Valck. – See below under **Kyllinga melanosperma** Nees

C. melas Ridl. – See below under **Pycreus melas** (Ridl.) C. B. Clarke

C. metallorum (P. A. Duvign. & G. Léonard) Bauters – See above under **Ascolepis metallorum** P. A. Duvign. & G. Léonard

C. metzii (Hochst. ex Steud.) Mattf. & Kük. – See below under **Kyllinga squamulata** Vahl

C. michelianus (L.) Delile; Thulin, Fl. Somalia 4: 130, 1995 (*C. pygmaeus*); Fl. Pakistan 206, Cyper.: 139−140, 2001 (incl. *C. pygmaeus*); Simpson & Inglis in Kew Bull. 56: 300−301, 2001; Fl. Trop. E. Afr., Cyper.: 156, 2010 (subsp. *pygmaeus*); Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 117, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015 (subsp. *pygmaeus*). – Icon.: Engler, Pflanzenreich IV. 20/101: 313, 1936; Haines & Lye, Sedges & rushes E. Afr.: 262, 1983 (subsp. *pygmaeus*); Berhaut, Fl. ill. Sénégal 9: 201, 1988 (idem); Fl. Eth. & Eritrea 6: 462, 1997 (*C. pygmaeus*); Boulos, Fl. Egypt 4: 389, 2005 (subsp. *pygmaeus*); Fl. China Ill. 23: 303, 2012; Verloove in Webbia 67: 96, 2012; Ghosh & al., o.c.: 124 (*C. pygmaeus*).

bas.: *Scirpus michelianus* L.

syn.: *Isolepis micheliana* (L.) Roem. & Schult.; *Fimbristylis micheliana* (L.) Rchb.; *Dichostylis micheliana* (L.) Nees; *Juncellus michelianus* (L.) Blatt. & McCann; *Cyperus pygmaeus* Rottb. var. *michelianus* (L.) Boeckeler

CYPERUS MICHELIANUS

Tufted annual herb with reddish roots; culms 1−2−28 cm long, 1−1,5 mm ∅, diffuse or long, often bulbously thickened at base; leaves basal with sheaths with purple veins, purple-dotted, the outermost becoming fibrous, 0,7−3 cm long; blade 1−15 cm long, 1−2 mm wide; inflorescence capitate, 0,5−1,7 cm across, of irregular outline, spikes several each with many crowded spikelets; these green, oblong, 2,5−4 mm long, 8−15-flowered; inflorescence surrounded by 4−8 long leafy spreading bracts 3−12 cm long.

Seasonally wet habitats; damp sandy places near pools and in mud; pool margins; clayey, emerged river bank; sometimes abundant (Tibesti, all wadis from Totous to Zouarké); near 0 to 1200 m alt.

Comprises 2 subspp.: – subsp. **michelianus** [syn.: *C. italicus* Rottb., non Tod.; *C. diffusus* Roxb. 1820, nom. illegit, non Vahl 1805 (= *C. laxus*);] See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; – subsp. **pygmaeus** (Rottb.) Asch. & Graebn. [bas.: *C. pygmaeus* Rottb.; syn.: *Dichostylis pygmaea* (Rottb.) Nees; *Pycreus pygmaeus* (Rottb.) Nees; *Juncellus pygmaeus* (Rottb.) C. B. Clarke; *Scirpus occultus* C. B. Clarke; *Cyperus paradoxus* Steud].

Distinction between the 2 subspecies: – subsp. **michelianus** with *spirally arranged glumes*; stamens 1−2; nut 0,8−0,3 mm; – subsp. **pygmaeus** with *distichously arranged glumes*; stamens 1−0; nut 1 × 0,4 mm. – Cf. A. Ghosh & al., Lectotypification of *Cyperus pygmaeus* (Cyperaceae) and notes on its distinctness with *C. michelianus*. *Phytotaxa* 376:123−125 (2018).

Geographic distribution: – subsp. **michelianus**. Canary Islands; Algeria; C & S Europe, E Mediterranean region to Turkey, Caucasus; Asia E to Altai Mts, Middle East, N India, south to Vietnam, Pakistan, disjunct in Iraq; – subsp. **pygmaeus** has a more southern distribution and both subspecies meet in Pakistan & N India: Algeria, Morocco, Egypt; Namibia; Madagascar, Mauritius; Canary Islands (Gran Canaria, Verloove in Webbia 67: 96−97, 2012); from Greece to Turkey, Israel; in Asia: Iraq, Azerbaidjan, Pakistan, Kashmir, India, Sri Lanka E to Taiwan, Philippines, Malesia, Australia. For Italy, See Webbia 72: 129, 2017. See also Raynal in Adansonia, Sér. 2, 6: 586−588, 1966.

C. microaureus Lye – See above under **Alinula peteri** (Kük.) Goetgh. & Vorster

C. microbolbos C. B. Clarke – See below under **Mariscus microbolbos** (C. B. Clarke) Vorster

C. microbracteatus (Lye) Lye – See below under **Kyllinga microbracteata** Lye

C. microbulbosus (Lye) Lye – See below under **Kyllinga microbulbosa** Lye

C. microcristatus Lye – See below under **Kyllinga microcristata** (Lye) J.-P. Lebrun & Stork comb. nov.

C. microglumis D. A. Simpson; Thulin, Fl. Somalia 4: 119, 1995; Fl. Eth. & Eritrea 1: 266, 2009. – Icon.: Kew Bull. 45: 493, 488 (map), 1990.

Perennial slender herb; culms swollen at base and covered by fibrous remains of old leaf sheaths; culms 2−15 cm long, 0,2−0,5 mm ∅, terete to triangular; leaf blades to 10 cm long, 0,4−0,6 mm wide; inflorescence a congested dense anthela 0,4−1 cm ∅, with to 30 spikelets, these linear, 2−6 mm long.

Seasonally wet sandy areas; *Acacia*, *Commiphora* bushland on sand; 160−500 m alt.

CYPERUS MICROGLUMIS

Resembling *C. pulchellus* but glumes smaller (0,7−1 mm long, not 1,3−1,5 mm).

C. micromariscus Lye; Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 157, 2010. – Icon.: Nord. J. Bot. 3: 215, 1983; Haines & Lye, Sedges & rushes E. Afr.: 292, 1983.

Annual herb to 12 cm tall; culms tufted 1−10 cm long, 0,5−1,5 mm ∅, trigonous, smooth; leaves to 12,5 cm long; sheath green to purple, 1−2,7 cm long; blade flat, linear, 2−9,8 cm long, 0,5−2,4 mm wide, margin and primary vein scabrid, particularly near the acuminate apex; inflorescence capitate or a simple anthela, primary branches 0−4, 0,7−1,5 cm long; spikes sessile and at end of primary branches, 0,5−1 cm long, 0,4−0,8 cm wide; spikelets in dense clusters, many per spike, ovoid, 2−3,5 × 1,5−2,2 mm, falling off entire when mature; involucral bracts leafy, 3−9 cm long, similar to the basal leaves and far overtopping the inflorescence.

Weed of ricefield beside tidal creek; near sea-level.

Only known from the type ?, from near Dar-es-Salaam, Tanzania.

Intermediate between *Pycreus* and *Mariscus* (See Nord. J. Bot. 3: 215, 1983).

C. micromedusaeus Lye – See below under **Mariscus micromedusaeus** (Lye) J.-P. Lebrun & Stork comb. nov.

C. micromelas (Lye) Lye – See below under **Pycreus micromelas** Lye

C. micropelophilus Lye – See below under **Pycreus micropelophilus** (Lye) J.-P. Lebrun & Stork comb. nov.

C. microstylus (C. B. Clarke) Mattf. & Kük. – See below under **Kyllinga microstyla** C. B. Clarke

(**C. microumbellatus** Lye); Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 254, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 170, 1983.

Perennial slender herb with a creeping horizontal rhizome 3−5 cm long; culms few from the growing apex, 10−15 cm long, 1−2 mm ∅, sharply triangular; leaves from the lower 1−5 cm only; sheaths 2−3 per culm, straw-coloured, brown or purplish; blades absent in some culms, in others 10−20 cm long, 3−5 mm wide; inflorescence an open anthela 3−13 cm long, 3−9 cm wide, of 7−15 digitate clusters of spikelets or groups of such clusters on 2−11 cm long peduncles, these of various lengths; spikelets in clusters of 2−6, linear, 3−9 mm long, 6−20-flowered, light reddish-brown; involucral bracts 5−10, leafy, to 5−13 cm long; nutlet known only immature.

Swampy area; 380 m alt.

Only known from the type collected in 1968 (Kenya, Shimba Hills).

Intermediate between *C. prolifer* and a *C. haspan* group – and probably a hybrid.

C. mindorensis (Steud.) Huygh – See below under **Kyllinga nemoralis** (J. R. Forst. & G. Forst.) Dandy ex Hutch. & Dalziel

(**C. minutus** (C. B. Clarke) Kük.); Fl. Trop. Afr. 8: 309−310, 1901 (as *Juncellus minutus* C. B. Clarke); Engler, Pflanzenreich IV. 20/101: 326, 1936; Fl. Trop. E. Afr., Cyper.: 254, 2010.

bas.: *Juncellus minutus* C. B. Clarke

"A very small annual" herb; culms 2−4 cm long, trigonous; leaves all basal, few, 2−8 cm long, c. 1 mm wide; inflorescence a single sessile head of 8 spikelets; bracts 2, leaf-like, to c. 2,5 cm long; spikelets compressed, 4 × 1 mm, reddish, 6−8-flowered; glumes closely packed, boat-shaped, with green keel; nutlet minute, pyriform.

In mountain; ecology not recorded; c. 900 m alt.

Known only from the type collected in 1893; Kenya, K4/6, Ongalea (Ngulia), Machakos/Masai, c. 3°00'S × 38°10'E. Not mapped.

Genus uncertain. "A detslip by Karen Wilson says: 'surely a *Bulbostylis*'. Does not key to anything else" (Fl. Trop. E. Afr., Cyper.: l.c.).

C. mogadoxensis Chiov.; Thulin, Fl. Somalia 4: 129, 1995.

Perennial herb with 1−5 crowded culms with small swollen bases c. 5 mm thick frequently set in a horizontal row and covered by reddish-brown leaf sheaths sometimes splitting into fibres; culms 3−25 cm long, 0,5−1 mm ∅, obtusely triangular to terete; leaves from the basal 1−5 cm only, usually 4−6 per culm; blades to c. 10 cm long, 1−2 mm wide, serrulate on margins; upper sheaths conspicuously whitish; inflorescence a terminal cluster 1−3 cm ∅ consisting of 5−20 densely crowded spikelets, rarely with 1−2 additional clusters on to 1,5 cm long peduncles; spikelets ovate, 5−10 mm long, *flattened*, 15−30-flowered.

Sand dunes and coastal bushland; to 50 m alt.

Very close to *C. medusaeus*, which has smaller and less compressed spikelets with smaller glumes (2−3 mm, not 3−3,5 mm long) and nutlets (c. 1 mm long, not 1,2 mm).

C. mollipes (C. B. Clarke) K. Schum. – See below under **Mariscus amomodorus** (K. Schum.) Cufod.

C. monoflorus Lye – See below under **Kyllinga uniflora** Mtot.

C. mortonii (S. S. Hooper) Lye – See below under **Pycreus mortonii** S. S. Hooper

C. mudugensis D. A. Simpson; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Kew Bull. 49: 366, 1994; Thulin, Fl. Somalia 4: 128, 1995.

Tussocky perennial herb with a very short rhizome; culms crowded, 3−8 cm long, 0,6−0,8 mm ∅, angular to almost terete, base slightly swollen and covered by a dense layer of old leaf sheaths; leaves basal; blades 2−6 cm long, often curved towards apex; inflorescence a sessile terminal cluster of 4−15 crowded spikelets with or without 1−2 additional stalked spikelet groups on to 8 mm long peduncles; spikelets linear, 6−14 mm long, 10−20-flowered.

Coastal plain on gently sloping, open limestone rocks with some *Entada leptostachya*; c. 70 m alt.

Known only from the type collected in 1989.

C. mundii (Nees) Kunth ("*mundtii*") – See below under **Pycreus mundii** Nees

C. muricatus Kük. – See below under **Pycreus muricatus** (Kük.) Napper

C. mwinilungensis Podlech; Fl. Trop. E. Afr., Cyper.: 203, 2010.

Perennial, *stoloniferous* herb to 34 cm tall with small round *tubers* at base of culms; culms few, 20−40 cm long, 0,5−1,4 cm ∅, trigonous to triquetrous; leaves to 33 cm long; sheaths reddish-brown, greenish-brown to brown, 1,5−5 cm long; blades linear, flat, 5−30 cm long, 1,1−2,9 mm wide; inflorescence a simple anthela, primary branches 1−4, 0,5−3 cm long; spikelets in digitate clusters, sessile and at end of primary branches, 2−11 per cluster, ovoid, 5−13 mm long.

Seasonal bogs or swamp, in damp hollows; 1000−1400 m alt.

Botswana (var. **mwinilungensis**).

Comprises 2 vars.: – var. **mwinilungensis**; – var. **maior** Podlech with tall culms (35−40 cm), in NE Zambia.

C. myrmecias Ridl. – See below under **Mariscus myrmecias** (Ridl.) C. B. Clarke

C. natalensis Hochst. ex C. Krauss, incl. var. *longibracteata* C. B. Clarke in Durand & Schinz, Consp. fl. afr. 5: 570, 1894; Simpson & Inglis in Kew Bull. 56: 301, 2001; Sabonet News 8/1: 18, 2003. – Icon.: Gordon-Gray, Cyper. Natal: 62, 1995 (nutlet); S. Afric. J. Bot. 72: 134, 2006.

Perennial herb with horizontal stoloniferous rhizome clothed in ovate, acute, pale *ferruginous* scales 2,5 cm long; culms solitary, nodeless, 0,1−1,4 m tall, *trigonous*; leaves usually hardly any, and reduced to sheaths, sometimes in a basal tuft, 5−15(−65) cm long; inflorescence a ± condensed umbel with 3−6 rays, rays 2,5−10(−17,5) cm long, secondary umbel at end of each ray congested into a compound head of 12−35 spikelets that are rigid, very slightly compressed, dirty straw-coloured, 10−25 mm long, 12−24-flowered.

Essentially a seashore plant; sandy coastal areas; an effective sand binder of stable humic sands, sometimes forming a ± pure ground cover.

Variable species.

E S. Africa.

Fibres used for mats, baskets.

C. nduru Cherm.; Lowe & Stanfield, Fl. Nigeria: Sedges: 47, 1974; Haines & Lye, Sedges & rushes E. Afr.: 257, 1983 (as *C. margaritaceus* var. *nduru*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Fl. Trop. E. Afr., Cyper.: 179, 2010. – Icon.: Jaeger & Adam, Végét. vascul. Mts Loma (Boissiera 33): 218−219, 1981.

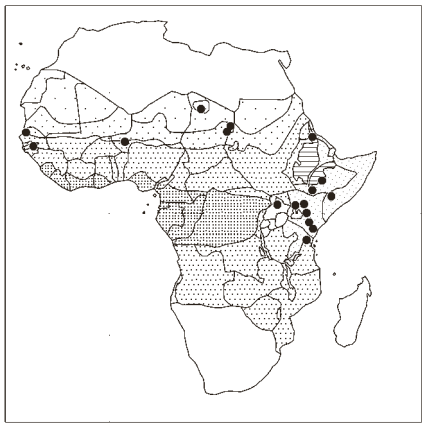
syn.: *C. margaritaceus* Vahl var. *nduru* (Cherm.) Kük.

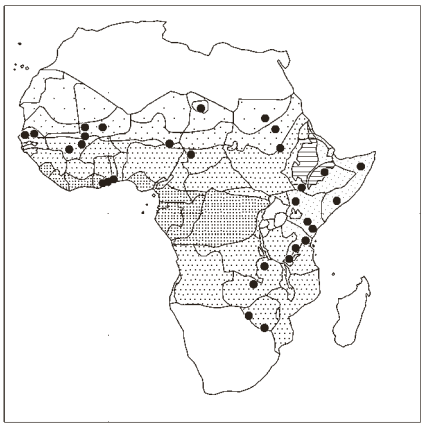
Perennial herb to 29 cm tall with a swollen bulb-like base; culms tufted, 7−28 cm long, 0,7−1,4 mm ∅, trigonous to ± terete; leaves very few, to 12 cm long; blade linear, 2−7,5 cm long, 0,7−1,6 mm wide; inflorescence capitate; *spikelets* in a dense head, 1−6 per head, ovoid, *7−11 mm long*. – Near *C. margaritaceus* but culm base slightly more flask-shaped and swollen; leaves fewer and short; inflorescence smaller with fewer and smaller spikelets (not 6−22 mm long); involucral bracts often shorter than inflorescence (0,5−1,5 cm long, not 2−8 cm long); glumes white to brownish, thinner, with an obtuse apex (not acute).

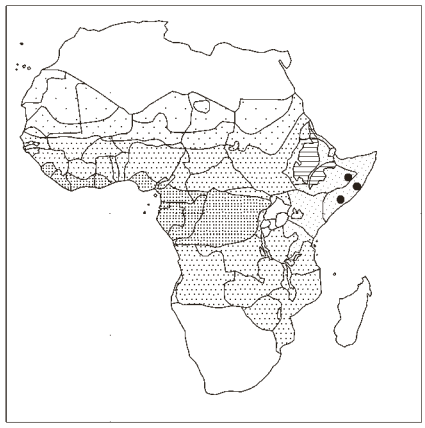
Recently and regularly burnt grassland; open woodland; river banks; (pyrophyte; Steentoft, Flow. pl. W. Africa: 317, 2008); 650−1900 m alt.

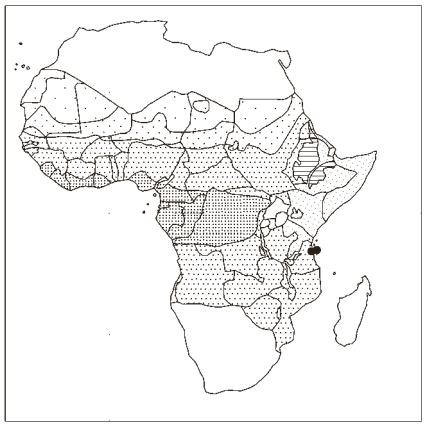
C. *neobarteri* T. Koyama – See below under **Lipocarpha barteri** C. B. Clarke

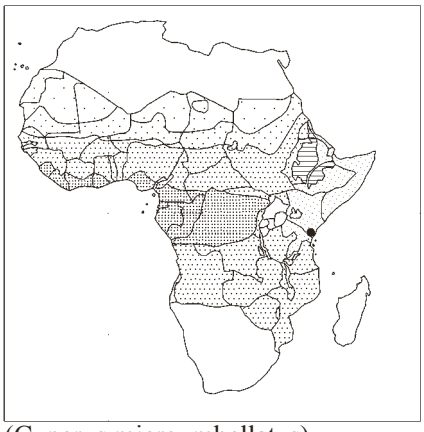
C. neocooperi Reynders – See below under **Pycreus cooperi** C. B. Clarke

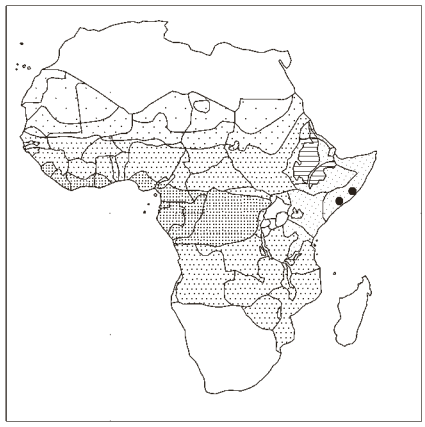

Cyperus meeboldii

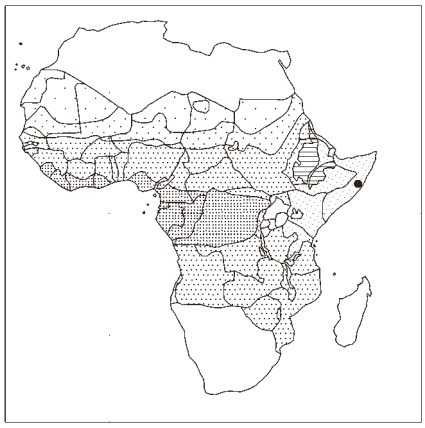

Cyperus michelianus

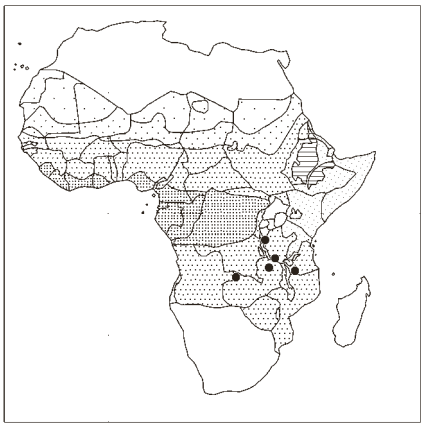

Cyperus microglumis

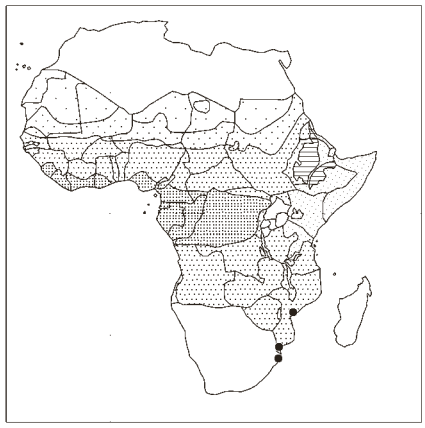

Cyperus micromariscus

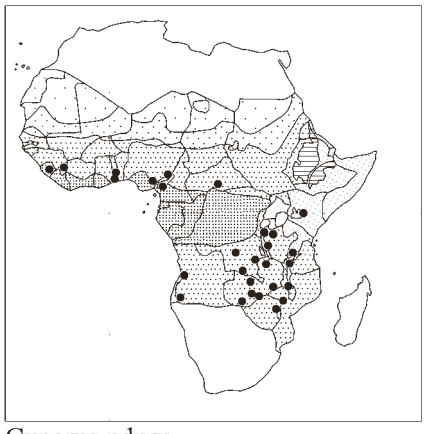

(Cyperus microumbellatus)

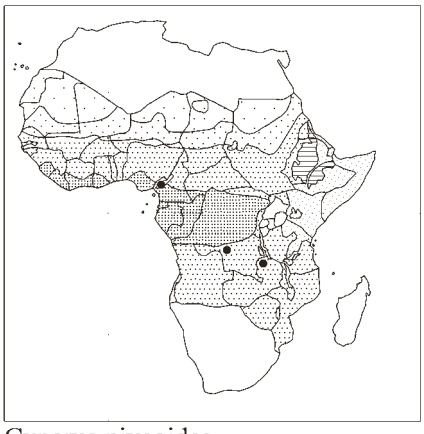

Cyperus mogadoxensis

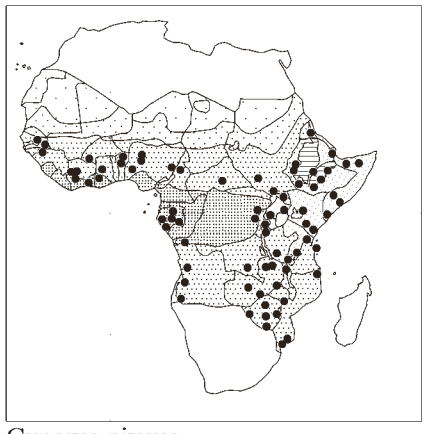

Cyperus mudugensis


Cyperus mwinilungensis


Cyperus natalensis


Cyperus nduru


Cyperus niveoides


Cyperus niveus

C. neoschimperi Kük. – See below under **Mariscus schimperi** Hochst. ex A. Rich.

C. ngothe (Mtot.) Huygh – See below under **Kyllinga ngothe** Mtot.

C. nigricans Steud. – See below under **Pycreus nigricans** (Steud.) C. B. Clarke

C. nigriceps Huygh – See below under **Kyllinga brevifolia** Rottb. var. **lurida** (Kük.) Beentje

C. nigripes (C. B. Clarke) Kük. – See below under **Kyllinga nigripes** C. B. Clarke

C. nigritanus (C. B. Clarke) Lye – See below under **Kyllinga alba** Nees subsp. **alba**

C. nitidus Lam. – See below under **Pycreus nitidus** (Lam.) J. Raynal

C. niveoides C. B. Clarke; Kükenthal in Engler, Pflanzenreich IV. 20/101: 281, 1936.

syn.: *C. obtusiflorus* Vahl var. *niveoides* (C. B. Clarke) Kük.

Rhizomatous perennial herb forming dense tufts; culms 10–40 cm tall, triangular, at base much thickened by tough torn dusky straw-coloured leaf sheaths, but not bulbous; leaves 2/3 the length of culms, setaceous; inflorescence a single hemispherical head of 3–6 spikelets which are flattened, elliptic, 8–12 × 5–6 mm, 12-flowered, whitish.

Burnt places in dry forest.

"This came to hand [to C. B. Clarke] marked *Cyp. macropus* (i.e. *Mariscus macropus* below [= *Mariscus amomodorus*]), to which the base of the stems and heads bear a general resemblance. The examples are young, but hardly differ from the Indian *C. niveus*, Retz." (Fl. Trop. Afr. 8: 319, 1902).

C. niveus Retz., excl. var. *flavissimus* (Schrad.) Lye (= *C. sphaerocephalus*); Patel & Shah, Vidya (J. Gujarat Univ.) 5: 148, 1962; Kew Bull. 31: 833–834, 1977; Fl. W. Trop. Afr., ed. 2, 3/2: 293, 1972 (*C. tisserantii*, *C. ledermannii*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 618, 1985 (*C. ledermannii*); Thulin, Fl. Somalia 4: 130, 1995 (var. *leucocephalus*); Gordon-Gray, Cyper. Natal: 65–66, 1995 (as *C. obtusiflorus*); Fl. Eth. & Eritrea 6: 464, 1997; Prasad & Singh, Sedges Karnataka (India) in J. Econ. Taxon. Bot., Add. Ser. 21: 110–111, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Gereau & al., Lake Nyasa florist. checklist: 46, 2012 (var. *leucocephala*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 237, 1955 (as *C. obtusiflorus*); Kew Bull., Add. Ser. 7: 311, 1980; Haines & Lye, Sedges & rushes E. Afr.: 256, 1983 (var. *leucocephalus*) and text p. 257 *C. margaritaceus* var. *tisserantii*; Fl. Eth. & Eritrea 6: 464, 1997 (var. *leucocephalus*); Fl. Pakistan 206: 128, 2001; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 105, 2001; Fl. Trop. E. Afr., Cyper.: 169, 2010; Fl. Gabon 44, Cyper.: 61 (*C. niveus* var. *leucocephalus*), 75 (*C. tisserantii*, nutlet), 2012; Fl. China 23, Ill.: 304, 2012.

Perennial herb to c. 1,2 m tall with crowded culms often growing in a straight line; culm bases swollen and fused into a horizontal rhizome; culms 5–120 cm long, 0,7–3,7 mm ∅, triangular to rounded, bases covered by hard leaf sheaths nearly black at base, brown up to the culm, 1–13 cm long; leaf blade 5–56 cm long, 1,4–8 mm wide; inflorescence a solitary, usually globose head of 5–50 spikelets, 1–4 cm ∅, *white* with a *pinkish brown tinge*; spikelets ovoid, 7,2–17 mm long.

Dry grassland, on rocky stony slopes; in shallow soil over rocks; coastal dunes; *Loudetia arundinacea* grassland with scattered trees of *Combretum, Faurea*, etc.; *Protea* grassland; savannas; open woodland or bushland; dried up riverbeds; swampy areas; cultivated areas; very resistant to burning; near 0–2600 m alt.

Quite variable species.

Namibia, S. Africa, Botswana, Lesotho, Swaziland; islands of W Indian Ocean (Aldabra, etc.); Arabia, Yemen. – Subsp. **niveus** from E Iran, Pakistan through to N India, Kashmir, Burma, Thailand, Vietnam, SW China.

The African material deviates from the Asian one in having usually 4 involucral bracts instead of 2, the bracts being also conspicuously longer (Fl. Eth. & Eritrea 6: 464, 1997). In our area the species comprises 2 vars.: – var. **leucocephalus** (Kunth) Fosberg [bas.: *C. sphaerocephalus* Vahl var. *leucocephalus* Kunth; syn.: *C. compactus* Lam. 1791, nom. illeg., non Retz. 1788 (= *C. compactus*, Madagascar); *C. compactus* var. *tenerior* C. B. Clarke; *C. obtusiflorus* Vahl, incl. var. *rigidus* (Vahl) Kük., var. *ledermannii* Kük., var. *peramoenus* Kük., var. *macrostachys* (Gräbn.) Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 238, 1955 [bas.: *C. compactus* Lam. var. *macrostachys* Gräbn., non *C. compactus* Retz. var. *macrostachys* (Boeckeler) Kük.], and incl. var. *membranaceus* Kük. [cf. Fl. Trop. E. Afr., Cyper.: 253, 2010, type without basal part, identification impossible; from Tanzania, Tanga Distr., Peter 39728]; *C. somalicus* Gand.; *C. ledermannii* (Kük.) S. S. Hooper; *C. niveus* var. *ledermannii* (Kük.) Lye and var. *polyphyllus* Boeckeler; *C. rigidus* Vahl; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gardens, Kew]; – var. **tisserantii** (Cherm.) Lye [bas.: *C. tisserantii* Cherm.; *C. margaritaceus* Vahl var. *tisserantii* (Cherm.) Kük.], perhaps a good species. – These two varieties differ from each other in the following characters: var. **leucocephalus** with culms to 1,2 m long, leaf blade flat and 1,4–8 mm wide, spikelets many per head; var. **tisserantii** with culms 5–20 cm tall, leaf blade to c. 1 mm wide, spikelets fewer, i.e. 5–12 per head, often occurring in burnt areas, plants showing signs of burning.

There are few differences between *C. margaritaceus* and *C. niveus* (separated in Fl. Trop. E. Afr., Cyp.: p. 171) only by presence/absence of rhizomes. It is quite possible this is all one species; *niveus* is the oldest name (Fl. Trop. E. Afr., Cyper., l.c.).

Note: *Cyperus niveus* Retz. var. *flavissimus* auctt., non (Schrad.) Lye = *C. austrochrysanthus*.

C. nubicus Gand. – See below under **C. rotundus** L.

C. nuerensis Boeckeler – See below under **Pycreus nuerensis** (Boeckeler) S. S. Hooper

C. nutans Vahl 1805, non Sieber ex C. Presl 1828 [(= *C. distans* L. f. 1782) = *Mariscus longibracteatus* Cherm., non *C. distans* G. Mey. 1818 (= *C. odoratus* L.) = *Torulinium odoratum* (L.) S. S. Hooper], var. **eleusinoides** (Kunth) Haines; Fl. Pakistan 206, Cyper.: 108, 2001 (as subsp. *eleusinoides*); Prasad & Singh, Sedges Karnataka (India), Cyper.: 112–113, 2002; Simpson & Inglis in Kew Bull. 56: 301, 2001; Puff & Sileshi, Pl. Simen: 241, 2005; Fl. Trop. E. Afr., Cyper.: 243–244, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 198–199, 1983; Fl. Eth. & Eritrea 6: 454, 1997;

Fl. China 23, Ill.: 311, 2012 (*C. nutans*, *C. eleusinoides*); Fl. Mascareignes 202, Cyper.: 40, 2018.

bas.: *C. eleusinoides* Kunth (excl. var. *dinklageanus* Kük. = *C. congensis* C. B. Clarke, See at end of **Mariscus**).

syn.: *C. nutans* subsp. *eleusinoides* (Kunth) T. Koyama; *C. xanthopus* Steud.; *C. kotschyanus* Fenzl ex Steud.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial robust herb with thick, sometimes nodular, creeping rhizome; culms few, 0,36−1,2 m long, 0,15−0,6 cm ∅, trigonous; leaves to 60 cm long; sheath greenish, yellow or reddish-brown, 4−21 cm long; blade flat, linear, 19−45 cm long, 3−8 mm wide; inflorescence a simple or compound anthela, primary branches 4−7, 2−9 cm long; spikelets in crowded spikes, sessile and at end of primary branches, many per spike, ovoid, 5−8 mm long.

Stream banks, damp meadows on stream bank; in or near seasonal swamps, pools or streams; swampy grassland; 800−2300 m alt.

Scattered in tropical Africa. Palestine, Yemen (Wood, Handbook Yemen flora: 326, 1997), Afghanistan, Pakistan, India, Sri Lanka E-wards to E and SE Asia – tropical Australia.

Var. **nutans**, with loosely arranged spikes with fewer flowers (4−12, vs 10−40 in var. **eleusinoides**) occurs in Asia and Australia.

Fibres (culms) used for making mats or rope.

C. nyasensis (Podlech) Lye – See below under **Mariscus nyasensis** Podlech

C. nyererei Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 176−177, 2010; Gereau & al., Lake Nyasa florist. checklist: 46, 2012. – Icon.: Nord. J. Bot. 36: 226, 1983; Haines & Lye, Sedges & rushes E. Afr.: 159, 1983.

Perennial herb to 42 cm tall, densely tufted; culms with hard base, covered with black fibres from old leaf sheaths; culms tufted, 15−40 cm long, 0,5−1 mm ∅, trigonous; leaves to 21 cm long; sheath purple to black, 1−3 cm long; blade flat, 5−18 cm long, 1,3−3 mm wide; inflorescence loosely capitate to simple, primary branches 0−3, 0−3 cm long; spikelets 3−12 per digitate clusters, sessile and at end of primary branches; spikelets ovoid, 6−8 mm long.

Woodland; grassland; in thin soil over rock; scree slopes; 1600−2740 m alt.

C. nyikanus Goeverts – See below under **Kyllinga oblonga** C. B. Clarke

C. obbiadensis Chiov. – See below at end of **Mariscus** (p. 275).

C. oblongoincrassatus Kük. – See below under **Mariscus taylorii** C. B. Clarke

C. oblongus (C. B. Clarke) Kük. – See below under **Kyllinga nervosa** Steud., **K. oblonga** C. B. Clarke, and **K. ruwenzoriensis** C. B. Clarke

C. obtusatus (J. Presl & C. Presl) Mattf. & Kük. var ***africanus*** Kük. – See below under **Kyllinga erecta** Schumach. – The true **K. obtusata** J. Presl & C. Presl is from S. America.

(***C. obtusiflorus*** Vahl var. *membranaceus* Kük.) – See note under synonyms of **C. niveus** var. **leucocephalus** (Kunth) Fosberg above.

C. odoratus L. – See below under **Torulinium odoratum** (L.) S. S. Hooper

C. ossicaulis Lye – See below under **Mariscus ossicaulis** (Lye) J.-P. Lebrun & Stork, comb. nov.

C. overlaetii (Cherm. ex S. S. Hooper & J. Raynal) Lye – See below under **Pycreus overlaetii** Cherm. ex S. S. Hooper & J. Raynal

C. owanii Boeckeler – See below under **Mariscus owanii** (Boeckeler) C. B. Clarke

C. pachystylus (Kük.) Kük. – See below under **Kyllinga pachystyla** Kük.

C. pagotii (J. Raynal) Lye – See below under **Pycreus pagotii** J. Raynal

C. palmatus (Lye) C. Archer & Goetgh. – See below under **Cyperus usitatus** Burch. subsp. **palmatus** Lye

C. paolii Chiov. 1915 (nom. altern. *Mariscus paolii* Chiov.); syn.: *Mariscus amomodorus* (K. Schum.) Cufod. var. *paolii* (Chiov.) Cufod.; *Cyperus mollipes* (C. B. Clarke) K. Schum. var. *paolii* (Chiov.) Kük.; a dubious species (identity uncertain) as the mature nutlet is unknown. – See below under **Mariscus paolii** Chiov.

C. papyrus L.; Renier, Fl. Kwango 1: 70, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 619−620, 1985; Gordon-Gray, Cyper. Natal: 66, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 71 (map), 1999; Simpson & Inglis in Kew Bull. 56: 302, 2001; Archer & Craven, Cyper. Namibia: 21, 2004; Cafferty & Jarvis in Taxon 53: 179, 2004 (typification); Steentoft, Flow. pl. W. Afr.: 317, 2008; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 118, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015. – Icon.: Prospero Alpini, De plantis Aegypti liber: 43, 1592 ("the first image of the plant to be published in Europe," reproduction by L. T. Tomasi & T. Willis, An Oak Spring Herberia, herbs and herbals from the fourteenth to the nineteenth centuries: 97, 2009); Kirkia 2: pl. IV (between p. 56 & 57), 1961; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 225, 1955 (photo. in habitat); Bot. J. Linn. Soc. 78: 301−305, 1979; Haines & Lye, Sedges & rushes E. Afr.: 176, 1983; Fl. Eth. & Eritrea 6: 442, 1997; Cook, Aquat. & wetland pl. south. Afr.: 92, 2004; Boulos, Fl. Egypt 4: 375, 2005; Akoègninou & al., Fl. analyt. Bénin: 95, 2006; Pickering & Roe, Wild flowers Victoria Falls area: 58, 2009; Fl. Trop. E. Afr., Cyper.: 210, 2010; Fl. Gabon 44, Cyper.: 63, 2012; Christenhusz & al., Plants of the World: 201, 2017.

syn.: *Chlorocyperus papyrus* (L.) Rikli (See also below under the subspp.).

Perennial robust herb to 5,5 m tall (one of the largest sedges) with a creeping rhizome 2−6 cm ∅ with a white central part of air-tissue and a light brown harder outside cylinder; outside of rhizome densely covered by blackish scales 5−10 × 5−10 mm; roots many, 10−30 cm or more long, 2−5 mm ∅; culms 0,2−5,5 m long, 1−4 cm ∅, trigonous with rounded angles; leaf sheath brown to black, leathery to almost woody, 4−26 cm long; blade absent; inflorescence simple, primary branches to 350, 7−40 cm long; spikelets on an elongated axis and at end of primary and secondary branches, to 40 per axis, lanceolate-cylindric, each 3−10 mm long.

Humid savanna with *Persicaria* sp.; river banks with *Caladium*, *Costus* cf. *afer*; swamps; margins of water bodies; sometimes forming dense stands in aquatic wetland habitats and dominates swamps with low biodiversity (Naczi & Ford, o.c.: 39); also forming dense, impenetrable floating mats in deeper water; seasonally inundated permanent grasslands (often called "herbaceous swamps"); <100−2500 m alt. – "Among the swamps of Africa, papyrus swamps are a distinctive type, a wetland that is easy to spot from air, land, or water… because papyrus… develops into a monoculture with a light green canopy that looks like a fluffy blanket from above, … the papyrus swamps in the middle of Africa are now considered to be among the most productive plant communities on earth because papyrus has one of the highest growth rates in the world" (Gaudet, o.c.: 7). – Papyrus "becomes a harmful weed when it either encroaches on open water from the banks or forms sudd… In the Sudan papyrus sudd is estimated to be responsible also for the loss of 50 per cent of the White Nile's water through evaporation and transpiration… it also encroaches on irrigation schemes" (Kirkia 2: 16, 1961).

Native to N & E Africa, Egypt; Madagascar, Mascarene Isl., NE S. Africa. Introduced to southern Europe, N Africa (Morocco, Algeria), tropical Asia and tropical S. America.

Naturalised in Sicily, Cameroon, Florida (USA).

"Many subspecies have been recognised including subsp. *madagascariensis* (Willd.) Kunth … (type from Madagascar), and subsp. *zairensis* (Chiov.) Kük. … (type presumably from Zaire …" (Gordon-Gray, Cyper. Natal: 66, 1995). – The World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, recognises 4 subspp.: – subsp. **papyrus** [syn.: *C. papyraceus* Crantz; *Papyrus antiquorum* Willd.; *Cyperus papyrus* subsp. *antiquorum* (Willd.) Chiov., and var. *antiquorum* (Willd.) C. B. Clarke; *Cyperus antiquorum* (Willd.) Chiov.; *C. papyrus* subsp. *antiquorum* (Willd.) Kük.; *C. ugandensis* Chiov.; *C. papyrus* subsp. *ugandensis* (Chiov.) Kük.; *C. papyrus* subsp. *hadidii* Chrtek & Slavíková; *C. papyrus* var. *niliacus* Tournay, and subsp. *niliacus* Tournay; *P. mossambicensis* Parl.; *C. panormitanus* Chiov.]; See also World Checklist of Selected Plant Families cited above; from Egypt to trop. & S. Africa; – subsp. **madagascariensis** (Willd.) Kük. [bas.: *Papyrus madagascariensis* Willd.; syn.: *Cyperus madagascariensis* (Willd.) Roem. & Schult.; *C. imerinensis* Boeckeler]; in Tanzania, W Indian Ocean islands (Mauritius, Madagascar, Réunion); – subsp. **nyassicus** (Chiov.) Kük. [bas.: *C. nyassicus* Chiov.]; in Malawi, NE S. Africa; – subsp. **zairensis** (Chiov.) Kük. [bas.: *C. zairensis* Chiov.]; in W C. Africa.

"The prince of Cyperaceae, the largest and most beautiful of the whole family, and of great economic use" (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 118, 1899). "The plant was first described by Theophrastus (c. 372−287 B. C.) from material under cultivation in the Nile delta. He referred to the 'wood' [rhizome] being used for utensils and fuel and the stem for boats, sails, mats, cloth, cord and writing-material. The pith was commonly eaten either raw or cooked, and used for caulking seams in boats… The principal use … in the Ancient World was the manufacture of parchment for writing upon … In Lake Chad, Yedina make canoes and rafts of the stem, and weave watertight baskets" (Burkill, l.c.). Cf. also: Müller & Deil in Phytocoenologia 35: 328, 2005. – Also used as fuel in Uganda-Rwanda where a pilot factory was set up in the 1980s to process culms into fuel briquettes … it was abandoned after the political troubles in 1994 (Naczi & Ford, Sedges: uses…: 1, 8, 39, etc.). – Often cultivated as an ornamental in greenhouses, and grown as a pot plant in conservatories (e.g. *C. papyrus* 'Nanus'; '*C. haspan viviparus*' misapplied. – "Apparently the rhizomes and the lowermost part of one year culms were consumed" (C. R. Peters, African wild plants with rootstocks reported to be eaten raw: the Monocotyledons, part IV, in Timberlake & Kativu, eds., African plants: biodiversity, taxonomy and uses: 483−503, See p. 490−491, Roy. Bot. Gard., Kew, 1999).

BOAR, R. R. (2006). Responses of a fringing Cyperus papyrus L. swamp to changes in water level. *Aquat. Bot*. 84: 85−92.

FOTIUS, G. (1974). Problèmes posés par l'évolution de la végétation liée à la baisse du lac Tchad. *Rapport de Mission*, Centre ORSTOM de N'Djamena [Etude de groupements végétaux]. 29 pp.

GAUDET, J. (2014). *Papyrus: The plant that changed the world – from ancient Egypt to today's water wars*. Pegasus Books, New York & London. XIX + 300 pp.

LATACZ, J. (2006/2007). Das Papier der Antike. *Spektrum Wiss*. Januar 2007: 28−35.

LENOBLE-PRÉDINE, F. (2014). Lotus et papyrus, l'Egypte de toute éternité. *Hommes & Plantes* 90: 20−23.

TERER, T. & al. (2014). Importance of seedling recruitment for regeneration and maintaining genetic diversity of Cyperus papyrus during drawdown in Lake Naivasha, Kenya. *Aquat. Bot*. 116: 93−102.

TERER, T. & al. (2015). Strong isolation by distance revealed among Cyperus papyrus populations in the Rift Valley lakes, Lake Victoria, and isolated wetlands of Kenya. *Aquat. Bot*. 121: 57−66.

THOMPSON, K. & al. (1979). Papyrus swamp development in the Upemba Basin, Zaïre: studies of population structure in Cyperus papyrus stands. *Bot. J. Linn. Soc*. 78: 299−316.

As to the Sudd (Sudan) = Bahr al Jabal, as Sudd or AI Sudd, See Sudd – Wikipedia, the free encyclopedia (http://en.wikipedia.org/wiki/Sudd).

The Greek word *pápÿros* designated the plant as well as the product derived from it. It was adopted by Latin and from there entered into the "modern" languages. Around the year 800 B. C. the papyrus with its consonant script reached the Greek. Nowadays the word *pápyros* is often interpreted as derived from the Egyptian pa-per-aa, meaning Pharao's possession; this might indicate that the king had the monopoly of manufacture and trade (See further Latacz, o.c.).

"Papyrus is still found at the headwaters of many of the major rivers in Africa, where it protects and nurtures. Years ago it disappeared from Egypt; now it is gone from Lake Chad and many places in West Africa. With the exception of the papyrus growing around the headwaters of the Blue Nile in Ethiopia, papyrus has virtually disappeared from Africa north of the 10th parallel. From 30°N to 10°N, a matter of 1,000 miles [= c. 1600 km], it is gone. The large papyrus swamp in the Sudd is the last bastion, a swamp that is in danger of being drained to provide water for irrigation" (Gaudet, o.c.: 270). Further, "papyrus cannot compete with *Typha* or *Phragmites* on sites subject to seasonal drought or salinity" (Peters, o.c.: 491).

The plant is known to form hybrids with other species (Gordon-Gray, o.c.: 66; Cook, o.c.: 92).

C. pauper Hochst. ex A. Rich. – See below under **Pycreus pauper** (Hochst. ex A. Rich.) C. B. Clarke

C. pectinatus Vahl – See above under **Anosporum pectinatum** (Vahl) Lye

C. pedunculatus (R. Br.) J. Kern – See below under **Remirea maritima** Aubl.

C. pelophilus Ridl. – See below under **Pycreus pelophilus** (Ridl.) C. B. Clarke

C. penzoanus Pic. Serm.; Fl. Trop. E. Afr., Cyper.: 247, 249, 2010; Friis in Webbia 70: 164, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 177, 1983; Fl. Eth. & Eritrea 6: 443, 1997.

syn.: *C. morandinii* Pic. Serm.

Perennial herb with thick woody rhizome; culms closely set on rhizome, 1−3 m tall, 1−2 cm ∅, sharply-triangular to almost winged; leaf sheath dark reddish-brown; blade 5−10 cm long; inflorescence a compound anthela to 40 × 40 cm, primary branches 15−30, 5−35 cm long, ending in simple umbels of 1−10 spikes; spikes 2−4 cm long, 1−2 cm wide, each with many spreading spikelets, these cylindric, 5−9 mm long.

In water at lake-shore; very wet swamps; 1650−1850 m alt.

Material (Guinea 122−90) from Equatorial Guinea has been identified as this species by the purple lines in the axis of the inflorescence (a lax pseudoumbel), etc. (Cabezas & al. in Belg. J. Bot. 137: 9, 2004). Velayos & al. Fl. Guinea Ecuat. 11: 353, 2014, present an illustration of the specimen cited. The identification is uncertain.

C. penzoanus is perhaps a hybrid *C. papyrus* × *C. latifolius*, characters are intermediate.

C. permacer C. B. Clarke; Berhaut, Fl. ill. Sénégal 9: 203, 1988; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011.

syn.: *C. zollingeri* Steud. var. *permacer* (C. B. Clarke) Kük.

Perennial rhizomatous herb 0,5−1 m tall; culms slender, flexuous, triangular, sides c. 3 mm wide; leaves ± as long as culms, blade 2−6 mm wide; inflorescence an anthela, long and narrow, c. 30 × 5 cm; primary branches filiform 5−20 cm long; spikes cylindrical or oblong, c. 3 × 1cm, each of 5−10 erect short *golden-brown* spikelets 12−18 mm long; glumes distinctly keeled and apiculate, 4−5 mm long.

Damp places; river sides; swamps; savanna and humid places; 600 (Guinea) −1123 m alt. [Ivory Coast, Mount Dourou near Kouale (Kuale), Fleury in Chevalier 21708].

Also in Mali: Chevalier 2488 from Nyamina to Koulikoro; Bénin: Chevalier 23682, between Agouagou and Savalou. In Senegal, Cape Verde and perhaps Sine Saloum (specimen Berhaut 1569 insufficient).

Similar in habit to *C. tenuiculmis*, but spikes narrower and spikelets shorter.

C. permutatus Boeckeler – See below under **Pycreus permutatus** (Boeckeler) Napper

C. perrieri (Cherm.) Hoenselaar – See below under **Mariscus perrieri** Cherm.

C. perspicuus (S. S. Hooper) Bauters – See below under **Lipocarpha perspicua** S. S. Hooper

C. persquarrosus T. Koyama – See below under **Lipocarpha nana** (A. Rich.) Cherm.

C. peruvianus (Lam.) F. N. Williams – See below under **Kyllinga vaginata** Lam.

C. peteri Kük. – See below under **Kyllinga peteri** (Kük.) Lye 1982, non *Alinula peteri* (Kük.) Goetgh. & Vorster 1988.

C. phillipsiae (C. B. Clarke) Kük. – See below under **Mariscus phillipsiae** C. B. Clarke

C. pilosulus (C. B. Clarke) K. Schum. ex Kük. – See below at end of **Mariscus** p. 276.

C. pinguis (C. B. Clarke) Mattf. & Kük. – See below under **Kyllinga polyphylla** Willd. ex Kunth var. **elatior** (Kunth) Kük.

C. plateilema (Steud.) Kük. – See below under **Mariscus plateilema** Steud.

C. platycaulis Baker, incl. var. *serpens* (Cherm.) Kük. and var. *lucentinigricans* (K. Schum.) Kük.; but *excl*. var. *kipasensis* (Cherm.) Kük. (= *C. kipasensis*) and var. *resedens* Peter & Kük. (= *C. denudatus*); Renier, Fl. Kwango 1: 71, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 235, 1955; Burrows & Willis, Pl. Nyika Plateau, Malawi: 298, 2005 (as *C. denudatus* var. *lucentinigricans*); Fl. Trop. E. Afr., Cyper.: 190−191, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108−109, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 169, 1983 (as *C. denudatus* var. *lucentinigricans*); Troupin, Fl. Rwanda 4: 445, 1988 (idem).

syn.: *C. lucentinigricans* K. Schum.; *C. denudatus* L. f. var. *lucentinigricans* (K. Schum.) Kük., and var. *delicatulus* C. B. Clarke; *C. serpens* Cherm.; *C. denudatus* var. *serpens* (Cherm.) Kük.; *C. kivuensis* Cherm.

Perennial herb to 95 cm tall; culms tufted, 76−90 cm long, 5−7 mm ∅, triquetrous to slightly winged; leaves to 23 cm long; sheath reddish-brown, 5−23 cm long; blade 0 or maximum 1 cm long; inflorescence almost capitate or a simple anthela, primary branches 4−13, 1−6 cm long; spikelets in digitate clusters, sessile or at end of primary branches, 2−10 per cluster, ± linear, 5−12 mm long.

Mainly in wet areas: swamps, bordering lakes and ponds; swamp in bamboo forest; 950−2950 m alt.

S. Africa; Madagascar.

Very close to *C. denudatus*, and sometimes classified as a subspecies of it.

C. pluribracteatus (Kük.) Govaerts – See below under **Mariscus psilostachys** C. B. Clarke

C. pluricephalus Lye – See below under **Mariscus pluricephalus** (Lye) J.-P. Lebrun & Stork, comb. nov.

(**C. plurinervosus** Bodard), Bull. Soc. Bot. France 99: 61, 1952 (*Mariscus plurinervosus* Bodard nom. alt.).

Perennial herb with a creeping woody thick rhizome giving rise at short intervals to flowering culms 30−35 cm tall; leaves from culm base, 2−4 mm wide and reaching half the length of culms; sheaths short, brown; inflorescence a simple anthela, primary branches 4−5, to 2 cm long; spikes hemispherical, each with 8−12 lanceolate spikelets 8−12 mm long, 10−18-flowered; glumes mucronate, reddish brown, with 12−16 nerves.

Ecology not recorded.

Type: Chad (not Central African Republic !), Somka (or Sounka or Souaka), P. Creac'h 199.

We have seen a colour photograph of the type (P). We consider it a form of the *C. conglomeratus*/ *C. jeminicus* complex (cf. *C. jeminicus* above, p. 113).

Bodard placed this species in *Cyperus* subgen. *Mariscus* sect. *Bulbocaules* subsect. *Vestiti*.

Not mapped by us separately but with **Cyp. conglomeratus** (p. 105).

We acknowledge with thanks the contribution by Dr. Cyrille Chatelain who helped us to identity the plant and its geographic location (region Fort Lamy, SW Chad).

C. podocarpus Boeckeler; Mbayngone & al. in Etudes flor. vég. Burkina Faso 9: 35−38, 2005; Akoègninou & al., Fl. analyt. Bénin: 95, 2006; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Clarke, Illustr. Cyper.: pl. 10, 1909; Engler, Pflanzenreich IV. 20/101: 154, 1935; Lowe & Stanfield, Flora of Nigeria: Sedges: 48, 1974; Berhaut, Fl. ill. Sénégal 9: 204, 1988.

Tufted annual herb 15−40 cm tall; culms 0,5 mm ∅; leaves few, mostly as long as stem, c. 0,5 mm wide; inflorescence apparently borne about 3/4 of the way up the culm, because the bract of the inflorescence stands upright and looks like a continuation of the culm; inflorescence either a single digitate cluster of (1−)2−6 spikelets, or with 1−2 rays (stalked clusters) as well as a sessile cluster; spikelets 4−12 mm long, 2−3 mm wide, not very flattened.

Damp grassland; marshes and beside pools on rock outcrops; humid soils; seasonally inundated sites.

Very variable in size, having a depauperate form with one to a few spikelets similar to *C. pustulatus* var. *debilis* from which it can be distinguished by the much more acute, often curved spikelets (Fl. W. Trop. Afr., ed. 2, 3/2: 289, 1972).

C. poecilus C. B. Clarke, excl. var. *evolutus* Kük. (= *C. benadirensis*); Thulin, Fl. Somalia 4: 127, 1995; Fl. Eth. & Eritrea 6: 488, 1997; Lye in Biol. Skr. 54: 204, 2001.

Tussocky perennial herb with horizontal rhizome set with 1 fresh stem and few-many old culm-bases often in a straight row; culm 20−35 cm long, 1−2 mm ∅, terete to angular; leaves from the basal 6 cm only; sheaths loose, pallid above, brown below; blades 5−15 cm long, 2−3 mm wide; inflorescence a dense head 2−3 cm ∅ with many crowded ovate spikelets, each 10−15 mm long, 10−20-flowered.

Dry habitats, often on rocks or among stones; 1500−1600 m alt.

"Given as occurring in Eritrea (Monte Faghena 2200 m, C. Troll 4179 & 4183)" but these collections (perhaps lost at B) not seen for Flora of Ethiopia (l.c.), the species has been excluded there; however, it should be looked for on this mountain.

C. poikilostachys (Nelmes) Reynders, incl. var. ***heterochrous*** (Nelmes) Reynders (bas.: *Pycreus heterochrous* Nelmes). – See below under **Pycreus poikilostachys** Nelmes

C. polystachyos Rottb. 1773, non Jungh. 1831 (= *Pycreus flavescens*) – See below under **Pycreus polystachyos** (Rottb.) P. Beauv.

C. praealtus Kük. – See below under **Pycreus altus** (Turrill) Lye

C. pratensis Boeckeler, excl. var. *laxus* C. B. Clarke in Fl. Trop. Afr. 8: 352, 1902 ex descr., in Engler, Pflanzenreich IV. 20/101: 467, 1936 (= *Mariscus laxiflorus* Turrill; syn.: *Cyperus turrillii* Kük.). – See below under **Mariscus pratensis** (Boeckeler) Cufod.

C. prieurianus (Steud.) T. Koyama – See below under **Lipocarpha prieuriana** Steud.

C. procerus Rottb., incl. var. *stenanthus* Kük., var. *vanderystii* Kük. (and other varieties from Madagascar and India); Thulin, Fl. Somalia 4: 120, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 71 (map), 1999; Fl. Trop. E. Afr., Cyper.: 234, 241, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 34, 1974; Haines & Lye, Sedges & rushes E. Afr.: 183, 1983; Fl. Eth. & Eritrea 6: 446, 1997; Cook, Aquat. & wetland pl. south. Afr.: 93, 2004.

syn.: *Duval-jouvea procera* (Rottb.) H. Pfeiff.; *Cyperus carnosus* B. Heyne ex Wall. 1831, nom. nud.; *C. anceps* B. Heyne ex Steud. 1840, nom. nud.; *Mariscus thwaitesii* Livera; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb to 1,35 m tall, stoloniferous, stolons covered by distantly spaced black scales; culms 0,42−1,19 m long, 2−5 mm ∅, trigonous; leaves to 90 cm long; sheath brown, sometimes slightly fibrous and blackish at base, 1−11 cm long; blade linear, flat, 30−86 cm long, 0,5−1 cm wide; inflorescence simple to compound, primary branches 3−7, 0,5−12 cm long; spikelets loosely clustered, sessile and at end of primary branches, 7−20 per cluster, linear, 9−28 mm long.

Seasonally wet grasslands and swamps; growing in water; pools; rice fields; clayey soil; 30−1650 m alt. Often abundant.

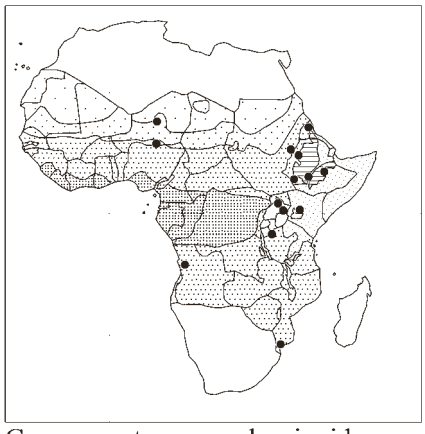
Egypt; Namibia, S. Africa; Madagascar; India, Sri Lanka, Indo-China, SE China, Taiwan, Malesia, N Australia. Record from Somalia (Macaluso 67) uncertain, specimen not seen by Thulin; Ethiopia ? (Jansen 5686), specimen not typical.

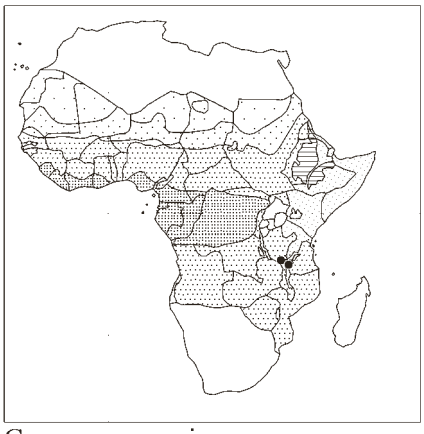
"Small specimens may be confused with *C. esculentus* and large specimens with *Pycreus macrostachyos*, both of which lack the hairs on the rhachis" (Lowe & Stanfield, o.c.: 51, 1974).

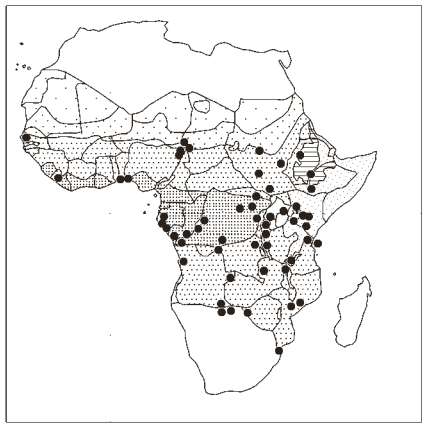
C. prolifer Lam., incl. var. *isocladus* (Kunth) Kük. – "Dwarf or miniature papyrus" – J. S. Afric. Bot. 42: 277, 1976; ibid. 43: 29, 30, 35, 1977; Thulin, Fl. Somalia 4: 117, 1995; Simpson & Inglis in Kew Bull. 56: 303, 2001; Gordon-Gray, Cyper. Natal: 66−67, 1995; Naczi & Ford, Sedges: uses…: 27, 38, 39, 73, 2008; Fl. Trop. E. Afr., Cyper.: 189, 2010; Reutemann & al. in Bot. Rev. 78: 198−199, 2012. – Icon.: Engler, Pflanzenreich IV. 20/101: 11, 1935; J. S. Afric. Bot. 42: 274, 278, 1976; Nord. J. Bot. 1: 60, 1981; Haines & Lye, Sedges & rushes E. Afr.: 171, 1983; Kew Mag. 11/1: p. 8, pl. 236, 1994; Cook, Aquat. & wetland pl. south. Afr.: 94, 2004; Larridon & al. in Bot. J. Linn. Soc. 167: 22, 2011; Fl. Mascareignes 202, Cyper.: 35, 2018.

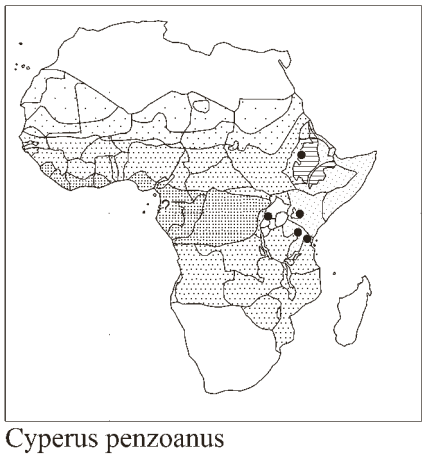
syn.: *C. aequalis* Vahl 1805; *C. aequalis* C. Krauss 1845, nom. illeg.; *C. isocladus* Kunth; *C. jocladus* E. Mey.; *C. esculentus* Drège & E. Mey. 1843, non L.; *Papyrus aequalis* (Vahl) Bojer; *P. laxiflorus* Spreng.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

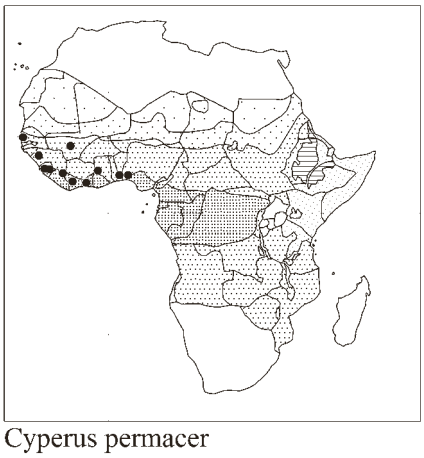
Perennial herb 0,25−1,3 m tall, with thick creeping rhizome and purple to blackish-brown roots; culms crowded, 0,25−1,2 m long, 3−7 mm ∅, terete to trigonous; leaf sheath reddish-brown to dark purple, 2−32 cm long, the tip ending in a sharp point; blade *absent*; inflorescence a simple to compound anthela, *primary branches* to *50−100−260, all equal in length* giving the inflorescence a spherical to umbel-like appearance, 3−11 cm long; spikelets in digitate clusters at end of primary branches and sometimes secondary branches, 1−5 per cluster, 3−17 mm long, 7−25-flowered.

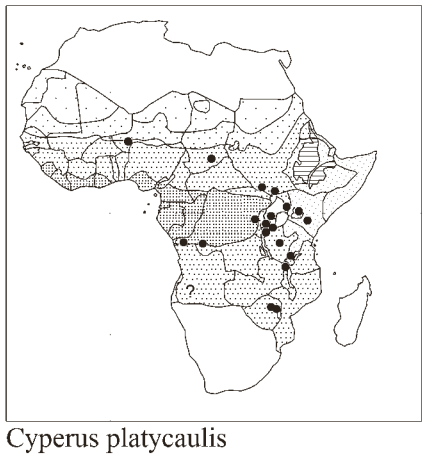

Cyperus nutans var. eleusinoides

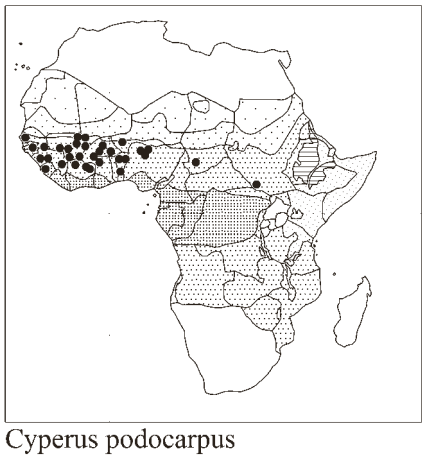

Cyperus nyererei

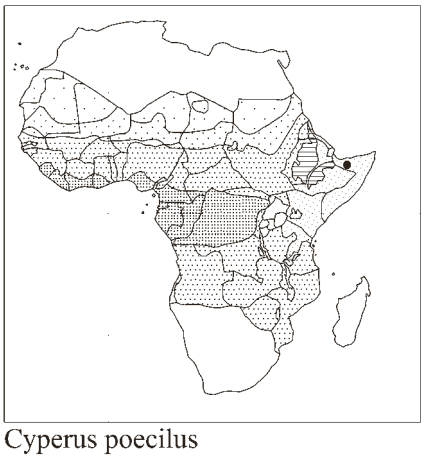

Cyperus papyrus

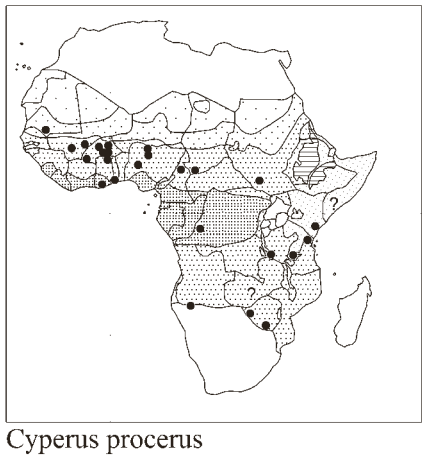

Cyperus penzoanus

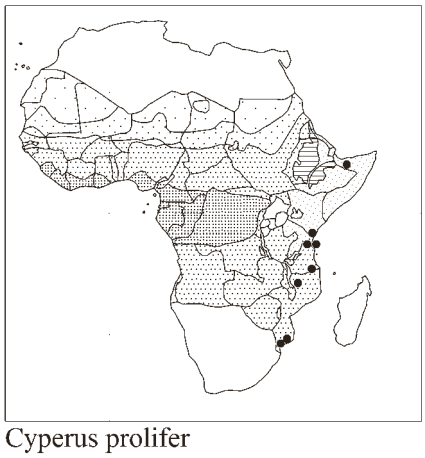

Cyperus permacer

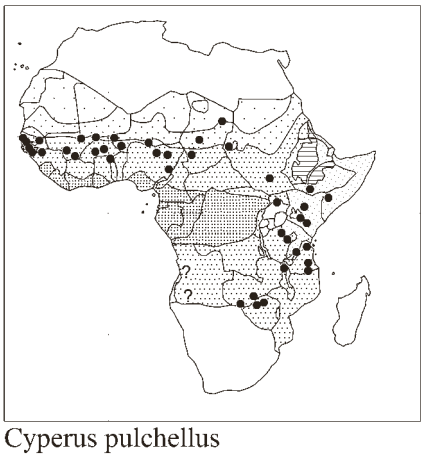

Cyperus platycaulis

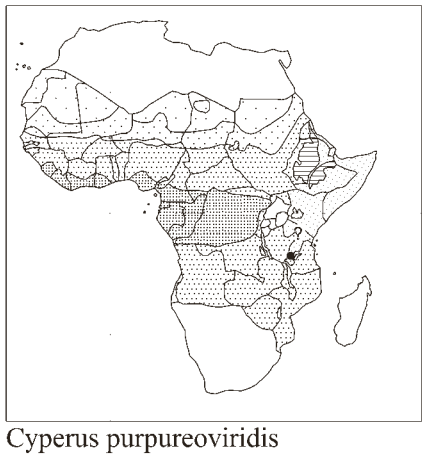

Cyperus podocarpus


Cyperus poecilus


Cyperus procerus


Cyperus prolifer


Cyperus pulchellus


Cyperus purpureoviridis

Swamp edges; stream-sides; seasonally flooded grasslands; in and along permanent pools, especially along coastal areas; forming local stands; 0−500 m alt. – Cannot withstand long periods of waterlogging.

S. Africa; Madagascar, Mauritius, Réunion. Naturalised from cultivation (as an ornamental), and invasive, in C Florida and Hawaii (USA), growing in floating mats.

"It superficially resembles a dwarf papyrus, but the spikelets are arranged digitally at the ends of rays and not in spikes" (Cook, o.c.: 94, 2004).

A hybrid *C. prolifer* Lam. × *C. sensilis* Baijnath (*C.* × *turbatus* Baijnath) from NE S. Africa is known to reproduce by pseudovivipary (Gordon-Gray & al. in S. Afric. J. Bot. 75: 160, 2009).

[**C. prolixus** Kunth], a plant from tropical and subtropical America, is cited in Fl. W. Trop. Afr., ed. 2, 3/2: 288, 1972 under **C. koyaliensis** Cherm. as a possible introduction in Ivory Coast (specimen de Wit 971). – See above under *C. koyaliensis*.

C. proteus (Welw.) Bauters – See above under **Ascolepis protea** Welw.

C. pseudobrunneus (C. B. Clarke ex Cherm.) Kük. – See below at end of **Mariscus** p. 276.

C. pseudobulbosus (Mtot.) Lye – See below under **Kyllinga pseudobulbosa** Mtot.

C. pseudodiaphanus (S. S. Hooper) Lye, incl. var. ***occidentalis*** (S. S. Hooper) Reynders – See below under **Pycreus pseudodiaphanus** S. S. Hooper

C. pseudohildebrandtii Kük. – See below under **Pycreus hildebrandtii** C. B. Clarke

C. pseudokyllingioides Kük. – See above under **Courtoisina cyperoides** (Roxb.) Soják

C. pseudopeteri (Goetgh.) Bauters – See above under **Ascolepis pseudopeteri** Goetgh.

C. pseudopilosus (C. B. Clarke) Govaerts – See below under **Mariscus pseudopilosus** C. B. Clarke

C. pseudosomaliensis Kük. – See below under **Mariscus somaliensis** C. B. Clarke

C. pseudovestitus (C. B. Clarke) Kük. – See below under **Mariscus pseudovestitus** C. B. Clarke

C. pubens Kük. – See below under **Mariscus pubens** (Kük.) Podlech

C. pulchellus R. Br., non *Kyllinga pulchella* Kunth; Simpson in Kew Bull. 45: 489−492, 1990 (revision); Lisowski, Fl. Rép. Guinée 1: 397, 2009; Fl. Trop. E. Afr., Cyper.: 316, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 46, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: sedges: 50, 1974; Haines & Lye, Sedges & rushes E. Afr.: 173−174, 1983; Berhaut, Fl. ill. Sénégal 9: 204, 1988; Kew Bull. 47: 746, 1992 (as *C. androhibensis*); Thulin, Fl. Somalia 4: 118, 1995; Prasad

& Singh, Sedges Karnataka (India): 120, 2002; Fl. Eth. & Eritrea 6: 440, 1997 (and 1: 265, 2009, in key); Larridon & al. in Bot. J. Linn. Soc. 167: 22, 2011 (photo. in habitat).

syn.: *Sorostachys pulchellus* (R. Br.) Lye; *S. kyllingioides* Steud. (1850 nom. nud.) 1855; *Cyperus sorostachys* Boeckeler 1868, nom. illeg. superfl., based on *S. kyllingioides*; *C. zanzibarensis* C. B. Clarke (1895, nom. nud.), 1901 (cf. Note ref. spelling); *C. androhibensis* D. A. Simpson – Note: "Dr. K. Schumann may be correct, from his great linguistic knowledge, in altering the spelling to Sansibar. I would gladly accept the correction if it would obviate our Indices being afflicted for all time with two words (instead of one), but Dr. Schumann's alteration of a first letter has made me helpless" (Clarke in Fl. Trop. Afr. 8: 324, 1901).

Perennial herb sometimes almost rhizomatous; culms tufted, 6−40 cm long, 0,3−1,5 mm ∅, trigonous, base swollen and covered with fibrous remains of old leaf sheaths; leaves to 18,5 cm long; sheaths pale green to pale reddish-brown, basal sheaths darker, 1−3,5 cm long; blades linear, 2−15 cm long, 1,8−4,2 mm wide; inflorescence *white*, of 15−60 spikelets in a very dense globose head 0,7−1,5 cm ∅; spikelets ± ovate, 3−7 mm long, *flattened*.

Bushland, grassland on wet soil; edge of pond; sandy-muddy soil; seasonally wet habitats; 300 (? and less) – 1500 m alt.

C. pulchellus and *Fimbristylis albovirens* dominate and characterise the *Cypereto-Bacopetum hamiltonianae* Vanden Berghen 1990 community, described from E Senegal. A *correction* was published by Müller & Deil in Phytocoenologia 35: 357, 2005, to ***Cypero pulchelli -Bacopetum hamiltonianae*** Vanden Berghen 1990.

Madagascar; India, Philippines, N Australia (general map in Kew Bull. 45: 488, 1990).

Near *C. leucocephalus* Retz. 1788, non Hassk. 1848, from the Indian subcontinent.

Under *C. leucocephalus* above (p. 118) we commented on the use in some floras or flora lists of the names *C. pulchellus* and *C. leucocephalus* (cf. Fl. Trop. E. Afr., Cyper.: 252, 2010; Fl. W. Trop. Afr., ed. 2, 3/2: 292, 1972). However, there seems to be no comment on *C. leucocephalus* Retz. figuring in Rendle, Cat. Welwitsch's Afric. pl. 2/1: 115−116, 1899; plants from Angola: Pungo Andongo and Huilla (not cited by Simpson in Kew Bull. 45: 487−492, 1990). Their identity is uncertain.

C. pulchellus is sometimes confused with *Kyllingiella microcephala* (Steud.) R. W Haines & Lye, with a similar distribution. *C. pulchellus* is recognised by its dirty whitish congested inflorescence and distinctly flattened spikelets. Also confused with *Ascolepis protea*.

In Fl. Trop. E. Afr., Cyper.: 163, 2010, the synonym *C. zambesiensis* C. B. Clarke in Trans. Linn. Soc. London, Bot. 4: 53, 1894, nom. nud., and in Fl. Trop. Afr. 8: 344, 1902, with type Buchanan 647, Malawi, Mt Mlanje, cited under *C. baronii* C. B. Clarke, is given. There seems to be a confusion with *C. glaucophyllus* Boeckeler (See above under that species), and with *C. zanzibarensis* C. B. Clarke.

C. pumilus L. 1756, non Rottb. 1773 – See below under **Pycreus pumilus** (L.) Nees

C. purpureoluteus (Ridl.) Bauters – See below under **Lipocarpha albiceps** Ridl.

C. purpureoviridis Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 208, 2010; Larridon & al. in Bot. J. Linn.

Soc. 167: 25, 2011. – Icon.: Nord. J. Bot. 3: 224, 1983; Haines & Lye, Sedges & rushes E. Afr.: 158, 1983.

Perennial herb to 67 cm tall with a thick creeping rhizome; culms scattered, 33−66 cm long, 1,4−1,8 mm ∅, trigonous; leaves to 40 cm long; sheath reddish-brown, rather wide and baggy, 2−5 cm long; blade linear, flat, 15−36 cm long, 2,8−4 mm wide; inflorescence simple, primary branches 2−5, 3−5 cm long; spikelets in digitate clusters, sessile and at end of primary branches, *purplish-black*, 2−9 per cluster, ± ovoid, 6 mm long.

Forests; also on steep rocky slopes; swampy lake edge; 1700−2050 m alt.

A specimen from Kilimanjaro (T2) is similar but inflorescence rather young.

C. pustulatus Vahl, incl. var. *debilis* Kük., var. *djalonis* A. Chev. ex Kük., but *excl*. var. *tschinsendensis* (Turrill) Kük. (= *C. dereilema*); Mbayngone & al. in Etudes flor. vég. Burkina Faso 9: 35−37, 2005; Akoègninou & al., Fl. analyt. Bénin: 95−96, 2006; Figueiredo & Smith, Pl. Angola: 179, 2008; Lisowski, Fl. Rép. Guinée 1: 397, 2009; Fl. Trop. E. Afr., Cyper.: 157−158, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 47, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 265, 1983; Troupin, Fl. Rwanda 4: 445, 1988; Fl. Eth. & Eritrea 6: 460, 1997; Fl. Gabon 44, Cyper.: 67, 2012.

syn.: *Juncellus pustulatus* (Vahl) C. B. Clarke; *Cyperus barteri* Boeckeler; *Chlorocyperus barteri* (Boeckeler) Rikli; *Pycreus djalonis* A. Chev., nom. nud.

Annual herb 0,3−1 m tall; culms 22−70 cm long, 0,7−2,1 mm ∅, trigonous; leaves to 45 cm long; sheath brown-grey to purplish-red, *2−10 cm long*, blade linear, flat, 13−37 cm long, 1,7−4 mm wide; inflorescence simple, sometimes capitate; when simple primary branches 2−7, 1,8−20 cm long; spikelets in digitate clusters, sessile and at end of primary branches, (1)−3−21 per cluster, ± elliptic, 7−12 mm long, to 25 mm in fruit.

Grassy swamps; muddy bed of stream; edges of pools; often on thin soil over rock; wet flushes in grassland; savannas; sands and clayey sands, bare; rice-fields; salt tolerant; temporary pools on sandstone; gallery forest; 0−1600 m alt.

Cyperus pustulatus community in desiccating rice fields on acid soils (*Cyperetum pustulati* Ataholo 2001 nom. invalid.) – See Müller & Deil in Phytocoenologia 35: 370, 2005; ephemeral vegetation of seasonal and semi-permanent ponds in W Africa.

Recognised by its 2-branched style and flattened nutlet. Sometimes confused with *Pycreus* species.

C. recurvispicatus Lye – See below under **Mariscus recurvispicatus** (Lye) J.-P. Lebrun & Stork, comb. nov.

C. reduncus Hochst. ex Boeckeler; Akoègninou & al., Fl. analyt. Bénin: 96, 2006; Lisowski, Fl. Rép. Guinée 1: 397−398, 2009; Fl. Trop. E. Afr., Cyper.: 217, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 221, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 47, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 46, 1974; Haines & Lye, Sedges & rushes E. Afr.: 160, 1983; Berhaut, Fl. ill. Sénégal 9: 207−208, 1988; Fl. Eth. & Eritrea 6: 437, 1997.

syn.: *C. aristatus* Hook. f. & Thomson ex C. B. Clarke 1884, nom. illeg., non Rottb. 1773.

Annual herb to 35 cm tall; culms tufted, 3,5−35 cm long, 0,8−2,2 mm ∅, trigonous; leaves to 36 cm long; sheath green to pale brown, 1,5−6 cm long; blade linear, flat, 7−30 cm long, 2 mm wide; inflorescence simple to compound, primary branches 4−8, 2−8,5 cm long; spikelets in laxly sub-digitate clusters, sessile and at end of primary and secondary branches, 3−10 per cluster, 5−12 mm long, with spreading glumes.

Wet areas; seasonally flooded grasslands; swamps; pools; rice fields; gallery forest; clayey-sandy river sides; 700 (? and less) – 1600 m alt. – In plant community *Sagittario guyanensis-Nymphaeion maculatae* (seasonal lakes, Burkina Faso; Müller in Syst. Geogr. Pl. 75: 244, 2005).

Widespread in Africa, but uncommon. Reported from cultivation by Pires de Lima, Bol. Soc. Brot., Sér. 2, 2: 128, 1923, from NE Mozambique, near Palma (10°48'S × 40°29'E).

C. remotispicatus S. S. Hooper; Lowe & Stanfield, Fl. Nigeria: Sedges: 52, 1974; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 47, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017). – Icon.: Berhaut, Fl. ill. Sénégal 9: 209, 1988.

Annual tufted herb; culms 10−30 cm tall, 1−2,5 mm ∅, trigonous, angles sharp; leaves usually reduced to sheaths; inflorescence compound with ± lanceolate solitary spikelets at end of branches; spikelets 5−9 mm long, *greenish* and *remaining narrow at maturity*; glumes green, staying erect, and not moving aside when the nutlets are ripe; resembling *C. tenuispica* that has, however, a diffuse inflorescence with long branches and neat elliptical spikelets 2−3 together, and spreading glumes at maturity.

Sandy low-lying ground of old cultivation; fallows; waste land; flooded depressions; damp places on disturbed ground; rice fields.

Not figuring in Flore du Gabon 44, Cyperaceae, 2012.

(**C. remotus** (C. B. Clarke) Kük.); Fl. Trop. Afr. 8: 382, 1901 (under *Mariscus*); Engler, Pflanzenreich IV. 20/101: 561, 1936; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015.

bas.: *Mariscus remotus* C. B. Clarke (cf. under that name below p. 268).

Perennial herb; culms 16−32 cm tall, slender, trigonous above, thickened by leaf-sheaths; leaves 2/3 the length of culms, c. 1,5 mm wide; inflorescence a globose anthela 8 mm ∅, of 30−40 golden-yellow spikelets; spikelets 2-flowered; glumes very remote on the rhachilla; *ripe fruit* unknown: "the acuminate nut is not like *Mariscus*: the genus of this plant is thus not certain" (Fl. Trop. Afr., l.c.).

Dry grassland, bushland; woodland.

Type not seen for the treatment in Fl. Trop. E. Afr. (l.c.). *C. remotus* "is possibly conspecific with (*C. boreochrysocephalus* Lye =) *Mariscus boreochrysocephalus*." Our map of the latter species (p. 257) also includes the distribution (S Zaire) of *Mariscus* (*Cyperus*) *remotus*.

C. renschii Boeckeler, incl. var. *scabridus* Lye; Jaeger & Adam, Végét. vascul. Mts Loma 2: 220, 1981; Cable & Cheek, Pl. Mt Cameroon: 155, 1998; Simpson & Inglis in Kew Bull. 56: 304−305, 2001; Harvey & al., Pl. Bali Ngemba…: 136, 2004; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Engler, Pflanzenwelt IV. 20/101: 207, 1936; Haines & Lye, Sedges & rushes E. Afr.: 162, 1983 (incl. var. *scabrida*); Fl. Trop. E. Afr., Cyper.: 248, 2010; Fl. Gabon 44, Cyper.: 105, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 354, 2014.

syn.: *C. deremensis* K. Schum.; *C. ochrocarpus* K. Schum.; *C. sylvicola* Ridl.; *C. hylaeus* Ridl.

"A gigantic plant, with very sharp cutting edge and keel to the leaves" (Rendle, Cat. Welwitsch's pl. 2/1: 113, 1899). – Perennial herb 0,7−2 m tall; rhizome woody, 1−1,5 cm ∅; culms tufted, 70−83 cm long, 4−8 mm ∅, trigonous to slightly triquetrous; leaves many, to 1,4 m long; sheath reddish-purple near base, 3−13 cm long; blade 0,68−1,3 m long, 1−3 cm wide; inflorescence compound, large, spreading, 20−30 cm ∅, with primary, secondary and tertiary branching, primary branches few to many, 3,5−18 cm long; bracts leaf-like, 7−9, 40−90 cm long, 1−3 cm wide; spikelets in small crowded clusters, at end of secondary and tertiary branches, 3−9 per cluster, ovoid, dark, 1,5−3,5 mm long; apex of glumes recurved, mucronate.

Forests; forest swamps; along forest streams; occasionally in grassland or roadsides; secondary forest; gallery forest; cultivation edges; doleritic crevices, grassy corridors in escarpments of forest gallery on mountain slopes; thalweg with *Cyathea manniana*; 0−2320 m alt.

Bioko/Fernando Poo; Comoro Isl.

Similar to *C. laxus* but much bigger and with smaller spikelets.

C. rheophyticus Lye – See below under **Kyllinga rheophytica** (Lye) J.-P. Lebrun & Stork, comb. nov.

C. rhizomafragilis (Lye) Lye – See below under **Kyllinga rhizomafragilis** Lye

C. rhynchosporoides Kük. based on *Rhynchospora ochrocephala* Boeckeler 1879, non *Cyperus ochrocephalus* C. B. Clarke 1894 (= *C. angolensis*) nec *C. ochrocephalus* Steud. 1842 (= *C. eragrostis)* – See below at end of **Mariscus** as **C. rhynchosporoides** Kük.; it is perhaps a true **Mariscus**: p. 276.

C. richardii Steud. – See below under **Kyllinga bulbosa** P. Beauv.

C. *ridleyi* Mattf. & Kük. – See below under **Kyllinga pauciflora** Ridl.

C. rigidifolius Steud., incl. var. *intercedens* Kük.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 229, 1955; Gordon-Gray, Cyper. Natal: 67, 1995; Simpson & Inglis in Kew Bull. 56: 305, 2001; Puff & Sileshi, Pl. Simen: 241, 2005; Fl. Trop. E. Afr., Cyper.: 165−166, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 186, 1983; Fl. Eth. & Eritrea 6: 448, 1997; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 95, 2001.

syn.: *C. adoensis* Hochst. ex A. Rich.; *C. longus* L. var. *adoensis* (Hochst. ex A. Rich.) Boeckeler

Perennial herb with woody base and curving horizontal stolons to 15 cm long, 1,5−3 mm ∅; culms few, 5 cm – 1 m long, 0,7−4,4 mm ∅, trigonous, sometimes almost triquetrous; leaves to 35 cm long; sheath green to pale brown, 3−10 cm long; blade flat, 7−28 cm long, 1,5−5 mm wide; inflorescence capitate or a simple and compact anthela, primary branches 0−6, 0−11 cm long; spikelets blackish, in crowded digitate spikes, erect, sessile and at end of primary branches, 5−10 spikelets per spike, lanceolate, 7−18 mm long; glumes nearly black.

Seasonally wet grassland; swamps; bushland; fallows; meadows; forest gallery; forests; cultivations; near roads and other disturbed areas; grassy clearing in forest; sometimes a weed in lawns, disturbed grassland, crops, gardens, pastures; 1400−3100 m alt.

S. Africa, Lesotho, Swaziland; Arabia, Yemen (Wood, Handbook Yemen flora: 326, 1997).

Similar to and sometimes confused with *C. rotundus*.

C. robinsonianus (Mtot.) Lye, non *C. robinsonii* Podlech – See below under **Kyllinga robinsoniana** Mtot.

C. robinsonii Podlech, non *C. robinsonianus* (Mtot.) Lye (= *Kyllinga robinsoniana* Mtot.).

Herb with shortly creeping woody rhizome; culms 80−85 cm tall, trigonous, base swollen; leaves shorter than culm, 2,5−3 mm wide, sheaths long; inflorescence a simple anthela, much spreading, branches very unequal in length, 0,5−16 cm long; spikes oblong, each of 2−8 spikelets; spikelets erect or obliquely spreading, linear-lanceolate, 10−13 mm long, 3 mm wide, flattened, 8−12-flowered; glumes subdensely imbricate, ovate, obtuse, 3,5−4 mm long, 7−11-veined, pale brown, margins hyaline, white, keel pale green, shortly mucronate; stamens 3; style long, with 3 long branches; nutlet 2 mm long, obovate, triquetrous, brown, sides concave, surface densely minutely pitted.

Ecology not recorded.

? Known only from the type collected in 1959 (Robinson 3243).

C. rohlfsii Boeckeler – See below under **Mariscus rohlfsii** (Boeckeler) C. B. Clarke

C. rotundus L. 1753, non Kunth 1837 p.p. (= *C. bulbosus*), incl. subsp. *divaricatus* Lye, subsp. *merkeri* (C. B. Clarke) Kük., subsp. *retzii* (Nees) Kük., and subsp. *tuberosus* (Rottb.) Kük., etc., and incl. var. *nubicus* (C. B. Clarke) Kük., var. *platystachys* Bojer ex C. B. Clarke, var. *spadiceus* Boeckeler, var. *taylorii* (C. B. Clarke) Kük., etc.; but *excl*. var. *fenzelianus* (Steud.) El-Hadidi (= *C. longus* subsp. *longus*, and some varieties; for further synonyms See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. – "Nut grass" – Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 229−230, 1955; Wickens, Jebel Marra in Kew Bull., Add. Ser. 5: 162, 1976; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 621−622, 1985; Gordon-Gray, Cyper. Natal: 67−68, 1995; Simpson & Inglis in Kew Bull. 56: 305−307, 2001 (with subspp.); Naczi & Ford, Sedges: uses…: 5, 6, 15, 18−26, 35−36, 73, 88, 2008; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 118, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 47, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Velayos & al. Fl. Guinea Ecuat. 11: 104, 2014; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 109, 1935; Kirkia 2: pl. 9 (p. 56−57), 1961; Haines & Lye, Sedges & rushes E. Afr.: 187−188, 1983; Candollea 36: 450, 456−457, 1981 (*C. tuberosus*); Troupin, Fl. Rwanda 4: 445, 1988; Thulin, Fl. Somalia 4: 123, 1995 (*C. rotundus* subsp. *divaricatus*; text incl. *C. nubicus*); Fl. Eth. & Eritrea 6: 449, 1997; Bajpai & al. in Phytomorphology 53: 118, 2003 (fruit morphology); Boulos, Fl. Egypt 4: 384, 2005; Akoègninou & al., Fl. analyt. Bénin: 96, 2006; Fl. Trop. E. Afr., Cyper.: 212, 2010; Fl. Gabon 44, Cyper.: 67, 2012; Fl. China, Ill. 23: 310, 2012.

syn.: *Chlorocyperus rotundus* (L.) Palla; *Pycreus rotundus* (L.) Hayek; *Schoenus tuberosus* Burm. f.; *Cyperus tuberosus* Rottb. (1772), 1773, non Pursh 1813 (= *C. esculentus*); *C. tetrastachyos* Desf.; *C. rotundus* var. *tetrastachyos* (Desf.)

Trab.; *C. comosus* Sm.; *C. rotundus* var. *comosus* (Sm.) Nyman; *C. rotundus* subsp. *comosus* (Sm.) K. Richt.; *C. retzii* Nees; *C. longus* Boeckeler 1880, nom. illeg., non L. 1753 (= *C. longus*); *C. nubicus* C. B. Clarke; *C. taylorii* C. B. Clarke; *C. merkeri* C. B. Clarke; *C. polystachys* Cherm. 1922; See also above under the introduction, and further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial or sometimes seemingly annual herb 0,1−1 m tall, gregarious but not clump-forming; roots with white nut-like nodules turning brown; culms few, somewhat swollen at base, arising from rather thick scale-covered stolons; culms green, 1−3 mm ∅, triangular; leaves glossy green; sheath green to reddish-brown; blade linear, 10−40 cm long, 2−8 mm wide, ± M-shaped in cross-section; inflorescence a simple or compound anthela, primary branches 1−8, 0,5−12 cm long; spikelets in rather dense clusters, 3−15 per cluster, bright to golden to dark brown, ± lanceolate, ± flattened, 6−70 mm long.

Swamps; damp sites; riverbanks; drainage lines in coastal bush or forest glades; seasonally wet grassland; clay; sandy well drained soils; fallow fields; forest gallery; also dry places; margins of springs and streams; depression in wadi; temporarily inundated sites (Etudes flor. veg. Burkina Faso 9: 35, 38, 2005); inselbergs (Bois Forêts Trop. 325/3: 26, 2015); weed of cultivations, rice and maize fields (e.g. H. Krähmer, ed., Atlas of weed mapping: 75−76, 78, 2016, with maps; E. Weber, Invasive plant species of the world, ed. 2: 13−14, 2017, with map); 0−2840 m alt.

Very variable species, particularly as regards the colour and size of the glumes. A great number of subspecies and varieties have been described (cf. Fl. Trop. E. Afr., Cyper.: 213−214, 2010). The extremes are distinct, but there are more intermediate specimens than there are extreme ones. There are no constant qualitative characters separating the taxa, and hardly any convincing quantitative ones either geographically and habitat-wise; there are no differences. – Musili & al., Taxonomic studies of the Cyperus rotundus complex (Cyperaceae) in East Africa. In Burgt & al., Systematics and conservation of African Plants: 67−74, Roy. Bot. Gard., Kew. They give a key to four varieties in E. Africa, viz. var. *rotundus*, var. *merkeri*, var. *tuberosus*, and var. *taylorii*. It is based on length and colour of glumes, and form of midrib of glumes, and colour of nutlets [varieties ined.].

Tropical and subtropical areas of all continents, also in temperate regions. – Madeira, Canary Islands; Cape Verde Islands (Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 23, 2002; Romeirus & al. in Scripta Bot. Belg. 50: 375, 2013); Annobón; S Europe, Italy (Webbia 72: 129, 2017); N Africa from Morocco to Egypt; N Madagascar and W Indian Ocean Islands; Namibia, S. Africa, Lesotho, Swaziland; Arabia, Yemen (Wood, Handbook Yemen flora: 326, 1997, incl. *C. nubicus*); SW Asia, Middle East, Central Asia, S Asia from India – Sri Lanka through to Indonesia and China, Japan, Philippines, Australia; N., C. & S. America.

Tubers strongly aromatic. Rhizomes are an important part of Chinese herbal medicine (fig. in Naczi & Ford, o.c.: 9).

"*Cyperus rotundus* is the most pestiferous plant in the world. It reproduces and disperses primarily from vegetative tubers, with many biotypes rarely producing viable seeds" (Naczi & Ford, o.c.: 22). – It is one of the world's worst weeds, and the world's most damaging weed. With adverse effect on agriculture. It regenerates from greater soil depths than most annual weeds. Very difficult to eradicate.

Comments on nomenclature: by Longhi-Wagner & al. in Kew Bull. 65: 457, 2010.

C. kwaleensis (from SE Kenya, Kwale, K7) is similar but larger and tussocky and does not produce stolons. *C. endlichii* (from N Tanzania, T 2, 3) is also similar but is smaller and with smaller and narrower spikelets.

C. rubicundus Vahl 1805, non Willd. ex Link 1820 (= *C. rotundus*); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 239, 1955 (as *C. teneriffae*); Raynal in Adansonia, Sér. 2, 17: 45, 1977; Thulin, Fl. Somalia 4: 133, 1995; Gordon-Gray, Cyper. Natal: 68−69, 1995; Clarke & Mannheimer, Cyper. Namibia: 72, 1999 (map); Fl. Trop. E. Afr., Cyper.: 160−161, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 118, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 302, 1936 (as *C. teneriffae*); Nord. J. Bot. 3: 215, 1983; Haines & Lye, Sedges & rushes E. Afr.: 258, 1983; Troupin, Fl. Rwanda 4: 445, 1988; Fl. Eth. & Eritrea 6: 405, 1997; Prasad & Singh, Sedges Karnataka (India): 126, 2002; Chaudhary, Fl. Kingd. Saudi Arabia ill 3: 109, 2001; Fl. Mascareignes 202, Cyper.: 46, 2018.

syn.: *C. teneriffae* Poir., incl. var. *longimucronatus* Kük. and var. *succulentus* Dinter ex Kük.; *C. serra* A. Rich.; *C. delesserianus* Webb & Berthel.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual tussocky herb 5−30 cm tall, with a small root system; culms tufted, trigonous, 3−28 cm long; leaves to 17,5 cm long; sheath 1−4,5 cm long, frequently not enclosing culm base; blade linear, flat, 3−14 cm long, c. 2 mm wide; inflorescence *capitate* with spikelets in digitate clusters, 3−30 per inflorescence, ± lanceolate, squarrose, 5−20 mm long.

Seasonally wet habitats; near temporary pools and swamps; wet grassland; wooded grassland; wet rocks; lava screes and shallow soils on rocks; also on alkaline soils; temporary pool on lateritic slab; 0−2500 m alt.

Namibia, S. Africa, Swaziland; Madagascar; Canary islands; Oman, Saudi Arabia, Yemen (Wood, Handbook Yemen flora: 326−327, 1997); India, Lesser Sunda islands, Australia (Queensland). Not in Puerto Rico. – Disjunct distribution.

C. kaessneri C. B. Clarke is perhaps only a variety of *C. rubicundus*.

Under *C. fontinalis* (Cherm.) Kük. (bas.: *Pycreus fontinalis* Cherm.) – p. 109 above – we discussed the eventual identity of that plant with reference to *Pycreus sanguineosquamatus* Van der Veken (1955) collected at Elisabethville, SE-most Zaire. In the World Checklist of Selected Plant Families, Cyperaceae, *Pycreus sanguineosquamatus* is treated as a synonym of *Cyperus fontinalis*, treated by us below under *Pycreus sanguineosquamatus*. Van der Veken compared his plant with *Pycreus atrorubidus* Nelmes, but also with *Cyperus teneriffae* Poir., a synonym of *C. rubicundus* Vahl. The latter suggestion seems plausible. *C. fontinalis* is a plant from Central Madagascar. However, we prefer treating Van der Veken's plant under **Pycreus sanguineosquamatus** below (See p. 300).

C. rubidomontanus (Browning) Larridon – See under **Pycreus rubidomontanus** Browning

C. rukwanus Huygh – See below under **Kyllinga alba-purpurea** Lye

C. rupestris Kunth, incl. var. *parvinux* (C. B. Clarke) Kük. and var. *amnicola* (Kunth) Kük.; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005. – Icon.: Gordon-Gray, Cyperaceae Natal: 70−71, 1995.

syn.: *C. amnicola* Kunth; *C. cognatus* Kunth; *C. parvinux* C. B. Clarke

Perennial densely tufted mat-forming herb, leafy; culms 5−15 cm tall, triquetrous above, thickened at base by dense persistent brown leaf-sheaths becoming fibrous (rarely in var. *amnicola*); leaf-blades stiff or wiry, often as long as culms, linear, ± 1 mm wide; inflorescence a *solitary head* of 5−9 blackish-brown, shining, compressed, sessile spikelets c. 1 cm long with coarsely serrate margins.

In shallow soil over rock outcrop; dried up swamp; 750−900 m alt. (300−1800 m in S. Africa).

S. Africa, Botswana, Lesotho, Swaziland; Vietnam. Not in Namibia, fide Archer & Craven, Cyper. Namibia: 21, 2004.

C. ruwenzoriensis (C. B. Clarke) Huygh – See below under **Kyllinga polyphylla** var. **elatior** (Kunth) Kük.

(**C. sahelii** Väre & Kukkonen) – Icon.: Ann. Bot. Fennici 42: 478, 2005.

Rosette-forming *annual* herb 5−60 cm tall; roots tomentose with sand grains affixed to root hairs; culms erect, terete, 1−2 mm ∅, with soft basal leaf-sheaths; leaves 5−35 cm long, 1−2 mm wide, channelled; inflorescence an anthela 6−8 cm long, 4−5 cm ∅, with a cluster of 8−18 spikes; spikelets ovoid, 10−25 × 4 mm, glumes distichous.

Dunes at desert margins.

Distribution area: Sahel, from Mali to Niger and Chad.

Said to be near *C. ephemerus* Kukkonen & Väre (described from Iran), but nutlet not winged; and also *C. forsskalii* A. Dietr. (= *C. fuscus* L.) but inflorescence compound. *C. fuscus* does not occur in tropical Africa.

C. sahelii is probably an annual form of **C. conglomeratus**, and is mapped by us together with that species (p. 105).

C. sanguinolentus Vahl – See below under **Pycreus sanguinolentus** (Vahl) Nees ex C. B. Clarke

C. scabricaulis Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Fl. Somalia 4: 128, 1995; Nord. J. Bot. 16: 370, 1996.

Somewhat tussocky perennial herb with a few crowded culms with swollen bases from a very short woody rhizome; culms 10−30 cm long, 1−2 mm ∅, terete to obtusely triangular, *minutely or prominently scabrid* at least on some ridges; leaves from the lower 1−6 cm, c. 5−8 per culm; lower sheaths brown, sometimes splitting into fibres; blades 5−20 cm long, 2−3 mm wide; inflorescence a dense head of crowded spikelets 2−2,5 cm ∅, or more commonly a single dense head of spikelets and 1−7 additional stalked heads of spikelets; spikelets ovate, acute at apex, compressed, 7−9 mm long, 15−20-flowered.

Sand dunes near the coast; 0−140 m alt.

C. scaettae (Cherm.) Reynders – See below under **Pycreus scaettae** Cherm.

C. schimperianus Steud., incl. var. *minor* Boeckeler; Fl. Trop. E. Afr., Cyper.: 241−242, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 184, 1983; Fl. Eth. & Eritrea 6: 447, 1997; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 94, 2001; Boulos, Fl. Egypt 4: 381, 2005.

syn.: *C. truncatus* A. Rich. 1850, non Turcz. 1838; *C. amblyleptos* Steud.; *C. elongatus* Hochst. ex C. B. Clarke 1884, nom. illeg., non Steud. 1854 [= *C. intactus* Vahl (S. Africa), nec. Lej. ex Nees 1834, nom. inval. (= *C. longus* subsp. *longus*), nec Sieber ex Kunth 1837 (= *C. rotundus*)]; *C. nudiculmis* Sieber ex C. B. Clarke; *C. tegetum* C. B. Clarke 1884, nom. illeg., non Roxb. 1820 (1832); *C. tegetum* var. *protracta* C. B. Clarke

Perennial herb to c. 1 m tall with a woody rhizome 0,5−1 cm ∅ covered by brown to blackish scales; culms 56−94 cm long, 2−4 mm ∅, trigonous, sometimes rounded near apex; leaves to 30 cm long; sheath 10−21cm long, wide, loose; *blade* linear, flat, *4−10 cm long*, 1,5−3 mm wide; inflorescence simple, primary branches 4−9, 2−9 cm long; spikelets in loose clusters at end of primary branches, 6−14 per cluster, ± lanceolate, 10−22 mm long.

Sandy or stony river banks; near or in water; seasonal swamps; 450−2600 m alt.

Egypt; Saudi Arabia.

Easily recognised by its wide leaf sheaths and short blades.

C. schinzii Boeckeler; Clarke in Fl. Trop. E. Afr. 8: 335, 1901 (as a synonym under *C. apricus* Ridl.); Engler, Pflanzenreich IV. 20/101: 301, 1936 [under *C. semitrifidus* Schrader var. *apricus* (Ridl.) Kük.; bas.: *C. apricus* Ridl.; with syn. *C. purpureus* Boeckeler]; as *C. schinzi* Boeckeler in Clarke & Mannheimer, Cyper. Namibia: 39, 72 map, 1999; Archer & Craven, Cyper. Namibia: 21, 2004 (with synonyms *C. holostigma* Schweinf., *C. purpureus* Boeckeler); as *C. schinzii* by Figueiredo & al. from Amboland, on the Angola-Namibia border (17°08'S) collection by August Wulfhorst (1861−1936) in 1898. – Under *C. holostigma* C. B. Clarke ex Schweinf. above (p. 112) a note refers to a figure in Proc. Rhodesia Sci. Assoc. 33: 63, 1934, which may represent *C. schinzii*. – Icon.: Clarke & Mannheimer, o.c.: 41, fig. 12.

syn.: *C. purpureus* Boeckeler

Description from Verh. Bot. Vereins Prov. Brandenburg 29: 45, 1888, abridged:

Herb with numerous thin roots; culms (densely) tufted, erect, 5−8−18 cm tall, covered at the bulbous base with dark brown fibres; leaves few, 2,5−5−13 cm long, margins denticulate; sheath short; inflorescence a solitary anthela, primary branches 2−5, to 2,5 cm long; spikelets 1−8 to a spike, (See below), dark blood-red, compressed, 7−10−12 mm long, 16−22−28-flowered.

Ecology not recorded; at Olukonda, Amboland.

Namibia, Botswana, S. Africa.

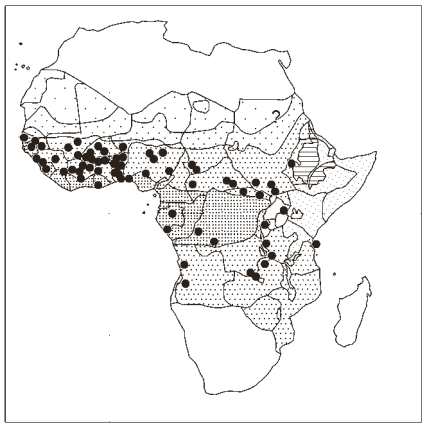
According to Clarke in Fl. Trop. Afr. 8, l.c., *C. purpureus* has 4 spikes, *C. schinzii* 1 spike.

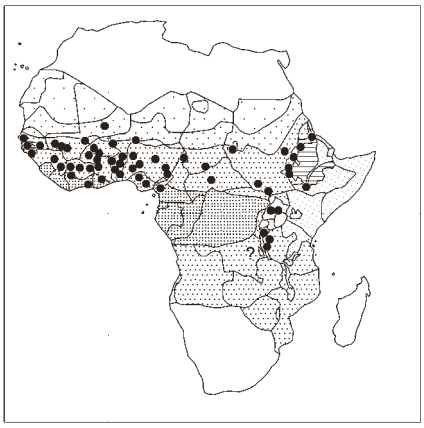
C. schweinfurthii (Chiov.) Kük., non *C. schweinfurthianus* Boeckeler (= *C. tenuiculmis* var. *schweinfurthianus*) – See below under **Mariscus schweinfurthii** Chiov.

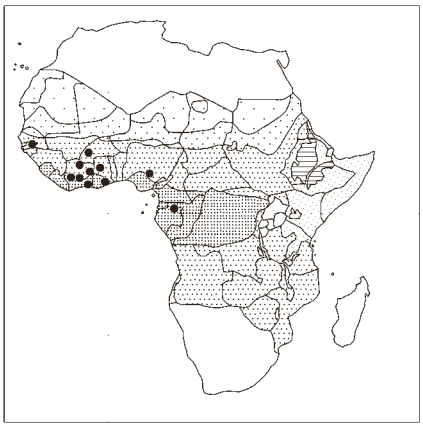
C. scleropodus Chiov. – See below under **Mariscus scleropodus** (Chiov.) Cufod.

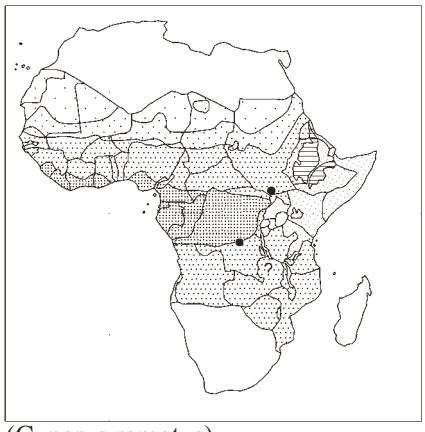
Cyperus scott-elliotii Govaerts nom. nov., Skvortsovía 4(3): 90, 2018. See below under **Kyllinga nervosa** subsp. **flava** (C.B. Clarke) Lye

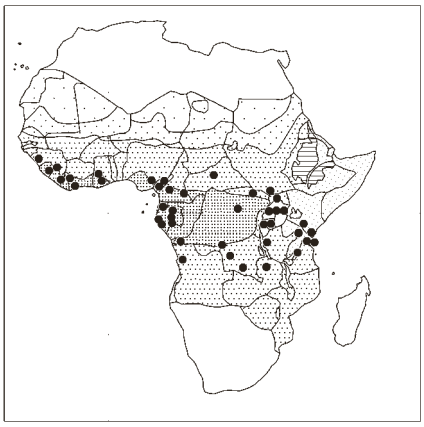
C. semitrifidus Schrad., incl. var. *apricus* (Ridl.) Kük. (excl. syn. *C. schinzii* Boeckeler and *C. purpureus* Boeckeler), var. *multiglumis* (Turrill) Kük., and var. *sanguinolentus* (Nees) Kük., and var. *minor* Boeckeler; Gordon-Gray, Cyper. Natal: 72, 1995; Figueiredo & Smith, Pl. Angola: 179, 2008. – Icon.: Engler, Pflanzenreich IV. 20/101: 302, 1936; Lucas & Pike, Wild flowers of the Witwatersrand: 5, 1971; Pooley, Field guide wild flowers Kwazula-Natal: 563, 1998 (with map).

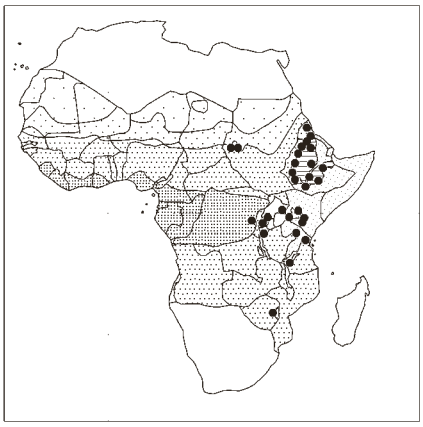

Cyperus pustulatus

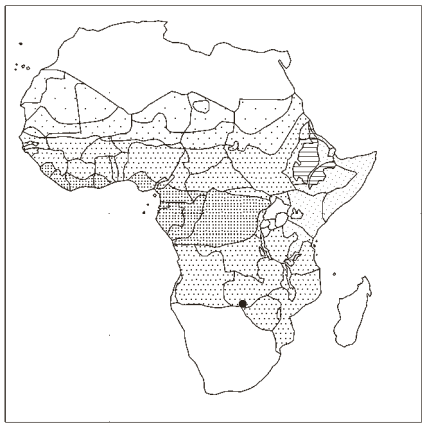

Cyperus reduncus

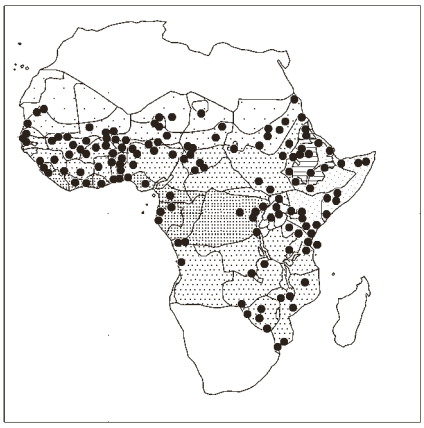

Cyperus remotispicatus

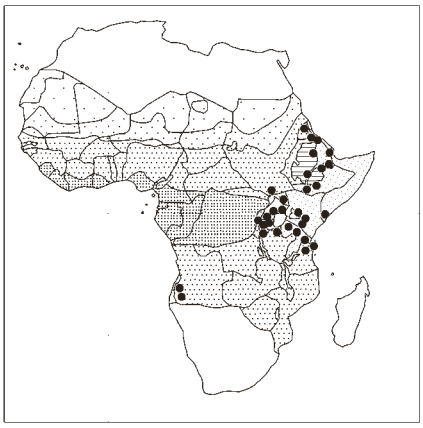

(Cyperus remotus)

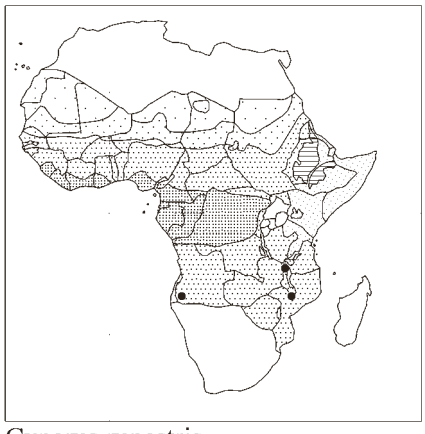

Cyperus renschii

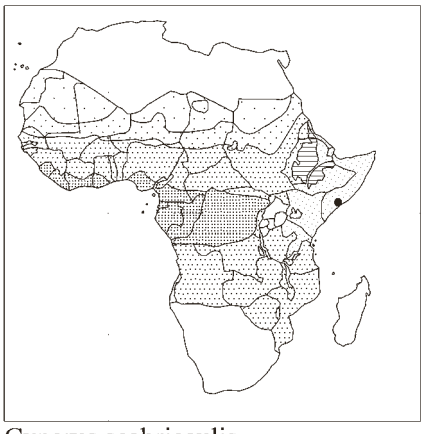

Cyperus rigidifolius

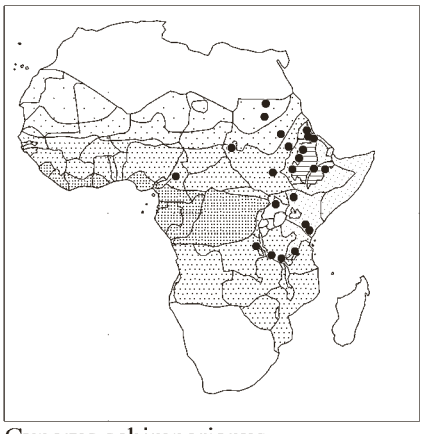

Cyperus robinsonii


Cyperus rotundus


Cyperus rubicundus


Cyperus rupestris


Cyperus scabricaulis


Cyperus schimperianus

syn.: *C. crinitus* Spreng., Flora 12/1, Beil. 5, 1829: err. typ. pro *C. cruentus*, nom. illeg., non Poir. 1804; *C. usitatus* Nees 1832, non Burch. 1824, var. *sanguinolentus* Nees; *C. herbivagus* Kunth; *C. apricus* Ridl.; *C. multiglumis* Turrill; ? *C. lapidicolus* Kük.

Perennial herb with rhizome densely covered with coarse stiff fibres (remains of scales); culms 5−30 cm tall, trigonous at top, base surrounded by stiff fibres; leaves c. 25 cm long, 1−4 mm wide; inflorescence an umbel with 1−4 rays to 3,7 cm long, often very short, or inflorescence contracted into 1 head; spikelets 3−12 per spike, subdigitate, brown-red.

Sunny places on rocks with *Actinopteris flabellata*.

Extremely variable; in need of detailed study (fide Gordon-Gray, l.c.).

S. Africa, Swaziland, Lesotho.

C. *senegalensis* (C. B. Clarke) Mattf. & Kük. 1936, non C. B. Clarke 1894, nom. nud. (= *C. conglomeratus* subsp. *conglomeratus*) – See below under **Kyllinga polyphylla** Willd. ex Kunth

C. serratangulus (Peter & Kük.) Huygh, Phytotaxa 166: 40, 2014. – See below under **Kyllinga serratangula** (Peter & Kük.) comb. ined.

C. sesquiflorus (Torr.) Mattf. & Kük. – See below under **Kyllinga odorata** Vahl

C. sexangularis Nees; Gordon-Gray, Cyper. Natal: 72−73, 1995; Simpson & Inglis in Kew Bull. 56: 308, 2001; Naczi & Ford, Sedges: uses…: 6, 27, 38, 73, 2008. – Icon.: Engler, Pflanzenreich IV. 20/101: 192, 1936.

syn.: *C. webbianus* Steud.

Perennial herb with a short woody rhizome; culms 30−90 cm tall, *subequally hexagonal* at top; leaf blades absent, but with brown sheaths at culm base; inflorescence a compound anthela of many branches and subtended by 8−12 leaf-like green bracts 3−8 mm wide, much longer than anthela. Otherwise similar to *C. alternifolius* subsp. *flabelliformis*.

Margins of rivers; wet places; swampy meadow on flat river bank; can survive under drier conditions.

Namibia, S. Africa, Swaziland.

Ornamental in water gardens. Has been planted in paddy fields (S. Africa); used for craftwork: to make a wide range of products, incl. sleeping and work mats, traditional house construction, baskets, etc.

C. simpsonii (Muasya) Larridon – See below under **Kyllingiella simpsonii** Muasya

C. smithianus Ridl. – See below under **Pycreus smithianus** (Ridl.) C. B. Clarke, and also under **P. fluminalis** (Ridl.) Rendle

C. somalidunensis Lye – See below under **Mariscus somalidunensis** (Lye) J.-P. Lebrun & Stork, comb. nov.

C. somaliensis C. B. Clarke, non *C. somalicus* Gand. (= *C. niveus* var. l*eucocephalus*) nec *Mariscus somaliensis* C. B. Clarke (syn.: *Cyperus pseudosomaliensis* Kük.) – Icon.: Thulin, Fl. Somalia 4: 131, 1995.

Tussocky perennial herb with numerous crowded basal leaves and 1-few culms from each tussock; culm 5−20 cm long, 0,5−1 mm ∅, triangular; leaves from the lower 2 cm only; base covered by a very thick layer of brown sheaths; blades 2−10 cm long, 0,4−0,8 mm wide; inflorescence a dense hemispherical head of numerous crowded spikelets; these ± ovate, compressed, 5−7 mm long, 8−12-flowered.

Bare ground in open forest; bare limestone or in gravelly plain; 1200−1400 m alt.

C. songeensis (Lye) Lye – See below under **Kyllinga songeensis** Lye

C. soyauxii Boeckeler – See below under **Mariscus soyauxii** (Boeckeler) C. B Clarke

C. sphacelatus Rottb., excl. var. *tenuior* C. B. Clarke (= *C. zollingeri* Steud.); Rendle, Cat. Welwitsch's Afric. pl. 2/1: 117, 1899; Renier, Fl. Kwango 1: 71, 1948; Simpson & Inglis in Kew Bull. 56: 308, 2001; Akoègninou & al., Fl. analyt. Bénin: 97, 2006; Naczi & Ford, Sedges: uses…: 40−41, 73, 89, 2008; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Fl. Trop. E. Afr., Cyper.: 218, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 111, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 47, 2012 (map by Schmidt & al. in Phytotaxa 304: 78, 2017); Marshall & Hawthorne, Checklist north. Nimba County, Liberia: 431, 2013; Velayos & al., Fl. Guinea Ecuat. 11: 104−105, 2014. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 195, 1983; Berhaut, Fl. ill. Sénégal 9: 211−212, 1988; Fl. Gabon 44, Cyper.: 69, 2012.

syn.: *C. locuples* C. B. Clarke; *C. pustulatus* Ridl., non Vahl; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb to 61 cm tall with slightly swollen stem base; culms 27−50 cm long, 1,1−1,8 mm ∅, trigonous; leaves to 29 cm long; sheath 2,5−5 cm long; blade 10−24 cm long, 1,6−3,1 mm wide; inflorescence simple, primary branches 3−5, 2,5−12,5 cm long; spikelets in loose clusters on an elongated axis, sessile and at end of primary (sometimes secondary) branches, 7−20 spikelets per cluster, linear, 11−23 mm long, green, tinged brown-red.

Lake margins; swampy ground; sandy flooded ground; river banks; seasonally inundated places; rice fields; not far from the ocean, almost damped by the sea-water; beaches; grassy places; shallow soil over rock; open grassland; disturbed places, roadsides, fallows, cultivations, waste land; 0−1300 m alt.

Bioko/Fernando Poo, Annobón; Madagascar; tropical and subtropical regions; introduced: Sri Lanka, Malaysia, N Australia (Queensland); Tahiti, C. & S. America, Carribean.

Much resembling *C. dilatatus*.

C. sphaerocephalus Vahl, excl. var. *leucocephalus* Kunth (= *C. niveus* var. *leucocephalus*); Engler, Pflanzenreich IV. 20/101: 287, 1936 (as *C. obtusiflorus* var. *flavissimus*); Haines & Lye, Sedges & rushes E. Afr.: 257, 1983 (as *C. niveus* var. *flavissimus*); Thulin, Fl. Somalia 4: 130, 1995 (idem); Gordon-Gray, Cyper. Natal: 73, 1995; Figueiredo & Smith, Pl. Angola: 179, 2008 (as *C. niveus* var. *flavissimus*); Fl. Trop. E. Afr., Cyper.: 149, 2010 (as *C. flavissimus*). – Icon.: Vorster in Flower. Pl. Africa 42: pl. 1666, 1973.

syn.: *C. obtusiflorus* Vahl var. s*phaerocephalus* (Vahl) Kük., and var. *flavissimus* (Schrad.) Boeckeler; *C. compactus* Lam. (non Retz.) var. *flavissimus* (Schrad.) C. B. Clarke; *C. flavissimus* Schrad. 1821, non Steud. 1829 (= *C. denudatus*); *C. niveus* Retz. var. *flavissimus* (Schrad.) Lye

Perennial herb to c. 60 cm tall; culms crowded, 14−56 cm long, c. 1−2 mm ∅, trigonous to rounded with longitudinal grooves, bases swollen and fused into a horizontal rhizome; leaves to 42 cm long; sheath almost black at base, brown on culm, 2,5−5 cm long, at base breaking up into thin fibres; blade linear, flat, 14−37 cm long, 2−4,3 mm wide; inflorescence capitate, with spikelets 4−17, ovoid, 9−19 mm long, 5−10 mm ∅; *glumes bright yellow-orange*; nutlet obovoid, 3-gonous, 2,2−3,3 mm long.

Open woodland, grassland; on sandy soil; drier pastures; open forest; rocky slopes; 1000−2000 m alt.

S. Africa, Swaziland.

Near *C. niveus* but glumes yellow-orange and nutlet much larger (not 1,3−1,8 mm long).

C. sphaerospermus Schrad.; Brenan in Mem. New York Bot. Gard. 9: 96, 1954; Gordon-Gray, Cyper. Natal: 73−74, 1995 (nutlet, photo. p. 74); Clarke & Mannheimer, Cyper. Namibia: 92, 72 (map),1999; Ngwenya in Sabonet News 8/1: 18, 2003; Archer & Craven, Cyper. Namibia: 21, 2004; Figueiredo & Smith, Pl. Angola: 180, 2008. – Icon.: Pooly, Field guide wild flow. Kwazulu-Natal: 505, 1998; Gordon-Gray & al. in S. Afric. J. Bot. 75: 169, 2009 (pseudovivipary); A. & R. Heath, Field guide pl. north. Botswana…: 541, 2009.

syn.: *C. denudatus* L. f. var. *sphaerospermus* (Schrad.) Kük.

Perennial spindly herb to 60 cm tall with compact rhizomatous rooting system; culms sharply triangular, c. 2 mm ∅; *leaves* narrow, grass-like, c. *1/2 the length of culms*, 3−4 mm wide; inflorescence an umbel-like cluster of small dull green spikelets, tinged red, c. 10 cm ∅; bracts longer than inflorescence branches; new plants develop from the axils of one or both of the elongate inflorescence bracts.

Ecology in Mozambique unknown; occurs in S. Africa "scrambling" "among grasses and other plants along streamlets and in seeps where water is either plenty over short periods, or sparse but not wanting for much longer spells"; in damp areas of floodplains; "in almost pure stands in moist alluvium along margins of swamps and streamlets or on damp, grassy banks overhanging water" (Gordon-Gray, l.c., 1995).

Namibia, S. Africa, Botswana, Swaziland.

Resembling *C. denudatus* (with uniseriate rhizome, leaves reduced to sheaths, culms winged, spikelets shining and dark chestnut brown, bracts short).

C. spissiflorus (C. B. Clarke) K. Schum. – See below under **Pycreus spissiflorus** C. B. Clarke – *C. spissiflorus* "C. B. Clarke" sensu Baum 1903 = **Cyperus hensii** C. B. Clarke

C. squarrosus L. – See below under **Mariscus squarrosus** (L.) C. B. Clarke

C. steudneri (Boeckeler) Larridon – *Cyperus spiralis* Larridon, nom. superfl. – See below under **Kyllingiella polyphylla** (A. Rich.) Lye

C. stramineoferrugineus Kük. – See below under **Mariscus stramineoferrugineus** (Kük.) Napper

C. sublaevicarinatus Mattf. & Kük. – See below under **Kyllinga buchananii** C. B. Clarke

C. submicrolepis Kük.; Akoègninou & al., Fl. analyt. Bénin: 97, 2006; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Fl. Trop. E. Afr.,

Cyper.: 192−193, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 79, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 4, 1974; Haines & Lye, Sedges & rushes E. Afr.: 164, 1983; Berhaut, Fl. ill. Sénégal 9: 213, 1988.

syn.: *C. microlepis* Boeckeler 1879, nom. illeg., non Baker 1877.

Annual tufted herb 15−30 cm tall with slightly purplish roots; culms 11−24 cm long, 0,8−1,3 mm ∅, trigonous; leaves 15−30 cm long; sheath green to purplish with a wide transparent margin near throat, 1−6 cm long; blade linear, flat, 7−26 cm long, 1−3 mm wide; inflorescence a simple anthela, primary branches 3−8, 0,2−5 cm long; spikelets in dense digitate clusters, sessile or at end of primary branches, 7−20 per cluster, ovoid, each 2,4−6,3 mm long; glumes c. 1 mm long, spreading, whitish-green, keeled, with *nutlet larger than glumes* and showing when mature, c. 1 mm long.

Seasonally wet habitats, e.g. water-filled rock pool on inselberg; shallow pools and depressions; shallow soil on rocky outcrop; ?-1050−1100 m alt. – Photograph by Porembski & Brown in Candollea 50: 355, 1995 (inselberg, Comoé Natl. Park, Ivory Coast).

Very close to *C. difformis* which is taller (to 67 cm, not 30), has thicker culms (1,4−3,2 mm ∅, not 0,8−1,3 mm), wider leaf blades (2,4−8,3 mm, not 1−3 mm), nutlets only slightly exceeding glumes (not larger than glumes), and keel of glumes winged.

C. subparadoxus Kük. – See above under **Alinula paradoxa** (Cherm.) Goetgh.

C. subsquarrosus (Muhl.) Bauters – See below under **Lipocarpha micrantha** (Vahl) G. C. Tucker

C. subtenax Kük.; Engler, Pflanzenreich IV. 20/101: 258, 1936; Figueiredo & Smith, Pl. Angola: 180, 2008.

Perennial herb with an *elongated thick* woody *rhizome*; culms 20−40 cm tall, *acutely 3-angled*, with hard brown leaf sheaths at base; leaves few, 1/2 the length of the culm, narrow; inflorescence a *globose capitate anthela* 8−10 mm ∅ of numerous sessile spikes; spikelets numerous, linear, 5−6 mm long, 1 mm wide, to 20-flowered; nutlet linear-oblong, trigonous.

Ecology not recorded.

Known only from the type collected in 1906 (Gossweiler 3270).

Near *C. tenax* which has, however, an erect short rhizome; culms ± rounded; a simple or compound obovate-oblong anthela with 1−5 cm long primary branches, and spikelets 3−19 mm long; nutlet obovoid-ellipsoid.

(**C. subtilis** (Kük.) Väre & Kukkonen); Berhaut, Fl. ill. Sénégal 9: 179−180, 1988.

bas.: *C. maritimus* Poiret 1806 var. *subtilis* Kük.

Near *C. crassipes* Vahl, but is a *slender* herb with smaller nutlets (1,8 × 1 mm, not 2,5 × 1 mm).

Sand dunes; Senegal.

A form of **C. crassipes** which has a large distribution in Africa, from the Cape Verde Isl., Senegal through to E. Africa – S. Africa, Angola, and Madagascar. Mapped with **C. crassipes** (p. 105).

C. subtrigonus (C. B. Clarke) Kük. – See below under **Pycreus subtrigonus** C. B. Clarke

CYPERUS

C. subumbellatus Kük. [= *C. cyperoides* (L.) Kuntze] – See below under **Mariscus sumatrensis** (Retz.) J. Raynal

C. sumbawangensis (Hoenselaar) Lye – See below under **Pycreus sumbawangensis** Hoenselaar

(**C. surinamensis** Rottb. 1773 var. **surinamensis**), non Griseb. 1866 (Cuba; synonym) nec Lindm. 1900; Naczi & Ford, Sedges: uses…: 73, 2008; Mesterházy in Lidia 7/5: 103, 2012; Verloove in Webbia 69: 187, 2014 (in key). – Icon.: Fl. Gabon 44, Cyper.: 105−106, 2012.

syn.: *C. compressus* Jacq. 1777, nom. illeg., non L. 1753 nec Krock. 1787 (= *C. fuscus* L.); See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tufted herb with short woody rhizome; culms 15−60 cm tall, 1−5 mm ∅, trigonous, *scabrid* with minute *retrorse prickles*, at least below involucral bracts; leaves only at base of culms; lower leaf sheaths often reddish-brown; blades linear, to 15−40 cm long, 2−5 mm wide; inflorescence a compound anthela, lax, 5−20 × 5−15 cm, with at base a group of spikelets subtended by 3−12 branches each with a group of spikelets, or another group of fasciculate sessile and pedunculate spikelets; main inflorescence branches to 10 cm long; fascicles of spikelets neither in spikes nor digitately arranged but densely grouped together in small irregular heads; involucral bracts 5−10, leaf-like, to 5−30 cm long; spikelets ovate to linear, 4−6 mm long, compressed, whitish, 15−30-flowered; nutlet fusiform, 0,7−0,9 mm long.

Seasonally wet places on inselbergs; wet disturbed sandy soil, spreading along roads (ditches); 0−560 m alt. (Gabon) – 1050 m (Bioko). – Seems to be invasive.

Bioko/Fernando Poo (Velayos & al., Fl. Guinea Ecuat. 11: 105, 2014). – Native to N. America. Widely distributed in the New World, from S. & C. America – Mexico – Caribbean islands – into SE & SC N. America: a common weed.

Easily identified by its retrorsely scabrid culms.

C. tanganyicanus (Kük.) Lye; Fl. Trop. E. Afr., Cyper.: 174, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 260, 1983.

bas.: *C. bellus* Kunth var. *tanganyicanus* Kük.

Perennial herb with minute swollen plant-base, to 20 cm tall; culms tufted, 4−12 cm long, c. 0,5 mm ∅, trigonous; leaves to 13 cm long; sheath pale brown, 1−2 cm long, sometimes breaking up into fibres; blade linear, 4−11 cm long, c. 1 mm wide; involucral bracts 2, leaf-like, lowermost 2−4,5 cm long, the upper shorter; inflorescence capitate with 3−5 spikelets per head; spikelets linear-lanceolate, c. 5−12 mm long, few- to 10-flowered; *glumes 1,9−2,1 mm long*, 0,9−1,1 mm wide, keel greenish, *without pale margin*; nutlet 0,8−1,1 × 0,5−0,8 mm.

Temporarily wet habitats; damp shallow soil over rocks; 850 – c. 1350 m alt.

Near *C. kirkii* with, however, larger glumes (1,9−2,4 × 1−1,3 mm) *with pale margins.*

C. tanyphyllus Ridl. – See below under **Mariscus tanyphyllus** (Ridl.) C. B. Clarke

C. tanzaniae (Lye) Lye – See below under **Kyllinga tanzaniae** Lye

C. tatandaensis Nuasya & D. A. Simpson; Fl. Trop. E. Afr., Cyper.: 178−179, 2010. – Icon.: Kew Bull. 59: 596, 2004.

CYPERUS TATANDAENSIS

Perennial herb to 1 m tall with short rhizome; culms swollen at base, moderately tufted, 77−95 cm long, 1,9−2,8 mm ∅, terete; leaves mostly basal, 1−3 cauline near the base, to 29 cm long; sheath brownish, 2−13 cm long, completely enclosing the culm on cauline leaves; blade flat, 10−16,5 cm long, 6−8 mm wide; inflorescence congested capitate, 1−1,4 × *2−2,5 cm*; spikelets 10−15 per inflorescence, ovoid, 10−15 mm long, flattened.

Brachystegia woodland; 1700−1900 m alt.

Only known from two collections in an area endangered by tree cutting.

Closely related to *C. margaritaceus* but leaves broader and nutlets narrower.

C. tenax Boeckeler, incl. var. *actinostachys* (Welw. ex Ridl.) Kük., var. *andongensis* (Ridl.) Kük., var. *angustissimus* Kük., var. *monroviensis* (Boeckeler) Kük., var. *pseudocastaneus* (Kük.) Kük., and var. *sabulicola* (Ridl.) Kük.; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 111, 1899 (incl. *C. andongensis*); Renier, Fl. Kwango 1: 71, 1948; Gordon-Gray, Cyper. Natal: 74−75, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 72 (map), 1999; Archer & Craven, Cyper. Namibia: 21, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Akoègninou & al., Fl. analyt. Bénin: 97, 2006; Fl. Trop. E. Afr., Cyper.: 203−204, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Mesterházy in Lidia 7/5: 104−105, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 267−268, 1983; Flora 176: 65, 1985; Fl. Gabon 44, Cyper.: 71, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 358, 2014.

syn.: *C. grantii* Boeckeler; *C. monroviensis* Boeckeler; *C. actinostachys* Welw. ex Ridl.; *C. andongensis* Ridl.; *C. boehmii* Boeckeler; *C. sabulicola* Ridl.; *C. amabilis* Vahl var. *pseudocastaneus* Kük.

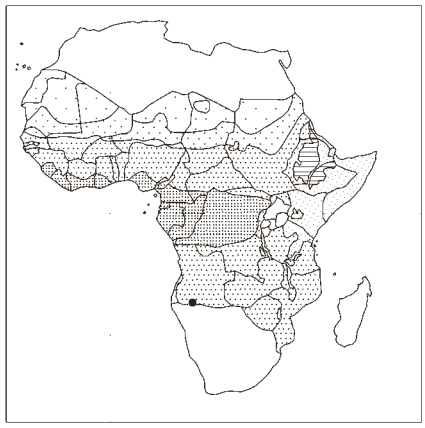
Perennial, densely tufted herb to 73 cm tall, with *erect* rhizome *covered* by *old basal sheaths* and many stiff leaves; culms *tufted*, 5−68 cm long, 0,6−1,8 mm ∅, *rounded*; leaves to 33 cm long; sheath straw-coloured to purple, 1,5−7 cm long; blade linear, flat, 5−30 cm long; 1,1−4 mm wide; inflorescence a simple to compound anthela, primary branches 3−12, 0,5−5 cm long; *spikelets* in digitate clusters, sessile and at end of primary and sometime secondary branches, 5−14 per cluster, *linear, 3−20 mm long*, glumes spreading.

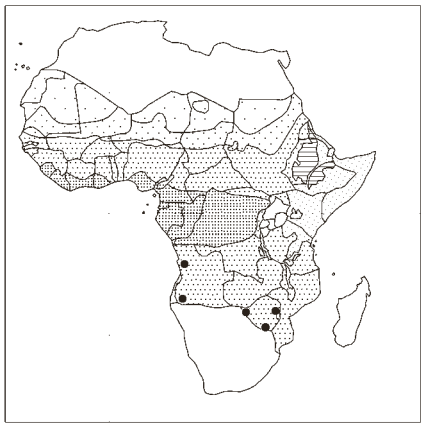
Marshes; seasonally flooded grassland; swampy grassland; mangrove edges; woodland; sandy places; dry pastures; sand dunes along seashore; savannas; in hot sand on river banks; forming great sods on low gravelly hills; 0−1800 m alt. – Fire resistant.

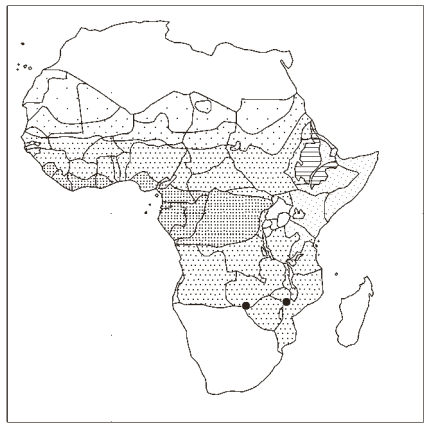
Variable species with 6 varieties described. "Variation in inflorescence from a branching anthela to a compacted head; in glume colour from fawn to mid-brown to deep blackish-red; in spikelet length (3−20 mm)".

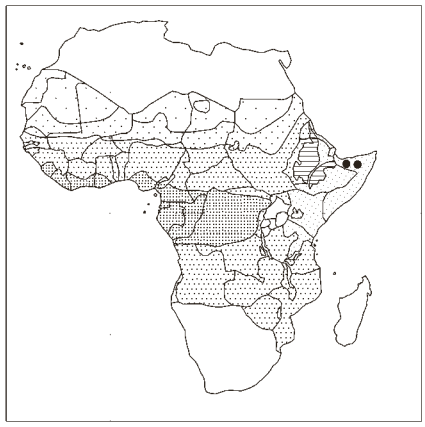
Namibia, S. Africa.

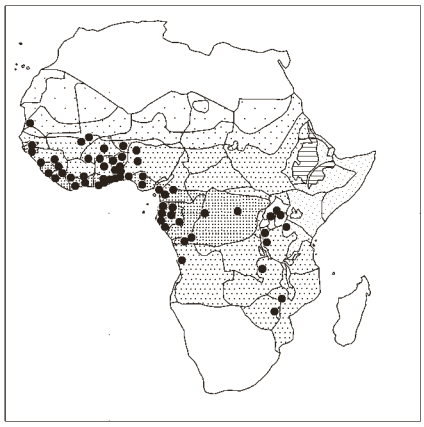
C. tenuiculmis Boeckeler 1870, non Boeckeler 1879 (= *C. dilatatus*); Jaeger & Adam, Végét. vascul. Mts Loma 2: 220, 1981; Simpson & Inglis in Kew Bull. 56: 309, 2001; Prasad & Singh, Sedges Karnataka (India): 129−130, 2002; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Fl. Trop. E. Afr., Cyper.: 242−243, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 112, 2010; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 221−222, 2011; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Lidia 7/5: 104, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 79, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Amer. J. Bot. 39 : 382, 1952 (var. *guineensis*); Lowe & Stanfield,

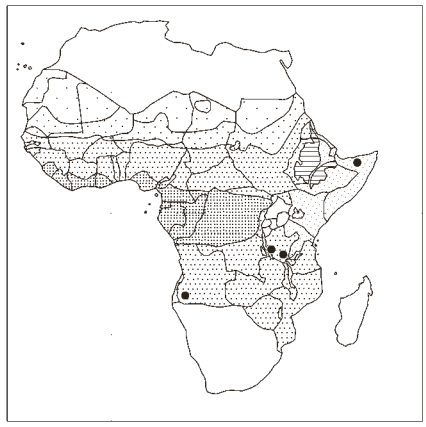

Cyperus schinzii

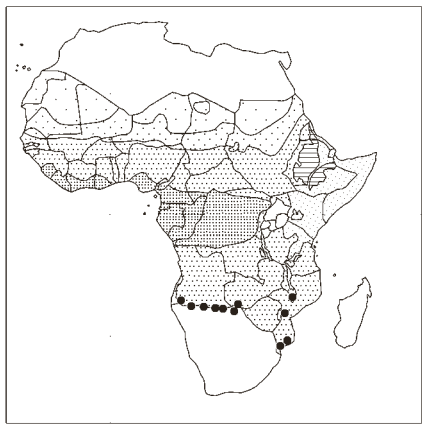

Cyperus semitrifidus

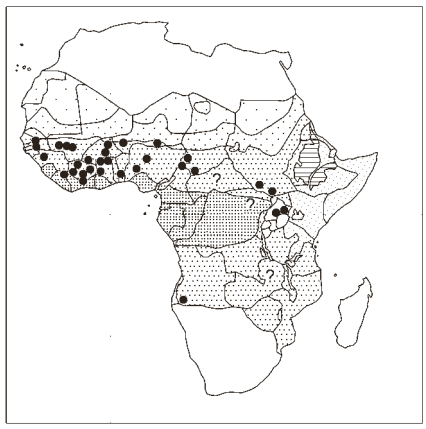

Cyperus sexangularis

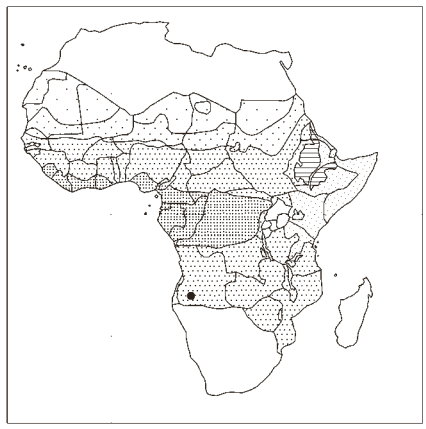

Cyperus somaliensis

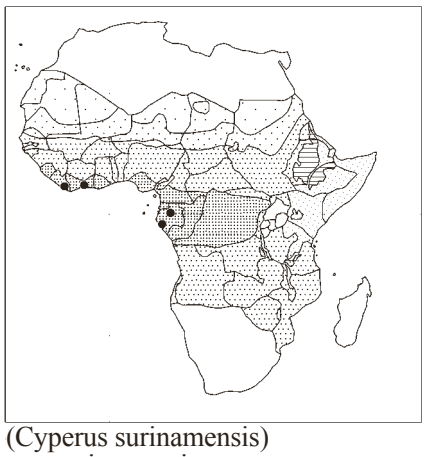

Cyperus sphacelatus

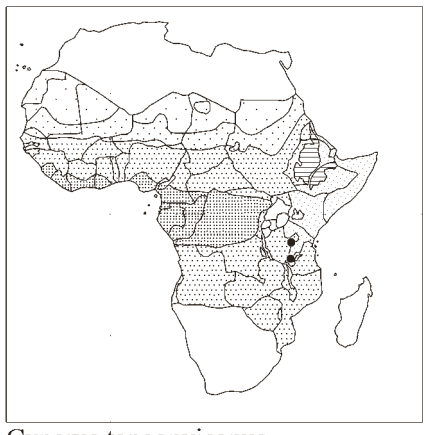

Cyperus sphaerocephalus

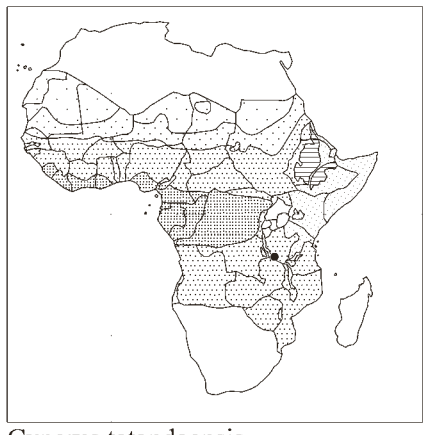

Cyperus sphaerospermus


Cyperus submicrolepis


Cyperus subtenax


(Cyperus surinamensis)
var. surinamensis


Cyperus tanganyicanus


Cyperus tatandaensis

Fl. Nigeria: Sedges: 2, 1974; Haines & Lye, Sedges & rushes E. Afr.: 197, 1983; Berhaut, Fl. ill. Sénégal 9: 214−215, 1988; Akoègninou & al., Fl. analyt. Bénin: 98, 2006; Fl. Gabon 44, Cyper.: 71, 73, 2012; Fl. China, Ill. 23: 312−313, 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper: 359, 2014.

syn.: *C. hemadrii* M. R. Almedia 2009, nom. superfl.; *C. zollingeri* sensu C. B. Clarke in Fl. Trop. Afr. 8: 360, 1901, non Steud.; See further under the varieties.

Perennial herb 0,2−1,5 m tall, with rather thick creeping rhizome; culms with swollen bases, 0,8−5 mm ∅, trigonous to triquetrous; leaves to 65 cm long; sheath green to brown, 2,5−10 cm long; blade sometimes rather stiff, linear, flat, 10−55 cm long, 2,5−11 mm wide, with multiple major veins; inflorescence simple (sometimes compound), primary branches 3−10, 2,5−25 cm long; spikelets in loose clusters at end of primary (sometimes secondary) branches, 2−11 per cluster, ± linear, 15−46 mm long, 6−20-flowered.

Dry or damp grasslands; sandstone under shadow; marshy ground and swamp; seasonally wet grassland; seepage areas; road sides; gardens; fallow fields; drainage ditches; usually on sandy soil; waste ground; savannas; wet flushes on rocks; meadow with *Afrotrilepis pilosa*; rags of dry meadow with *Loudetia arundinacea*; wooded savanna; with *Aeschynomene pulchella* at edge of granitic area; seasonal ponds; riverine forest; rice fields; 0−1900 m alt.

Annobón; S & SE Asia: India, Sri Lanka E-wards to Malaysia, Indonesia, S Japan, Philippines, to N Australia, Pacific islands.

Very variable species, and 3 varieties have been retained, and an inedited subspecies proposed (See below): – var. **tenuiculmis** [syn.: *C. zollingeri* Steud. var. *condensatus* Kük., var. *livingstonii* Kük., and var. *longiramulosus* Kük.; *C. tenuiculmis* var. *longiramulosus* (Kük.) Meneses; ? *C. zollingeri* var. *parvus* C. B. Clarke, cf. below; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew], with culms 0,8−2,2 mm ∅, smooth; leaf blade 3−4,8 mm wide; glumes pale to yellowish-brown, keel not excurrent; widespread in tropical Africa in humid places, S & SE Asia to Australia; – var. **guineensis** (Nelmes) S. S. Hooper [bas.: *C. guineensis* Nelmes], with smooth culms 1,5−1,7 mm ∅; leaf blade 2,5−3,2 mm wide; glumes (dark) reddish-brown, keel excurrent; on waste ground, in tropical W. Africa E to Uganda; – var. **schweinfurthianus** (Boeckeler) S. S. Hooper [bas.: *C. schweinfurthianus* Boeckeler; syn.: *C. zollingeri* var. *schweinfurthianus* (Boeckeler) Kük.], with culms 1,3−5 mm ∅, *scabrid*; leaf blade 2,5−11 mm wide; glumes pale to yellowish-brown, keel excurrent; in dry or damp places, in W & E tropical Africa to Angola.

Note 1: *C. zollingeri* var. *parvus* C. B. Clarke was described on basis of small plants with narrow leaves, and has been regarded as a synonym for **C. tenuiculmis** var. **tenuiculmis**. In Fl. Trop. E. Afr., Cyper.: 195, 2010, however, it is better considered as a synonym for *C. zollingeri*.

Note 2: **C. tenuiculmis** subsp. **mutica** Lye, ined., is proposed by Onana & Cheek, Red Data Book flow. pl. Cameroon: 366, 2011, and later cited by Onana, Vascul. pl. Cameroon…: 161, 2011, and by Onana, Flore du Cameroun 40: 223, 2013. This plant has been collected once in 1998 (Pollard 113); it was found in a roadside ditch at Mt Kupe and there recorded as common, at 880 m alt. The identity of this plant is uncertain.

C. tenuifolius (Steud.) Dandy – See below under **Kyllinga tenuifolia** Steud.

C. tenuis Sw. 1788, non Muhl., 1817 (= *Pycreus polystachyos*) – See below under **Mariscus flabelliformis** Kunth

C. tenuispica Steud.; Thulin, Fl. Somalia 4: 119, 1995; Gordon-Gray, Cyper. Natal: 75, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 72 (map), incl. *C. foliace*us p. 69 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 130−132, 2002; Akoègninou & al., Fl. analyt. Bénin: 98, 2006; Lisowski, Fl. Rép. Guinée 1: 398, 2009; Fl. Trop. E. Afr., Cyper.: 193, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 79, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 246, 1936; Haines & Lye, Sedges & rushes E. Afr.: 167, 1983; Berhaut, Fl. ill. Sénégal 9: 215, 1988; Troupin, Fl. Rwanda 4: 445, 1988; Fl. Eth. & Eritrea 6: 438, 1997; Fl. Pakistan 206, Cyper.: 132, 2001; Fl. China, Ill. 23: 302, 2012.

syn.: *C. leptostachys* Nees; *C. delicatulus* ! Steud.; *C. haspan* (*halpan*) Rottb. 1773, non L. 1753; *C. flavidus* sensu C. B. Clarke in Fl. Trop. Afr. 8: 333, 1901 (and sensu Rendle in Cat. Welwitsch's Afric. Pl. 2/1: 114, 1899), non Retz. 1788 [= *Pycreus flavidus* (Retz.) T. Koyama from S Europe-N Africa, S. Africa, Madagascar, Asia to Japan, E Australia]; *C. haspan* fa. *flavidus* Suringar; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Weak annual herb 5−50 cm tall with a small root system; culms few or several, 10−22 cm long, 0,2−1 mm ∅, trigonous to 6-angular; leaves basal to 19 cm long; sheath pale reddish-brown to dark brown, 1−4,5 cm long; blade flat, flaccid, 6,5−14 cm long, 1,3−8 mm wide; inflorescence simple to compound, primary branches 1−8, 1−9,5 cm long; spikelets in digitate clusters at end of primary branches, 2−6 per cluster, liner-lanceolate, 5−10 mm long.

Sands and clayey sands temporarily humid, sometimes near salt ground; seasonally wet habitats; swamps; rice fields; humid cultivations; grasslands; fallows; damp wooded meadows; here and there on the clay of dried-up ponds; waste land; edges of ponds; hollows in coastal dunes; meadows; humid savannas; near sea-level to 1800 m alt. – "A weedy species of cultivation, especially rice cultivation that may well be overlooked".

Very variable in height, number of culms, size of inflorescence and extent of leaf blade development (often basal leaves reduced to sheaths). Number of stamens (2−3) variable.

Namibia, S. Africa; Seychelles; tropical and subtropical Asia from India – Pakistan – Sri Lanka E-wards to Nepal, China, Malesia, S Japan, Australia. Naturalised in C. & S. America.

Confused with *C. haspan*, *C. foliaceus*. Differs from *C. haspan* in being very short lived and lacking rhizome; from *C. foliaceus* by filiform involucral bracts, in *C. foliaceus* leaf-like, > 4 mm wide.

C. testui (Cherm.) Reynders – See under **Pycreus testui** Cherm.

C. tibialis (Poit. ex Ledeb.) Govaerts – See below under **Kyllinga tibialis** Poit. ex Ledeb. and **K. vaginata** Lam.

C. tisserantii Cherm. 1931, non *C. tisserantioides* (Mtot.) Lye (= *Kyllinga tisserantioides* Mtot.), nec *Fimbristylis tisserantii* Cherm. 1931 [= *Bulbostylis viridecarinata* (De Wild.) Goetgh.] – See above under **Cyperus niveus** Retz. var. **tisserantii** (Cherm.) Lye

C. tisserantioides (Mtot.) Lye – See below under **Kyllinga tisserantioides** Mtot.

C. tomaiophyllus K. Schum. – See below under **Mariscus tomaiophyllus** (K. Schum.) C. B. Clarke

C. tonkinensis C. B. Clarke var. **baikiei** (C. B. Clarke ex Kük.) S. S. Hooper; Lowe & Stanfield, Fl. Nigeria: Sedges: 56, 1974; Akoègninou & al., Fl. analyt. Bénin: 99, 2006; Steentoft, Flowering plants W. Africa: 318, 2008; Lisowski, Fl. Rép. Guinée 1: 398−399, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Kuetegue & al. in Phytokeys 121: 93, 88 (map), 2019. – Icon.: Engler, Pflanzenreich IV. 20/101: 143, 1935 (as *C. baikiei*); Berhaut, Fl. ill. Sénégal 9: 216, 1988.

bas.: *C. baikiei* C. B. Clarke

syn.: *C. kottensis* Cherm.

Perennial tufted herb with a knotted mass of pseudobulbous, swollen culm-bases; culms 10−20 cm long, 1,5−2,5 mm ∅, obtusely trigonous; leaves basal; sheaths brown-purple, becoming fibrous; blades erect, coriaceous, 10−15 cm long, 2,5 mm wide; inflorescence a compound anthela, 2−3 cm ∅, c. 8 cm long, narrow in outline; primary branches 4−6, 1−4 cm long, ending in cylindrical spikes 2−3 cm long, usually with short secondary rays at the base; spikelets numerous, dense, erect, silvery, linear, 6−8−15 mm long, 12−24-flowered.

Sand-banks in river beds; along water courses; also on rocks or coarse sediments (gravelly island).

Subsp. **tonkinensis** in SE Asia: Laos, Thailand, Viet-nam.

"Rather like *Pycreus polystachyos* when there are few inflorescence branches."

C. triceps (Rottb.) Endl. – See below under **Kyllinga tenuifolia** Steud.

C. trigonellus Suess., Trans. Rhodesia Sci. Assoc. 43: 154−155 !, 1951 [cited as *Cyperus* (*Mariscus*) *trigonellus*].

Culms c. 40 cm tall, *trigonous*, covered at base by remains of old leaves; leaves few, short, to c. 7 cm long; inflorescence an umbellate anthela of 4 pedunculate (peduncles to 2 cm long) spikes; spikes ovate, c. 1,2 cm long, 1 cm wide at base, very *loose*; spikelets loosely arranged, linear, to 5 mm long, 2-flowered; glumes yellowish-brown; ripe nutlet not seen.

Dry Veld, cracks in rock (Marandellas, S. Rhodesia/Zimbabwe); (4500 ft =) c. 1360 m alt.

This plant is perhaps a true *Mariscus*. "This species may belong to the section *Umbellati* C. B. Clarke and be related to *C. chersinus* Kkthl. (in Pfl. Reich 4: 20 pg. 525, 1936) known from Rhodesia (synonym: *Mariscus chersinus* N. E. Brown in Kew Bull. 1921 pg. 300). It differs from the latter by very narrow and loosely arranged spikelets". – *Cyperus chersinus* (N. E. Brown) Kük. is treated by us under **Mariscus chersinus** N. E. Brown below.

? Known only from the type collected in 1942 (Dehn 803).

(***C.*** × ***turbatus*** Baijnath)

A hybrid **C. prolifer** Lam. × **C. sensilis** Baijnath cited above under **C. prolifer**, from S. Africa.

C. turrillii Kük. – See below under **Mariscus laxiflorus** Turrill

C. ugogensis Peter & Kük. – See below under **Kyllinga ugogensis** (Peter & Kük.) Lye

C. undulatus Kük.; Fl. Trop. E. Afr., Cyper.: 234−235, 2010. – Icon.: Engler, Pflanzenreich IV. 20/101: 99, 1935; Haines & Lye, Sedges & rushes E. Afr.: 190, 1983.

Perennial, stoloniferous herb to 1,5 m tall; culms 0,54−1,3 m long, 2−3 mm ∅, trigonous, with longitudinal grooves; leaves to 86 cm long; sheath (bright) *yellow*, 4−22 cm long; blade flat, linear, 22−74 cm long, 0,6−1,2 cm wide; inflorescence compound, primary branches 5−8, 1−14 cm long; spikelets in loose clusters on elongated axis, sessile and at end of primary and secondary branches, 5−20 per cluster, linear, ± terete, 6−30 mm long, c. 1 mm ∅.

Seasonally wet habitats; bogs and saline swamps; cultivated land; 250−1400 m alt.

Recognizable due to its *yellow*-coloured leaf sheaths, and nutlets transversely wrinkled with large surface-cells.

C. unioloides R. Br. – See below under **Pycreus unioloides** (R. Br.) Urb.

C. unispicatus Bauters, Reynders & Goetgh. – See below under **Mariscus unispicatus** (Bauters, Reynders & Goetgh.) J.-P. Lebrun & Stork, comb. nov.

C. usitatus Burch., excl. var. *sanguinolentus* Nees (= *C. semitrifidus*); Gordon-Gray, Cyper. Natal: 76, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 1999; Simpson & Inglis in Kew Bull. 56: 310, 2001; Archer & Craven, Cyper. Namibia: 21, 2004; Fl. Trop. E. Afr., Cyper.: 164−165, 2010; Archer & Goetghebeur in Bothalia 41: 300−301, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 192−193 (subsp. *palmatus*), 1983; Fl. Eth. & Eritrea 6: 453, 1997.

syn.: *Mariscus usitatus* (Burch.) Vorster ined.

Perennial herb to 44 cm tall, producing thin stolons 0,5−10 cm long, 0,2−1 mm ∅, covered in light reddish-brown scales, sometimes fibrous; stolons producing bulbs 0,5−1 cm ∅; culms few, 5−42 cm long, 1−3,8 mm ∅, triquetrous to trigonous; leaves to 30 cm long; sheath grey, straw-coloured to pale brown, 1−5,5 cm long; blade flat, sometimes semi-fleshy, 3,5−25 cm long, 1−3,8 mm wide; inflorescence more often (loosely) capitate then simple, when simple primary branches 0−2; spikelets in crowded digitate clusters, 7−25 to many more per cluster, linear, 8−21 mm long.

Seasonally wet habitats; flooded grassland; rocky slopes and outcrops; lake shores; shallow soil on rocky outcrops; 100−2150 m alt.

Namibia, S. Africa, Botswana.

Comprises 2 subspp., one with 2 vars.: – subsp. **usitatus** with 2 vars.: – var. **usitatus** [syn.: *Cyperus bulbifer* Drège 1843, nom.; *C. bulbifex* E. Mey. ex Drège 1847; *C. stuhlmannii* C. B. Clarke ex K. Schum.; *C. usitatus* var. *stuhlmannii* (C. B. Clarke ex K. Schum.) Lye; *C. edulis* Dinter], with bulbs 6−10 mm ∅, glumes reddish to ± black, nutlet ellipsoid, 0,6−0,8 mm ∅; widespread; – var. **macrobulbosus** Kük. non *C. microbolbos* C. B. Clarke [= *Mariscus microbolbos* (C. B. Clarke) Vorster] with bulbs 10−20 mm ∅; – subsp. **palmatus** Lye [syn.: *C. palmatus* (Lye) C. Archer & Goetgh.; *C. fulgens* C. B. Clarke var. *contractus* Kük., non *C. contractus* Steud.; *C. fulgens* s. lat., Podlech in Merxmüller, Prodr. Fl. Südwestafrika 165: 14, 1967; *C. palmatus* Vorster ined. 1978], with bulbs 5−6 mm ∅, glumes golden brown, nutlet obovoid, 0,7−1 mm ∅.

"This group [*C. palmatus*, *C. fulgens*, *C. usitatus*] does require revision, but *C. palmatus* has such a distinctive inflorescence form … that in the interim it is preferable to treat it at species level" (Archer & Goetghebeur, l.c.).

Tubers eaten raw.

Readily identified by, from base of each shoot, a short scale-invested stolon ending in a scaly bulb. But stolons without bulbs are also known.

C. vandervekenii Reynders, Dhooge & Goetgh. – Icon.: Novon 16: 513−514, 2006; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park Rwanda: 342, 2008.

syn.: *C. graciliculmis* sensu Troupin, Fl. Rwanda 4: 446, 1988, non Lye (specim. Van der Veken 11146, not 11140).

Perennial herb forming dense tufts, with red creeping rhizomes; culms 2,5−35 cm long, 0,01−0,04 cm ∅, erect, ribbed-rectangular with 6−8 rounded ribs; leaves basal, reduced to their sheaths to 4 cm long, red; blades 0,8−3,4 mm long, red; inflorescence with a single, pseudolateral, sessile spikelet (rarely 1−2 additional spikelets), persistent or not, 0,7−2,1 cm long, glumes green-red.

Bog with *Erica* tussocks, *Sphagnum* cushions.

Near *C. graciliculmis*. "Due to the strong reduction of most parts of the plant, it is difficult to identify the section where [this species] belongs" (Novon 16: 513, 2006).

C. vatkeanus (Boeckeler) Goetgh. – See above under **Ascolepis speciosa** Welw.

(**C. verrucinux** C. B. Clarke (not "verrucinus" sphalm.); Fl. Trop. E. Afr., Cyper.: 255, 2010).

Perennial herb with horizontal rhizome and dense culms; leaves 40−50 cm long, 5−6 mm wide; inflorescence a simple anthela of spikes or a congested head; spikelets 12 mm long, 3 mm wide, 8−12-flowered; glumes blackish.

Moist sites in grassland and bushland; c. 1600 m alt. (Tanzania, Usambara Mts).

Said to be near *C. tenax*, but spikelets narrower. Kükenthal (Engler, Pflanzenreich IV. 20/101: 252−253, 1936) treats *C. verrucinux* as a synonym of *C. phaeorhizus* K. Schum. (= *C. haspan*). But the World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew, considers it a synonym of *C. denudatus* L. f.

C. vestitus Hochst. ex C. Krauss – See below under **Mariscus albomarginatus** C. B. Clarke and also under **M. rehmannianus** C. B. Clarke

C. volkielloides Muasya & Vollesen, Kew Bull. 70/4: §53: 1−4, 2015 (incl. fig. p. 3).

Annual ephemeral tufted herb with minute roots, lacking rhizomes or stolons; culms < 5 mm tall; leaves basal; sheath to 3 mm long, reddish-brown; blade 5−30 mm long, 0,2−0,4 mm wide, flat, ligule lacking; inflorescence a dense capitate head, borne near and partially covered at soil surface, 5−5,8 mm long, 4,9−8,2 mm wide; involucral bracts leafy, to 20 per peduncle, 40−80 mm long, 1,3−3 mm wide; spikelets flattened, 3,2−5 mm long, 1,3−3 mm wide, with 10−14 distichously arranged *glumes* these with *recurved mucro*.

Seasonally wet short grass glades in miombo woodland on grey-loamy soil; 1000−1050 m alt.

Resembling *C. cuspidatus*, a taller plant with longer spikelets, widespread in Africa. *C. volkielloides* is restricted to N Tanzania (T4, Sikonge District).

C. waillyi (Cherm.) Lye – See below under **Pycreus waillyi** Cherm.

C. welwitschii (Ridl.) Lye – See below under **Kyllinga tenuifolia** Steud. var. **ciliata** (Boeckeler) Beentje

C. wissmannii O. Schwartz – See below under **Mariscus cundudoensis** (Chiov.) J.-P. Lebrun & Stork, and **M. wissmannii** (O. Schwartz) J.-P. Lebrun & Stork, ined., at end of **Mariscus** p. 276.

C. xantholepis (Nelmes) Lye – See below under **Pycreus xantholepis** Nelmes

(**C. xerophilus** Cherm.)

syn.: *C. subxerophilus* Kük. 1936 in Engler, Pflanzenreich IV. 20/101: 200, 1936.

A plant from C Madagascar, cited by Chermezon as new for Zaire, mountains W of Lake Kivu, at 2000 m alt., collected by Humbert 7813, 7813 bis.

Identity unknown.

C. zollingeri Steud., incl. *robusta* K. Schum., and ? var. *parvus* C. B. Clarke (or = *C. tenuiculmis* var. *tenuiculmis*; cf. under *C. tenuiculmis* above); but *excl*. var. *condensatus* Kük., var. *livingstonii* Kük., and var. *longiramulosus* Kük. and var. *longiramulosus* (Kük.) Meneses, and fa. *levicaulis* C. B. Clarke (all = *C. tenuiculmis* var. *tenuiculmis*), and *excl*. var. *schweinfurthianus* (Boeckeler) Kük. (= *C. tenuiculmis* var. *schweinfurthianus*), and excl. var. *permacer* (C. B. Clarke) Kük. (= *C. permacer*); Renier, Fl. Kwango 1: 71, 1948; Berhaut, Fl. ill. Sénégal 9: 217, 1988; Gordon-Gray, Cyper. Natal: 76, 1995; Lisowski, Fl. Rép. Guinée 1: 399, 2009; Fl. Trop. E. Afr., Cyper.: 194−195, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt. & al. in Phytotaxa 304: 79, 2017). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 196, 1983; Fl. Gabon 44, Cyper.: 74, 2012.

syn.: *C. rubroviridis* Cherm., incl. var. *unicapitatus* Kük.; *C. ramosii* Kük.; *C. lucidulus* C. B. Clarke 1884; *C. sphacelatus* Rottb. var. *tenuior* C. B. Clarke

Annual, tussocky herb 10−53 cm tall; culms solitary or tufted, 12−34 cm long, 0,7−1,9 mm ∅, trigonous; leaves to c. 23 cm long; sheath greyish-brown to purple, 2−7 cm long; blade linear, 8−17 cm long, 1,6−4,3 mm wide; inflorescence simple (sometimes capitate), primary branches 5−9, 2−15 cm long; spikelets in digitate clusters, sessile and at end of primary branches, 1−7 per cluster (when capitate to 15 per head), linear, ± quadrangular, 12−53 mm long.

Seasonally wet habitats; swampy places; rice fields; roadsides; 0−650 m alt.

S. Africa, Botswana; Madagascar; tropical Asia, Malaysia E-wards to N Australia, Philippines.

Near *C. sphacelatus*; confused with *C. tenuiculmis* (cited as "zollingeri auctt., non Steud." in, e.g., Flora of Pakistan, Flora of China).

C. zonatissimus Kük. 1936, non *C. zonatus* Kük. 1913, syn.: *Pycreus zonatissimus* Cherm. 1928 – See below under **Pycreus zonatus** Cherm. 1921.

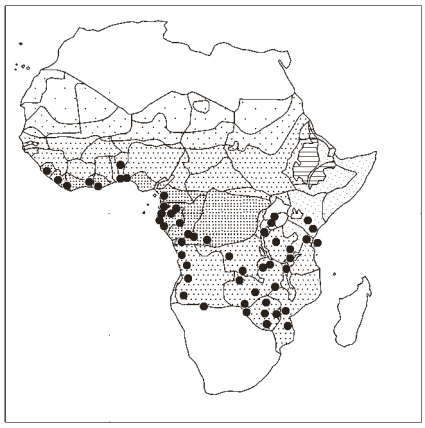
C. zonatus Kük. 1913, non *C. zonatissimus* Kük. 1936 – See below under **Pycreus afrozonatus** Lye 1981.

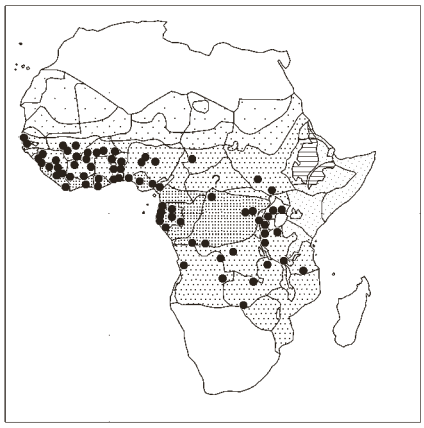
* * *

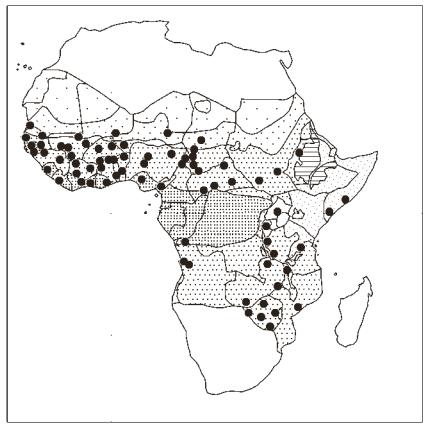
UNPLACED COLLECTIONS AND TAXA:

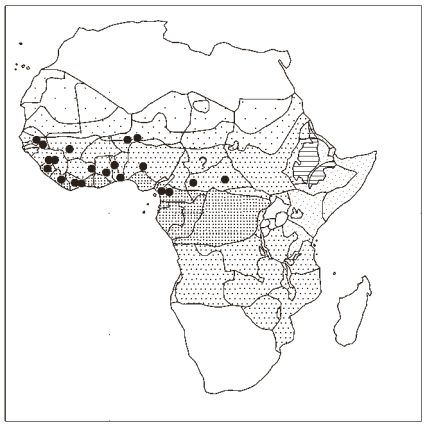
Cyperus sp. in Cable & Cheek, Pl. Mt Cameroon: 155, 1998.

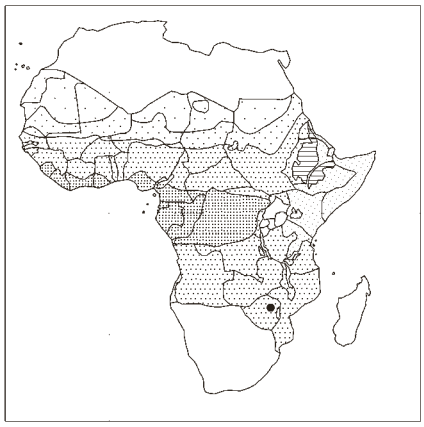
Specimen Tchouto 379 from E slopes of Mt Cameroon; specimen Cheek 3541 from Mabeta-Moliwe.

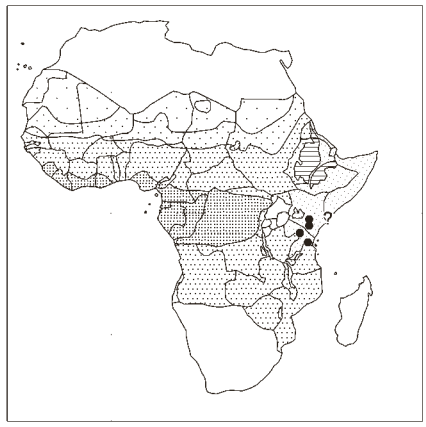

Cyperus tenax

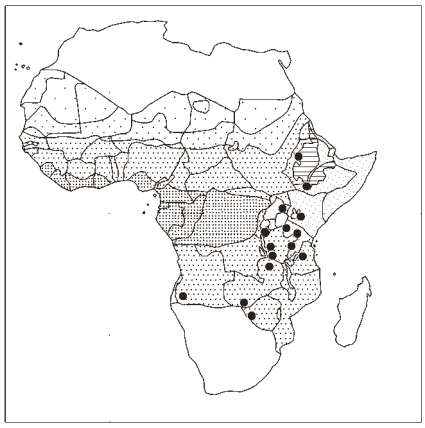

Cyperus tenuiculmis

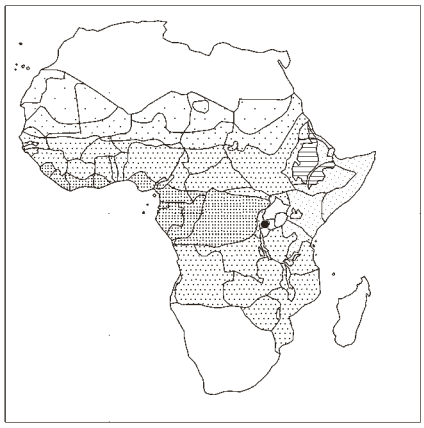

Cyperus tenuispica

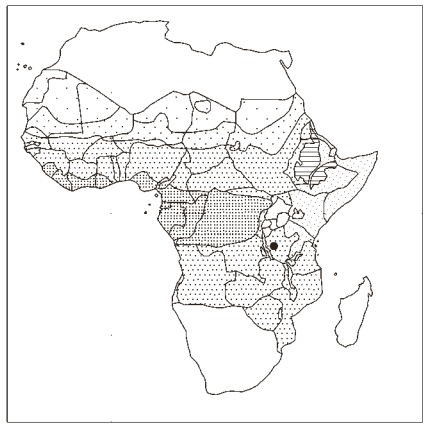

Cyperus tonkinensis var. baikiei

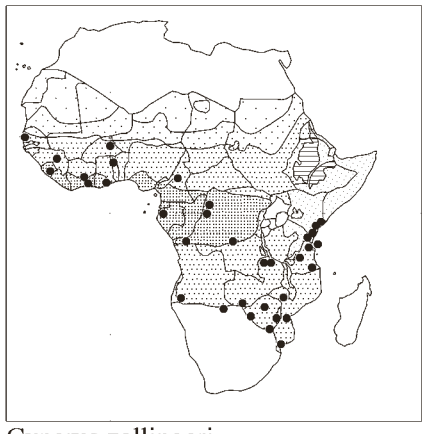

Cyperus trigonellus

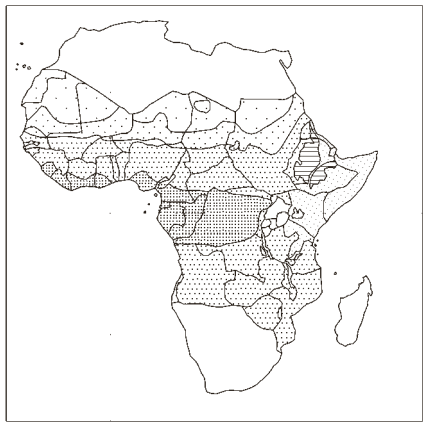

Cyperus undulatus

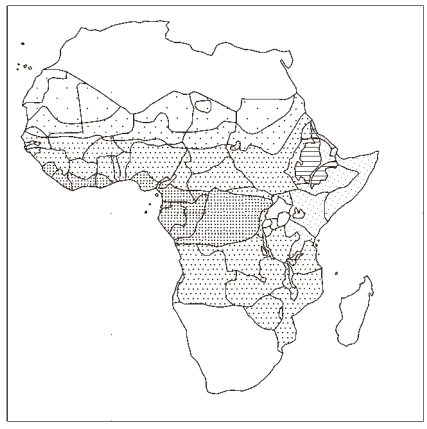

Cyperus usitatus


Cyperus vandervekenii


Cyperus volkielloides


Cyperus zollingeri





Cyperus sp. nov. in Cable & Cheek, Pl. Mt Cameroon: 156, 1998.

Specimens Cable 203, Cheek 5542, Thomas 9713, Williams 53, from Mt Cameroon, Etinde ("endemic"); streams; 1–600 m alt. – Flowering in November.

Cyperus sp. nov. in Fl. Trop. E. Africa, Cyperaceae: 195, 2010.

Annual herb 5–32 cm tall; culms 3,5–17,5 cm long, 1–2 mm ∅, trigonous, longitudinally ridged; leaves to 30 cm long; sheath reddish-brown, 1–3,5 cm long; blade linear, 4–29 cm long, 2,5–5 mm wide; inflorescence simple to compound, primary branches 3–8, 2,5–15 cm long; bracts leaf-like, narrow, 4–6, spreading, 7,5–24 cm long; spikelets in loose digitate clusters, sessile or at end of primary and secondary branches, 8–25 per cluster, linear, 18–20 mm long; glumes spreading, orange-brown with reddish veins, keel green.

Sandy river bed; c. 510 m alt.

Specimens (3) from Zimbabwe, Gokwe (Bingham 505; Brain 8695, 4143); Tanzania, Kilosa District (Greenway & Kanuri 15284); Rufiji District, Selous Game Res. (Luke & Luke 4645); Zambia, Kabanga (Robinson 1356).

Cyperus sp. ? nov. in Darbyshire & al., Plants Sudan & S. Sudan: 110, 2015.

Listed by Wickens as sp. nov. from Jebel Marra (Wickens 2679, 2986).

* * *

Note: Two of the species figuring on the main list of **Cyperus** species above certainly belong to:

– **Mariscus**: **Cyperus longi-involucratus** Lye (See p. 120);

– **Pycreus**: **Cyperus juncelliformis** Peter & Kük. (See pp. 114, 291).

* * *

SYNONYMS:

"Changing names: can we or the books keep up ?" (C. Stace in BSBI News 139: 7, 2018).

Cyperus aberdarensis Kük. = **Pycreus aethiops**
abietinus (Goetgh.) Bauters = **Lipocarpha abietina**
absconditicoronatus Bauters, Reynders & Goetgh. = **Mariscus absconditicoronatus**
abyssinicus Hochst. ex A. Rich. = **Pycreus flavescens** subsp. **flavescens**
acaulescens Reynders = **Pycreus acaulis**
acholiensis Larridon = **Kyllingiella ugandensis**
actinostachys Welw. ex Ridl. = **Cyperus tenax**
acuticarinatus Kük. = **Pycreus acuticarinatus**
adami Raymond = **Cyperus meeboldii**
adansonii C. B. Clarke = **Cyp. conglomeratus** (**C. jeminicus**)
adenophorus Schrad. ex Nees, incl. var. *aphyllus* Boeckeler = **Cyp. haspan**
adoensis Hochst. ex A. Rich. = **Cyp. rigidifolius**
aegyptiacus Gloxin = **Cyp. capitatus**
aequalis Vahl 1805 = **Cyp. prolifer**
aequalis C. Krauss 1845 = **Cyp. prolifer**
aethiops Welw. ex Ridl., incl. var. *aberdarensis* (Kük.) Kük. and var. *tessmannii* Kük. = **Pycreus aethiops**
africanus (S. S. Hooper) Reynders = **Pycreus africanus**
afroechinatus Lye = **Kyllinga echinata**
afro-occidentalis (Lye) Huygh = **K. afro-occidentalis**
afropumilus (Lye) Lye = **K. afropumila**
afrorobustus Lye = **K. pumila**
afrosylvestris Lye = **K. odorata**
afzelii Boeckeler = **Pycreus capillifolius**
alatus (Nees) F. Muell. = **Kyllinga alata**
subsp. *albus* (Nees) Lye = **K. alba** subsp. (var.) **alata**
subsp. *ascolepidioides* (Cherm.) Lye = **K. alba** subsp. **ascolepidioides**
subsp. *controversus* (Steud.) Lye = **K. controversa**
var. *serratus* Peter & Kük. = **K. alba**
alba-purpureus (Lye) Lye = **K. alba-purpurea**
albescens (Steud.) Larridon & Govaerts = **Lipocarpha chinensis**
albiceps Ridl. = **Kyllinga albiceps**
albidus Lam. = **Pycreus sanguinolentus**
albogracilis (Lye) Lye = **Kyllinga albogracilis**
albomarginatus (C. B. Clarke) K. Schum. = **Mariscus albomarginatus**
albomarginatus (Mart. & Schrad. ex Nees) Steud., incl. var. *tenuis* (Boeckeler) Kük. = **Pycreus macrostachyos**
albopilosus (C. B. Clarke) Kük. = **Mariscus albopilosus**
albosanguineus Kük. = **M. albosanguineus**
alboviridus C. B. Clarke ex Scott-Elliot = **Fimbristylis alboviridis**
alopecuroides J. Koenig ex Roxb. 1820, non Thunb. 1794, nec Rottb. 1773 = **Cyperus exaltatus** var. **exaltatus**
alopecuroides Rottb. var. *digynus* Boeckeler, fa. *latifolius* Peter ex Kük., and fa. *pallidiflorus* (Peter) Kük. = **Cyperus alopecuroides** Rottb.
alopecuroides var. *dives* Boeckeler, and var. *microstachys* Boeckeler = **Cyp. exaltatus** var. **dives**
alpestris K. Schum. = **Mariscus tomaiophyllus**
alternifolius L. 1767, non Vahl 1806, var. *albovariegatus* auct. = **Cyperus alternifolius** subsp. **flabelliformis**
alternifolius var. *flabelliformis* (Rottb.) M. R. Almeida = **Cyp. alternifolius** subsp. **flabelliformis**
subsp. *flabelliformis* var. *macrostachys* Robyns & Tournay = **Cyp. alternifolius** subsp. **flabelliformis**
var. *gracilis* Pynaert = **Cyp. alternifolius** subsp. **alternifolius**
var. *obtusangulus* Boeckeler = **Cyp. alternifolius** subsp. **flabelliformis**
var. *petersianus* (Boeckeler) Kük. = **Cyp. alternifolius** subsp. **flabelliformis** (Madagascar)
alternifolius 'Variegatus' Hovey = **Cyp. alternifolius** subsp. **flabelliformis**
amabilis sensu Graebner 1915, non Vahl = **Cyp. kirkii**
amabilis Vahl var. *macra* C. B. Clarke, var. *macrostachyus* (Boeckeler) Kük., var. *oligostachyus* (Kunth) Kük., and var. *subacaulis* Kük. = **Cyp. amabilis**
amabilis Vahl var. *pseudocastaneus* Kük. = **Cyp. tenax**
amauropus Steud. = **Mariscus amauropus**
amblyleptos Steud. = **Cyperus schimperianus**
amnicola Kunth = **Cyp. rupestris**
amoenus Kunth = **Cyp. longus** subsp. **longus**
amomodorus K. Schum. = **Mariscus amomodorus**
amphibolus Steud. = **Cyperus denudatus**
ampullaceus (J. Raynal) Bauters = **Ascolepis ampullacea**
anceps B. Heyne ex Steud. 1840 = **Cyperus procerus**
andongensis Ridl. = **Cyp. tenax**
androhibensis D. A. Simpson = **Cyp. pulchellus**
andschoa A. Rich. = **Cyp. dichrostachyus**
angolensis Boeckeler var. *amplibulbus* Peter & Kük. = **Cyp. angolensis**
angulatus W. Watson 1876, non Nees 1834 = **Pycreus pauper**

angulatus Nees 1834 = **P. unioloides**
antiquorum (Willd.) Chiov., incl. var. *palaestinae* Chiov. = **Cyperus papyrus** subsp. **papyrus**
aphyllus Hassk. 1844 = **Kyllinga vaginata**
aphyllus Vahl 1798 = **Cyperus haspan**
aphyllus (Kunth) F. Muell. 1874 = **Kyllinga tibialis**
apricus Ridl. = **Cyperus semitrifidus**
arcuatus Boeckeler = **Cyp. conglomeratus** subsp. **conglomeratus**
aristatus Hook. f. & Thomson ex C. B. Clarke 1884 = **Cyp. reduncus**
aristatus Rottb. 1773 = **Mariscus squarrosus**
aristatus Rottb. var. *floribundus* E. G. Camus, and fa. *inflexus* (Muhl.) C. B. Clarke, and var. *inflexus* (Muhl.) Boeckeler ex Kük., and var. *perennis* M. E. Jones, and var. *semiglobosus* Kük. = **M. squarrosus**
aristatus Rottb. subsp. *hamulosus* (M. Bieb.) Asch. & Graebn., and var. *hamulosus* (M. Bieb.) Boeckeler, and subsp. *hamulosus* var. *pitardii* (Trab. ex Pitard) Maire = **M. hamulosus**
aromaticus (Ridl.) Mattf. & Kük. = **Kyllinga polyphylla** var. **polyphylla**
aromaticus var. *brachyrhizomatosus* Kük. = **K. polyphylla** var. **polyphylla**
aromaticus var. *elatior* (Kunth) Kük. = **K. polyphylla polyphylla** var. **elatior**
aromaticus var. *elatus* (Steud.) Kük. = **K. polyphylla** var. **polyphylla** (African specimens); the true **K. elata** is from Comoro islands
aromaticus var. *repens* Kük. = **K. polyphylla** var. **polyphylla**
aromaticus var. *teres* (C. B. Clarke) Kük., and fa. *aphylla* (Cherm.) Kük. = **K. polyphylla** var. **polyphylla**
articulatus Benth. 1844 = **Cyperus articulatus** L.
articulatus L. "forma haud articulata…" sensu Ridl. 1884 = **Cyp. corymbosus**
articulatus L. var. *conglomeratus* Britton, and var. *erythrostachys* Graebn., and var. *fistulosus* Kük., and fa. *longispiculosus* Kük., and var. *multiflorus* Kük., and var. *nodosus* (Humb. & Bonpl. ex Willd.) Kük. = **Cyp. articulatus**
ascocapensis Bauters = **Ascolepis capensis**
ascodensus Goetgh. = **A. densa**
ascofibrillosus Goetgh. = **A. fibrillosa**
ascohemisphaericus Goetgh. = **A. hemisphaericus**
ascolepidioides (Cherm.) Kük. = **Kyllinga alba** subsp. **ascolepidioides**
asconeglectus Goetgh. = **Ascolepis neglecta**
ascopinguis Goetgh. = **A. pinguis**
ascopusillus Goetgh. = **A. pusilla (**incl. var. *cylindrica* S. S. Hooper, and var. *echinata* S. S. Hooper, and var. *microcuspis* Lye)
ascospinulosus Goetgh. = **A. spinulosa**
ascotrigonus Goetgh. = **A. trigona**
asperifolius Desf. = **Cyperus alternifolius** subsp. **textilis**
assimilis Steud., incl. var. *depressa* Steud. = **Courtoisina assimilis**
aster (C. B. Clarke ex Cherm.) Kük. and var. *biflorus* Peter & Kük. = **Mariscus aster**
ater Vahl 1805, non Dalzell & A. Gibson 1861 = **Pycreus nitidus**
atratus Steud. = **P. sanguinolentus**
atribulbus Kük. = **P. atribulbus**
atronervatus Boeckeler, incl. var. *minor* Boeckeler and subsp. **angustifolius** Lye = **P. atronervatus**

atronitens Hochst. 1841 nom. nud., Hochst. ex A. Rich. 1851= **P. elegantulus**
atrorubidus (Nelmes) Raymond sensu str. = **P. atrorubidus**
atrorubidus sensu auctt. Afric. occ. = **Pycreus rubidomontanus**
atrosanguineus (Hochst. ex A. Rich.) Steud. = **Mariscus plateilema**
atroviridis C. B. Clarke = **Cyperus aterrimus**
aucheri Jaub. & Spach = **Cyp. conglomeratus** and See under **Cyp. aucheri**
auratus (Nees) Huygh = **Kyllinga brevifolia** var. **brevifolia**
aureoalatus Lye = **K. alba** subsp. **alata**
aureobrunneus C. B. Clarke (cf. Fl. Trop. Afr. 8: 346, 1902: "The collection consists of 5 fine umbels… perhaps really related to *C. amabilis*…") – See under **Cyperus aureobrunneus**
aureorufus Boeckeler = **Cyperus digitatus** subsp. **auricomus**
aureostramineus Mattf. & Kük. = **Kyllinga chrysantha**
aureostramineus var. *decolorans* (Kük.) Kük. = **K. comosipes** subsp. **decolorans**
aureovillosus (Lye) Lye = **K. aureovillosa**
aureus Kunth 1816, incl. var. *aurantiacus* (Kunth) Boeckeler, and var. *macrostachyus* Boeckeler, and var. *oligostachyus* (Kunth) Boeckeler = **Cyperus amabilis**
aureus Ten. 1824, incl. subsp. *esculentus* (L.) Nyman = **Cyp. esculentus**
aureus J. Presl & C. Presl 1828 = **Mariscus squarrosus**
auricomus Sieber ex Spreng., incl. var. *microstachyus* Boeckeler, and var. *minor* C. B. Clarke = **Cyperus digitatus** subsp. **auricomus**
austroafricanus C. Archer & Goetgh. = See under **Mariscus dregeanus** and **M. dubius**
badius Desf. 1798, non (Willd. ex Kunth) Boeckeler 1870 = **Cyperus longus** subsp. **badius**
baikiei C. B. Clarke & Kük. = **Cyp. tonkinensis** var. **baikiei**
baobab Lye = **Mariscus baobab**
baoulensis Kük. = **M. baoulensis**
barbata (Rottb.) Poir. = **Bulbostylis barbata**
baronii C. B. Clarke = See under **Cyperus mannii**
baronii C. B. Clarke p.p. (specim. Buchanan 47) = **Cyp. glaucophyllus**
baronii var. *interpositus* Kük. = ? **Cyp. exaltatus** var. **dives**
baronii var. *mannii* (C. B. Clarke) Kük. = **Cyp. baronii**
barteri Boeckeler = **Cyp. pustulatus**
bellus Kunth var. *tanganyicanus* Kük. = **Cyp. tanganyicanus**
beninensis (Samain, Reynders & Goetgh.) Huygh = **Kyllinga beninensis**
bequaertii (Cherm.) Robyns & Tournay = **Mariscus ferrugineoviridis**
bicolor Vahl = **Cyperus rotundus**
blandus Kunth = **Cyp. marginatus**
blepharoleptos Steud. = **Oxycaryum cubense**
boehmii Boeckeler = **Cyperus tenax**
boivinii Boeckeler = **Pycreus polystachyos** var. **polystachyos**
boreochrysocephalus Lye = **Mariscus boreochrysocephalus**
boreohemisphaericus Lye = **M. boreohemisphaericus**
bracheilema (Steud.) Mattf. & Kük. = **Kyllinga pulchella**
brasiliensis (Kunth) Bauters = **Ascolepis brasiliensis**
braunii Vatke = **Cyperus albostriatus**

brevifolius (Rottb.) Endl. ex Hassk. with subsp. *brevifolius* (Rottb.) Hassk. = **Kyllinga brevifolia** var. **brevifolia**
brevifolius subsp. *intricatus* (Cherm.) Lye = **K. brevifolia** var. **brevifolia**
brevifolius subsp. *luridus* (Kük.) Lye = **K. brevifolia** var. **lurida**
brevifolius var. *stellulatus* J. V. Suringar = **K. brevifolia** var. **stellulata**
breviglumis Lye = **K. tisserantii**
brevis Boeckeler = **Cyperus crassipes**
bromoides Link = **Pycreus unioloides**
brunneoalatus (Cherm.) Huygh = **Kyllinga brunneoalata**
brunneoalbus (Lye) Lye = **K. brunneoalba**
brunneoater Boeckeler = **Pycreus nitidus**
brunneofibrosus Lye = **Kyllinga brunneofibrosa**
brunneovaginatus Boeckeler = **Cyperus marginatus**
buchananii Boeckeler = **Cyp. esculentus**
buchholzii Boeckeler = **Cyp. laxus** subsp. **buchholzii**
bulamensis Steud. = **Cyp. esculentus**
bulbifer Drège 1843, nom. = **Cyp. usitatus**
bulbiferus A. Dietr. = **Cyp. bulbosus**
bulbifex E. Mey. ex Drège 1847 = **Cyp. usitatus** var. **usitatus**
bulbipes Mattf. & Kük., incl. var. *pallescens* Kük. = **Kyllilga crassipes**
bulbocaulis (Hochst. ex A. Rich.) Boeckeler, incl. var. *atrosanguineus* (Hochst. ex A. Rich.) Kük. = **Mariscus plateilema**
bulbosus Lag 1816 = **M. congestus**
bulbosus Hochst., nom. nud., non Vahl 1805 = **Cyperus blysmoides**
bulbosus Vahl var. *flavus* Chiov., nom. nud. = **Cyp. grandibulbosus**
bulbosus Vahl var. *spicatus* Boeckeler = **Cyp. blysmoides**
bullatus Kük. = **Mariscus chersinus**
burchellii Schrad. = **Cyperus alternifolius** subsp. **textilis**
cadamostoi Bolle ex E. H. L. Krause = **Cyp. conglomeratus** (**C. jeminicus**)
caespitosus Poir. 1806, non Llanos 1851 = **Pycreus polystachyos** var. **polystachyos**
caffer G. Bertol. = **Cyperus compressus**
callistus Ridl. = **Cyp. esculentus**
camerunensis Lye = **Kyllinga stenophylla**
canariensis Steud. = **Cyperus exaltatus** var. **dives**
cancellatus Ridl. = **Cyp. haspan**
capensis (Steud.) Endl. and var. *pseudomarlothii* Kük. and fa. *globospica* (C. B. Clarke) Kük. =**Mariscus capensis**
capensis (Steud.) Endl. 1842 var. *polyanthemus* Kük. = **Mariscus chersinus**
capillifolius A. Rich., incl. var. *major* (Cherm.) Kük. = **Pycreus capillifolius**
capitatus Poir. 1806, non Vand. 1771 = **Mariscus dubius** subsp. **dubius**
capitatus Retz. 1786, non (L.) Burm. f. ex B. D. Jackson = **Cyperus cuspidatus**
cardosoi (Meneses) Huygh = **Kyllinga cardosoi**
carinalaevis (Lye & Mesterházy) Huygh = **Kyllinga carinalaevis**
carnosus B. Heyne ex Wall. 1831 = **Cyperus procerus**
cartilagineus (K. Schum.) Mattf. & Kük. = **Kyllinga cartilaginea**
cartilagineus var. *angustatus* Peter & Kük. = **K. comosipes** subsp. **comosipes**
cartilagineus var. *laevissimus* (Cherm.) Kük. = **K. alba** subsp. **alba**
cartilagineus var. *serratangulus* Peter & Kük. 1936 = **K. serratangula**
castaneus Willd. subsp. *amabilis* (Vahl) Lye, Fl. Eth. & Eritrea 6: 460, 1997 = **Cyperus amabilis** Vahl
cataphyllatus (Huygh & Schouppe) Huygh = **Kyllinga cataphyllata**
cataractarum (C. B. Clarke) K. Schum. ex Engl. = **Pycreus cataractarum**
cephalostachyus Steud. = **Cyperus crassipes**
ceylanicus T. Koyama = See under **Lipocarpha filiformis**
chaetophyllus (Chiov.) Kük. = **Mariscus chaetophyllus**
chermezonianus Robyns & Tournay (non *chermezonii* Kük.) = **M. luteus**
chersinus (N. E. Br.) Kük., incl. var. *angularis* (Turr.) Kük. = **M. chersinus**
chevalieri Kük. = **M. stolonifer**
chionocephalus (Chiov.) Chiov. ex Chiarugi = **M. chionocephalus**
chisimajensis Chiov. = **Cyperus crassipes**
chlorostachys Boeckeler = **Pycreus polystachyos** var. (subsp. ?) **polystachyos**
chlorotropis (Steud.) Mattf. & Kük. = **Kyllinga chlorotropis**
chrysanthoides (Mtot.) Huygh = **K. chrysanthoides**
chrysanthus Boeckeler, incl. var. *occidentalis* Kük. = **Pycreus chrysanthus**
chrysocephalus (K. Schum.) Kük. = **Mariscus chrysocephalus**
chrysomelinus Link = **Cyperus iria**
ciliatopilosus Mattf. & Kük., incl. var. *longifolius* (Kük.) Kük., and var. *rhizomatosus* Kük. = **Kyllinga platyphylla**
cimicinus J. Presl. & C. Presl = **Pycreus niger**
circumclusus (C. B. Clarke) Kük. = **Mariscus amomodorus**
clandestinus Steud. = **Ficinia clandestina**
clarkeanus K. Schum. = **Mariscus taylorii**
cognatus Kunth = **Cyperus rupestris**
coloratus Vahl = **Mariscus dubius**
coloratus var. *longinux* Kük. = **M. karisimbiensis**
colymbetes Kotschy & Per. = **Anosporum colymbetes**
comosipes Mattf. & Kük. = **Kyllinga comosipes**
comosipes subsp. *decolorans* (Kük.) Lye = **K. comosipes** var. **decolorans**
compactus Retz. 1788 = **Mariscus microcephalus** (See at end of **Mariscus**)
compactus Lam. 1791 = **Cyperus niveus** var. **leucocephalus**
compactus var. *flavissimus* (Schrad.) C. B. Clarke = **Cyp. sphaerocephalus**
compactus var. *macrostachys* (Boeckeler) Kük. = **Cyp. compactus** Retz.
compactus var. *macrostachys* Gräbn. = **Cyp. niveus** var. **leucocephalus**
compactus var. *tenerior* C. B. Clarke = **Cyp. niveus** var. **leucocephalus**
complanatus Forssk., non C. Presl = **Cyp. conglomeratus** subsp. **conglomeratus**
complanatus (Retz.) Willd. 1797 = **Fimbristylis complanata**
compressus Krock. 1787, non L. nec Jacq. 1777 = **Cyperus fuscus**
compressus Jacq. 1777 = **Cyp. surinamensis** var. **surinamensis**
compressus L., incl. vars. = **Cyp. compressus** L.
concinniformis Kük. = **Mariscus amauropus**

concinnus C. B. Clarke = **M. amauropus**
concolor Steud. = **Pycreus sanguinolentus**
congensis C. B. Clarke = See at end of **Mariscus**
congestus Vahl 1805 (non Poir. 1806) and var. *glanduliferus* (C. B. Clarke) Kük., var *grandiceps* Kük., and var. *pseudonatalensis* Kük. = **Mariscus congestus**
congestus Vahl var. α Nees = **Mariscus solidus**
congestus var. *brevis* (Boeckeler) Kük. = **Cyperus crassipes**
conglobatus Link = **Torulinium odoratum**
conglomeratus Rottb. var. *aucheri* (Jaub. & Spach) C. B. Clarke = See under **Cyperus aucheri**
conglomeratus Willd. 1813, nom. nud., non Rottb. 1773 = **Cyperus compressus**
conglomeratus fa. *excisus* (Boeckeler) Kük. = **Cyp. conglomeratus** (**C. jeminicus**)
conglomeratus subsp. *jeminicus* (Rottb.) Lye = **Cyp. conglomeratus** (**C. jeminicus**)
conglomeratus var. *major* Boeckeler and fa. *major* (Boeckeler) Kük. = **Cyp. conglomeratus** subsp. **conglomeratus**
conglomeratus var. *multiculmis* (Boeckeler) Kük. = **Cyp. conglomeratus** (**C. jeminicus**)
conglomeratus fa. *oligostachys* Kük. = See under **Cyp. aucheri**
conglomeratus fa. *pumilus* (Boeckeler) Kük. = **Cyp. conglomeratus** (**C. jeminicus**)
constrictus (Goetgh.) Bauters = **Lipocarpha constricta**
contractus Steud. = **Cyperus cuspidatus**
controversus (Steud.) Mattf. & Kük. = **Kyllinga controversa**
controversus var. *subexalatus* (C. B. Clarke) Kük. = **K. tenuifolia** var. **ciliata**
cooperi (C. B. Clarke) Kük. 1934, non (C. B. Clarke) K. Schum. 1900 = **Pycreus cooperi**
cooperi (C. B. Clarke) K. Schum. = **Mariscus congestus**
coronarius (Vahl) Kunth = **Cyperus leucocephalus**
costatus Mattf. & Kük. = **Kyllinga nervosa**
costatus subsp. *jubensis* (Mtot.) Govaerts = **K. nervosa** subsp. **jubensis**
costatus subsp. *sidamoensis* (Mtot.) Lye = **K. nervosa** subsp. **sidamoensis**
crassicuspis (J. Raynal) Bauters = **Lipocarpha crassicuspis**
crassipes Vahl var. *subtilis* Kük. = **Cyperus crassipes**, but See also under **Cyp. subtilis**
crassivaginatus Lye = **Mariscus plateilema**
cremeomariscus Lye = See at end of **Mariscus**
crinitus Spreng. 1829 = **Cyperus semitrifidus**
cristatus (Kunth) Mattf. & Kük., incl. var. **exalatus** Merxm. = **Kyllinga alba** subsp. **alba**
cristatus subsp. *ascolepidioides* (Cherm.) Lye = **K. alba** subsp. **ascolepidioides**
cristatus var. *nigritanus* (C. B. Clarke) Kük. = **K. alba** subsp. **alba**
cruciformis (Schrad. ex Schult.) Engl. = **K. brevifolia**
cruentus Rottb. = **Mariscus schimperi**
cruentus subsp. *amauropus* (Steud.) Lye = **M. amauropus**
cruentus sensu Baker, Fl. Maurit. etc. = **Pycreus mundtii**
crustaceus Raymond = **P. acuticarinatus**
cuanzensis Ridl. = **P. cuanzensis**
cunduduensis Chiov. = **Mariscus cundudoensis**
cylindrostachyus Boeckeler = **M. sumatrensis**
cyperoides (L.) Kuntze 1898, incl. vars. and subspp. = **M. sumatrensis**

cyperoides Sw. = **Rhynchospora holoschoenoides**
dactyliformis Boeckeler = **Mariscus solidus**
deciduus Boeckeler = **M. deciduus**
deckenii Boeckeler = **Cyperus derreilema**
deckenii C. B. Clarke p.p. = **Cyp. glaucophyllus**
decolorans (Kük.) Lye = **Kyllinga comosipes** subsp. **decolorans**
decurvatus (C. B. Clarke) C. Archer & Goetgh. = **Mariscus rehmannianus**, but compare also under **M. albomarginatus** and **M. indecorus**
delesserianus Webb & Berthel. = **Cyperus rubicundus**
delicatulus Steud. = **Cyp. tenuispica**
demangei (J. Raynal) Lye = **Pycreus demangei**
densicaespitosus Mattf. & Kük., incl. var. *rigidulus* (Steud.) Kük. = **Kyllinga pumila**
densicaespitosus var. *major* (Nees) Kük. = **K. pumila**
densicaespitosus var. *stenophyllus* (K. Schum. ex C. B. Clarke) Kük. = **K**. **stenophylla**
densiflorus Hemsl. 1885 = **Mariscus longibracteatus**
densiflorus Link 1820 = **Cyperus imbricatus**
densiflorus G. Mey. 1818 = **Torulinium odoratum**
densifolius Kunth 1837 = **Pycreus mundii** var. **mundii**
densifolius Steud. 1854 = **P. mundii** var. **mundii**
densus Link = **P. lanceolatus**
denudatus L. f. var. *aureobrunneus* (C. B. Clarke) Kük. = **Cyperus aureobrunneus**
denudatus var. *delicatulus* C. B. Clarke = **Cyp. platycaulis**
denudatus var. *lucentinigricans* (K. Schum.) Kük. = **Cyp. platycaulis**
denudatus var. *serpens* (Cherm.) Kük. = **Cyp. platycaulis**
denudatus var. *sphaerospermoides* (Cherm.) Kük. = **Cyp. denudatus**
denudatus var. *sphaerospermus* (Schrad.) Kük. = **Cyp. sphaerospermus**
depauperatus Vahl = **Eleocharis retroflexa** subsp. **retroflexa**
deremensis K. Schum. = **Cyperus renschii**
derreilema Steud. var. *ajax* (C. B. Clarke) Kük. = **Cyp. ajax**
dewildeorum (J. Raynal) Lye = **Pycreus dewildeorum**
dichromeniformis Kunth var. *major* Boeckeler = **Cyperus mapanioides**
dichromus C. B. Clarke 1906 = taxonomic status uncertain (described from Kenya, Jeroko, 3°24'N × 41°18'E, on the collection Ellenbeck 2195 made in 1901), near **Cyp. poecilus**
diffusus Roxb. 1820 = **Cyp. michelianus**
diffusus Vahl 1805 = **Cyp. laxus**
diffusus Vahl 1805 subsp. *buchholzii* (Boeckeler) Kük. = **Cyp. laxus** subsp. **buchholzii**
diffusus subsp. *sylvestris* (Ridl.) Kük. = **Cyp. laxus** subsp. **sylvestris**
diffusus misapplied = **Cyp. albostriatus**
digitatus Nees 1834 = **Cyp. imbricatus**
diloloensis (Kük. ex Cherm.) Kük. = **Pycreus diloloensis**
diphyllus Retz., incl. var. *elatior* Benth. and var. *triangularis* Boeckeler = **Cyperus corymbosus**
dipsacoides (Schumach.) Bauters = **Ascolepis dipsacoides**
distachyos All. = **Cyperus laevigatus** subsp. **distachyos**
distans L. f. 1782, incl. subsp., vars. and forms = **Mariscus longibracteatus**
distans L. f. var. *mucronatus* Berh. = **Cyperus congensis** – See at end of **Mariscus**
distans G. Mey. 1818 = **Torulinium odoratum**
distichophyllus Steud. 1842 = **Pycreus mundii** var. **uniceps**

diurensis Boeckeler, incl. vars. = **Mariscus diurensis**
dives Delile = **Cyperus exaltatus** var. **dives**
drakensbergensis (Vorster) Govaerts = cf. **Mariscus solidus**
dubius Rottb. = **Mariscus dubius**
dubius var. *buchananii* (C. B. Clarke) Kük. = **M. dubius** subsp. **dubius**
dubius var. *caespitotus* Boeckeler, var. *capitatus* (Cherm.) Kük., var. *coloratus* (Vahl) Kük., subsp. *coloratus* (Vahl) Lye, var. *decaryi* (Cherm.) Kük., var. *detersus* (C.B. Clarke ex Cherm.) Kük., var. *polyactis* Peter ex Kük., var. *stenactis* Peter ex Kük. = **M. dubius** subsp. **dubius**
dubius subsp. *macrocephalus* (C. B. Clarke) Lye, var. *macrocephalus* (C. B. Clarke) Kük. and fa. *macrocephalus* Boeckeler = **M. dubius** subsp. **macrocephalus**
duchaisingii Steud. = **Cyperus sphacelatus**
ducis Buscal. & Muschl. = **Cyp. kirkii**
durandii Boeckeler = **Pycreus flavescens** subsp. **flavescens**
durus Kunth = **Mariscus durus**
dussianus Duss = **M. flabelliformis**
dussii Boeckeler = **M. flabelliformis**
dwarkensis K. C. Sahni & H. B. Naithani = **Pycreus dwarkensis**
eburneus Thonn. ex Kunth = **Cyperus margaritaceus**
echinolepis T. Koyama = **Lipocarpha albiceps**
echinus (J. Raynal) Bauters = **L. echinus**
edulis Dinter = **Cyperus usitatus** var. **usitatus**
elatior (Kunth) Boeckeler 1870 = **Mariscus solidus**
elatior Boeckeler 1879 = **Cyperus tenuiculmis** var. **tenuiculmis**
elatus Rottb. 1773, non L. 1756 = **Mariscus longibracteatus**
elegans misapplied = **Cyperus albostriatus**
elegantulus Steud., incl. var. *submelanostachyus* Kük. = **Pycreus elegantulus**
eleusinoides Kunth = **Cyperus nutans** var. **eleusinoides**
eleusinoides var. *dinklageanus* Kük. (= **Cyperus congensis** C. B. Clarke) – See at end of **Mariscus**
elliottianus Schult. = **Pycreus lanceolatus**
elongatus Lej. ex Nees 1834 = **Cyperus longus** subsp. **longus**
elongatus Sieber ex Kunth 1837 = **Cyp. rotundus**
elongatus Steud. 1854 = **Pycreus intactus**
elongatus Hochst. ex C. B. Clarke 1884 = **Cyperus schimperianus**
ensifolius Nees & Ehrenb. ex Boeckeler = **Cyp. conglomeratus** subsp. **conglomeratus**
eragrostis Kunth 1807, non Lam. 1791 = **Pycreus sanguinolentus**
eragrostis Vahl 1805 = **P. sanguinolentus**
eragrostis var. *flaccidulus* Boeckeler, and fa. *flaccidulus* (Boeckeler) Cufod. = **P. sanguinolentus**
eragrostis C. Krauss 1845 = **P. flavescens** subsp. **intermedius**
erectus (Schumach.) Mattf. & Kük. subsp. *erectus* = **Kyllinga erecta**
erectus subsp. *albescens* (Lye) Lye = **K. erecta**
erectus var. *auratus* (Nees) Kük. = **K. brevifolia** var. **brevifolia**
erectus var. *intercedens* (Kük.) Kük. = **K. erecta**
erectus var. *intricatus* (Cherm.) Kük. = **K. brevifolia** var. **brevifolia**
erectus subsp. *jubensis* (Chiov.) Lye = **K. erecta**
erectus var. *luridus* (Kük.) Kük. = **K. brevifolia** var. **lurida**

erectus fa. *minor* Kük. = **K. erecta**
erectus fa. *pallescens* Kük. = **K. erecta**
erectus var. *pleiocarpus* (Kük.) Kük. = **K. erecta**
erectus var. *schlechteri* (Kük.) Kük. = **K. erecta**
erectus sensu Andrews 1956 = **K. brevifolia** var. **brevifolia**
erinaceus (Ridl.) Kük. = **Sphaerocyperus erinaceus** (Actinoschoenus erinaceus)
eriocauloides (Steud.) Bauters = **Ascolepis eriocauloides**
erythraeus Schrad. = **Pycreus sanguinolentus**
erythrocephalus (S. S. Hooper) Bauters = **Ascolepis erythrocephalus**
esculentus Drège & E. Mey. 1843, non L. 1753 = **Cyperus prolifer**
esphacelatus Kük. = **Cyp. dilatatus**
exaltatus Retz. var. *digynus* (Boeckeler) F. N. Williams = **Cyp. alopecuroides**
exaltatus var. *divergens* Kük. = **Cyp. exaltatus** var. **exaltatus**
exaltatus var. *dives* (Delile) C. B. Clarke = **Cyp. exaltatus** var. **dives**
exaltatus var. *iwasakii* (Makino) T. Koyama = **Cyp. exaltatus** var. **exaltatus**
exaltatus var. *minor* J. M. Black = **Cyp. exaltatus** var. **exaltatus**
exaltatus var. *serpens* Kük. = **Cyp. exaltatus** var. **exaltatus**
excisus Boeckeler = **Cyp. conglomeratus** (**C. jeminicus**)
eximius (C. B. Clarke) Mattf. & Kük. = **Kyllinga eximia**
eximius var. *kelleri* (C. B. Clarke) Kük. = **K. comosipes** subsp. **comosipes**
fallaciosus (Cherm.) Raymond = **Pycreus flavescens** subsp. **flavescens**
familiaris Steud. = **Torulinium odoratum**
fascicularis Poir. 1806 = **Pycreus polystachyos** var. **polystachyos**
fastigiatus Forssk., non Rottb., nec Willd. ex Kunth = **Cyperus alopecuroides**
felicis (J. Raynal) Lye = **Pycreus felicis**
fenzelianus Steud., incl. var. *badiiformis* Chiov. = **Cyperus longus** subsp. **longus**
ferax Rich., incl. many vars. = **Torulinium odoratum**
ferox Vahl = **T. odoratum**
ferrugineoviridis (C. B. Clarke) Kük., incl. var. *distantiformis* and var. *luteiformis* Kük. = **Mariscus ferrugineoviridis**
ferrugineus Poir. 1806, incl. var. *baronii* (C. B. Clarke) Kük. = **Pycreus intactus**
fibrillosus Kük. = **Pycreus fibrillosus**
fibrillosus incl. var. *vanderystii* (Cherm.) Kük. and fa. *katangensis* (Cherm.) Kük., and var. *scaettae* (Cherm.) Kük. = **P. scaettae**
fibrillosus sensu Friis & Vollesen 2005 = **Pycreus** ? **diloloensis**
fimbristyloides T. Koyama 1960 = **Alinula paradoxa**
firmipes (C. B. Clarke) Kük. = **Mariscus amomodorus**
fissus Steud. = **Cyperus** doubtful species (Fl. Eth. & Eritrea 6: 488, 1997, type very immature)
flabelliformis Rottb. 1773, non (Kunth) Spreng. 1825 = **Cyp. alternifolius** subsp. **flabelliformis**
flabelliformis var. *obtusangulus* Boeckeler = **Cyp. alternifolius** subsp. **flabelliformis**
flabelliformis (Kunth) Spreng. 1825 = **Mariscus flabelliformis**
flagellatus Hochst. = **Cyperus alternifolius** subsp. **flabelliformis**
flavescens L. = **Pycreus flavescens**

flavescens fa. *abyssinicus* (Hochst. ex A. Rich.) Kük., and var. *abyssinicus* (Hochst. ex A. Rich.) C. B. Clarke = **P. flavescens** subsp. **flavescens**
flavescens subsp. *fallaciosus* (Cherm.) Lye = **P. flavescens** subsp. **flavescens**
flavescens subsp. *intermedius* (Rikli) Lye = **P. flavescens** subsp. **intermedius**
flavescens subsp. *laevinux* Lye = ? **P. overlaetii**
flavescens subsp. *microglumis* (Lye) Lye, non (Willd.) Pursh, and var. *castaneus* (Lye) Lye = **P. flavescens** subsp. **microglumis** and var. **castaneus**
flavescens var. *rehmannianus* (C. B. Clarke) Kük. = **P. flavescens** subsp. **microglumis** var. **castaneus**
flavescens var. *rubromarginatus* Schrenk, and fa. *rubromarginatus* (Schrenk) Regel = **P. sanguinolentus**
flavescens var. *tanaensis* (Kük.) Lye = **P. flavescens** subsp. **tanaensis**
flavidus sensu C. B. Clarke, Fl. Trop. Afr. 8: 333, 1901, and Rendle 1899, non Retz. 1788 = **Cyperus tenuispica**
flavissimus Steud. 1829 = **Cyp. denudatus**
flavissimus Schrad. 1821 = **Cyp. sphaerocephalus**
flexifolius Boeckeler 1879, non Boeckeler ex Reinecke 1898 = **Cyp. imbricatus**
fluitans (L.) Missbach & E. H. L. Krause = **Isolepis fluitans**
fluminalis Ridl., incl. var. *longifolius* (Cherm.) Kük. = **Pycreus fluminalis**
foliosus Willd. ex Kunth = **P. intactus**
foliosus K. Schum., 1895. = **Mariscus luteus**
fontanesii Kunth = **Pycreus flavescens**
fonticola Kunth = **Cyperus marginatus**
fontinalis (Cherm.) Kük. = **Pycreus sanguineosquamatus** (cf. also under **P. fontinalis**)
frerei C. B. Clarke = **Cyperus crassipes**
frerei sensu Chiov. 1916 = **Cyp. benadirensis**
fresenii Steud. = **Cyp. dichostachyus**
friesii Kük. = **Mariscus amauropus**
fulgens C. B. Clarke var. *contractus* Kük. = **Cyperus usitatus** subsp. **palmatus**
fulgens s. lat. sensu Podlech 1967 = **Cyp. usitatus** subsp. **palmatus**
fulvus Ridl. = **Pycreus nitidus**
fuscovaginatus Kük. = See at end of **Mariscus**
geminiflorus (Steud.) Wickens = **Kyllinga bulbosa**
ghanechinatus Huygh = **K. echinata**
ginge Welw. 1859 = **Cyperus alternifolius** subsp. **flabelliformis**
giolii Chiov., incl. var. *nogalensis* (Chiov.) Kük. = **Cyp. grandibulbosus**
glaucoviridis Boeckeler = **Mariscus ligularis**
globifer (C. B. Clarke) Lye = **M. amomodorus**
globosus Forssk. 1775, non All. 1789 = **M. schimperi**
globosus var. *nuerensis* (Boeckeler) Kük. = **Pycreus nuerensis**
goeringii Steud. = **Cyperus difformis**
gondanus Boeckeler = **Mariscus diurensis**
gossweileri Kük. = **Pycreus pubescens**
graciliculmis sensu Troupin, Fl. Rwanda 4: 446, 1988, non Lye = **Cyperus vandervekenii**
gracilinux C. B. Clarke = **Cyperus dilatatus**
gracillimus (Chiov.) Kük. = **Pycreus gracillimus**
gradatus Forssk. = **Cyperus alternifolius** subsp. **flabelliformis**
grantii Boeckeler = **Cyp. tenax**
gratus C. B. Clarke = **Cyp. cuspidatus**
guanipensis Schnee = **Pycreus pelophilus**

guineensis Nelmes = **Cyperus tenuiculmis** var. **guineensis**
gypsophilus Lye = **Mariscus gypsophilus**
hamiltonii Kunth = **Torulinium odoratum**
hamulatus Kunth = **Cyperus cuspidatus**
hamulosus M. Bieb. = **Mariscus hamulosus**
haspan L. var. *sphaerospermoides* (Cherm.) Cherm. = **Cyperus denudatus**
haspan Rottb. 1773, non L. 1753 = **Cyp. tenuispica**
hemadrii M. R. Almeida 2009 = **Cyp. tenuiculmis**
hemisphaericus Boeckeler, incl. var. *gregorii* (C. B. Clarke) Kük. and var. l*ongibracteatus* Peter ex Kük. = **Mariscus hemisphaericus**
herana Cherm. = **Cyperus latifolius**
herbivagus Kunth (non herbivacus Melliss) = **Cyperus semitrifidus**
heterophyllus Boeckeler = **Cyp. crassipes**
heudelotii C. B. Clarke = **Cyp. maculatus** subsp. **maculatus**
hildebrandtii Boeckeler = **Mariscus hemisphaericus**
hildebrandtii (C. B. Clarke) K. Schum. ex T. Durand & B. D. Jacks. = **Pycreus hildebrandtii**
hirtellus (Chiov.) Kük. = **Mariscus hirtellus**
hirtus Thunb. = **Fimbristylis squarrosa** var. **squarrosa**
hochstetteri Nees ex Krauss, incl. var. *russa* C. B. Clarke and var. *tenuis* Boeckeler = **Pycreus macrostachyos**
holoschoenus (L.) Missbach & E. H. L. Krausse 1900 = **Scirpoides holoschoenus**
holosericeus Link = **Pycreus polystachyos** var. **microdontus**
hortensis (Salzm. ex Steud.) Dorr = **Kyllinga pumila**
huillensis Ridl. = **Cyperus denudatus**
hyalinus Vahl, incl. var. *substerilis* (E. G. Camus) Kük. = **Queenslandiella hyalina**
hylaeus Ridl. = **Cyperus renschii**
hystricoides (B. Nord.) Bauters = **Lipocarpha rehmannii**
ibeensis C. B. Clarke = **Mariscus amauropus**
imerinensis Boeckeler = **Cyperus papyrus** subsp. **madagascariensis**
immanis Nelmes = **Cyp. koyaliensis**
immensus C. B. Clarke, incl. var. *petherickii* (C. B. Clarke) Kük. and var. *taylorii* C. B. Clarke = **Cyp. dives**
impubes Steud. = **Mariscus impubes**
impubes var. *brevispiculosus* Kük. = **M. impubes** var. **impubes**
impubes var. *rohlfsii* (Boeckeler) Kük. = **M. rohlfsii**
inauratus (Nees ex Boeckeler) Mattf. & Kük. = **Kyllinga inaurata**
inauratus var. *laevicarinatus* Kük. = **K. inaurata**
indecorus Kunth var. *indecorus* = **Mariscus sumatrensis**
indecorus var. *decurvatus* (C. B. Clarke) Kük. = **M. rehmannianus**
indecorus var. *dinteri* Kük. = **M. rehmannianus**
indecorus var. *inflatus* (C. B. Clarke) Kük. and var *namaquensis* Kük. = **M. albomarginatus**
inflexus Muhl., incl. var. *acaulis* Hook. f. and var. *elongatus* Hook. f. = **M. squarrosus**
inselbergensis Lye = **Kyllinga inselbergensis**
intactus Vahl = **Pycreus intactus**
intermedius Steud. 1842 = **P. flavescens** subsp. **intermedius**
involucratus Rottb. 1772 = **Cyperus alternifolius** subsp. **flabelliformis**
involucratus Poir. 1806 = **Cyp. imbricatus**
involutus R. Br. 1814 = **Cyp. conglomeratus** subsp. **conglomeratus**

involutus (C. B. Clarke) K. Schum. 1900 = **Mariscus solidus**
ischnocormus Steud. = **Pycreus elegantulus**
isocladus Kunth = **Cyperus prolifer**
isolepis (Nees) Bauters = **Lipocarpha hemisphaerica**
italicus Rottb. 1772, non Tod. 1861 = **Cyperus michelianus** subsp. **michelianus**
iwasakii Makino = **Cyp. exaltatus** var. **exaltatus**
jacquemontii Boeckeler = **Pycreus lanceolatus**
jardinei Steud. = **Cyperus crassipes**
javanicus Houtt. = **Mariscus albescens** (See at end of **Mariscus**)
jeminicus Retz. 1786 = **Cyperus bulbosus**
jeminicus Rottb. 1773 = (**Cyp. jeminicus** =) **Cyp. conglomeratus**
jocladus E. Mey. = **Cyp. prolifer**
junciformis Desf. 1798 = **Cyp. laevigatus** subsp. **laevigatus** or subsp. **distachyos**
junciformis Cav. 1795 = **Cyp. laevigatus** subsp. **distachyos**
juncoides Lam. = **Cyp. haspan**
kalli (Forssk.) Murb. = **Cyp. capitatus**
kamphoeveneri Boeckeler = **Cyp. maculatus**
karisimbiensis (Cherm.) Kük., incl. var. *longinux* (Kük.) Kük. = **Mariscus karisimbiensis**
keniensis Kük. = **M. longibracteatus**
kernii (Raymond) Bauters = **Lipocarpha kernii**
kerstenii Boeckeler, incl. var. *irregularis* Kük. = **Mariscus kerstenii**
kerstingii Engl. 1908 = **?** (unplaced name)
kilianii (Muasya & D. A. Simpson) Lye = **Kyllinga kilianii**
kipasensis sensu Haines & Lye 1983, non Cherm. 1934 = **Cyperus haspan**
kivuensis Cherm. = **Cyp. platycaulis**
kleinianus Hochst. ex Steud. = **Courtoisina cyperoides**
koenigii Vahl = **Cyperus corymbosus**
kotschyanus Fenzl ex Steud. = **Cyp. nutans** var. **eleusinoides**
kottensis Cherm. = **Cyperus tonkinensis** var. **baikiei**
kuebensis Kük. = **Cyp. hensii**
kyllingia Endl. 1842, incl. forms = **Kyllinga nemoralis**
kyllingia var. *latifolius* (Boeckeler) Kük. = **K. nemoralis**
kyllingiella Larridon = **Kyllingiella microcephala**
killingiformis ("*kyllingaeformis*") Lye = **Mariscus kitaleensis**
kyllingioides Vahl, incl. var. *incrassatus* (C. B. Clarke) Kük. = **Mariscus dubius**
labiatus Peter 1928 = **Cyperus latifolius**
laevigatus L. var. *albidus* Vahl, and subsp. *albidus* (Vahl) Maire & Weiller, and fa. *altratus* Peter ex Kük., and var. *ramlehensi*s Sickenb., and var. *subaphyllus* (Boeckeler ex Schinz) Kük. = **Cyp. laevigatus** subsp. **laevigatus**
laevigatus var. *distachyos* (All.) Coss. & Durieu = **Cyp. laevigatus** subsp. **distachyos**
laevigatus subsp. *distachyos* (All.) P. H. Davis = **Cyp. laevigatus** subsp. **distachyos**
laevigatus var. *pictus* Boeckeler = **Cyp. laevigatus** subsp. **laevigatus** or subsp. **distachyos**
lanatus Ruiz ex Boeckeler = **Fimbristylis pilosa**
lanceola Ridl. = **Cyperus fertilis**
lanceolatus Poir. = **Pycreus lanceolatus**
lanceus Thunb. 1794 = **P. nitidus**
lanceus var. *angustifolius* Ridl. and var. *macrostachya* Kunth = **P. macranthus**
lanceus F. Muell. 1874 = **P. unioloides**
lanceus var. *angustifolius* Ridl., and var. *macrostachya* Kunth = **P. macranthus**
lanceus fa. *densior* (Cherm.) Kük., var. *divaricatus* Kük., var. *grantii* C. B. Clarke, var. *humilis* Kunth, var. *melanopus* (Boeckeler) Kük., var. *palaestinensis* Kük., and var. *ramosus* Kük. = **P. nitidus**
lanceus var. *mucronatus* Kunth = **P. permutatus**
lapidicoleus Kük. = ? = **Cyperus semitrifidus**
lateralis Forssk. = **Cyp. laevigatus** subsp. **laevigatus**
lateriflorus Torr. 1858 = **Cyp. difformis**
lateriflorus Steud. 1829 = **Cyp. longus** subsp. **longus**
laxespicatus Kük., incl. var. *brunneotinctus* Kük., and var. *percrassus* Kük. = **Pycreus laxespicatus**
laxespicatus var. *testui* (Cherm.) Kük. = **P. testui**
laxus R. Br. 1814, non Lam. 1791 = **Cyperus bulbosus**
laxus Vahl 1806 = **Mariscus longibracteatus**
ledermannii (Kük.) S. S. Hooper, and var. *polyphyllus* Boeckeler = **Cyperus niveus** var. **leucocephalus**
leptocladus Oliv. 1887, nom. nud., non Kunth 1837 = **Cyp. glaucophyllus**
leptolepis Peter ex Kük. = **Mariscus amauropus**
leptophyllus Hochst. ex Steud. 1854, in syn., and (Hochst. ex Steud.) C. B. Clarke, incl. fa. *conglobata* Kük., var. *deliciosus* Kük., var *friesii* (Kük.) Kük., and var. *ibeensis* (C. B. Clarke) Kük. = **M. amauropus**
leptorhachis Mattf. & Kük. = **Kyllinga debilis**
leptostachys Nees, non *leptostachyus* Griff. = **Cyperus tenuispica**
leucaspis (J. Raynal) Bauters = **Lipocarpha leucaspis**
leucocephalus Retz. 1788, non Hassk. 1848 = **Cyperus** ? **pulchellus** (from India to Viet-Nam)
leucocephalus Hassk. 1848 = **Kyllinga nemoralis**
liebmannii Steud. = **Pycreus polystachyos** var. **polystachyos**
ligularis L. (non Hemsl.), incl. var. *spicatocapitatus* ["Jardin"] (Steud.) Kük. = **Mariscus ligularis**
lipoater Goetgh. = **Lipocarpha atra**
lipocarpha T. Koyama = **L. chinensis**
lipocarphioides (Kük.) Lye = **Alinula lipocarphioides**
lipocomosus Goetgh. = **Lipocarpha comosa**
lipofiliformis Goetgh. = **L. filiformis**
lipomonostachyus Goetgh. = **L. monostachya**
liporobinsonii Goetgh. = **L. robinsonii**
lipothermalis Goetgh. = **L. thermalis**
locuples C. B. Clarke = **Cyperus sphacelatus**
longibracteatus (Cherm.) Kük., incl. var. *niger* (C. B. Clarke) Lye, var. *rubrotinctus* (Cherm.) Kük., and var. *subdistans* Kük. = **Mariscus longibracteatus**
longistolon Peter & Kük., incl. subsp. *atrofuscus* (Lye) Lye = **Pycreus longistolon**
longus Boeckeler 1880, non L. 1753 = **Cyperus rotundus**
longus L. var. *adoensis* (Hochst. ex A. Rich.) Boeckeler = **Cyp. rigidifolius**
longus var. *badiiformis* (Chiov.) Kük. = **Cyp. longus** subsp. **longus**
longus var. *badius* (Desf.) Cambess. = **Cyp. longus** subsp. **badius**
longus subsp. *badius* (Desf.) Soó = **Cyp. longus** subsp. **badius**
longus var. *maculatus* (Boeckeler) Boeckeler = **Cyp. maculatus**
longus var. *pallescens* (Desf.) Coss. & Durand = **Cyp. corymbosus**
longus var. *pallidior* Kük. = **Cyp. longus** subsp. **longus**
longus var. *pallidus* Boeckeler = **Cyp. longus** subsp. **longus**

longus var. *tenuiflorus* (Rottb.) Boeckeler = **Cyp. longus** subsp. **longus**
lucentinigricans K. Schum. = **Cyp. platycaulis**
lucidulus C. B. Clarke 1884 = **Cyp. zollingeri**
luteus Boeckeler, incl. var. *manongarivensis* (Cherm.) Kük. = **Mariscus luteus**
luzuliformis Boeckeler = ? **M. sumatrensis**
macranthus Boeckeler, incl. var. *angustifolius* (Ridl.) Kük. = **Pycreus macranthus**
macranthus fa. *acuticarinatus* (Kük.) Kük. = **P. acuticarinatus**
macranthus var. *angustifolius* (Ridl.) Kük. = **P. macranthus**
macranthus var. *mucronatus* (Kunth) Kük. = **P. permutatus**
macranthus var. *mucronatus* fa. *acuticarinatus* (Kük.) Kük. = **P. acuticarinatus**
macrocarpus (Kunth) Boeckeler, incl. var. *excelsior* Kük., var. *humbertii* (Cherm.) Kük., var. *kraussii* (Boeckeler) Kük., var. *pseudoflavus* (C. B. Clarke) Kük., and var. *submacrocarpus* Kük. = **Mariscus sumatrensis**
macropus Boeckeler = **M. amomodorus**
macrorrhizus sensu Thulin, Fl. Somalia 4: 126, 1995, p.p., non Nees 1834, nec Nees ex Boiss. 1882 = **Cyperus gubanii**
macrostachyos Lam., incl. subsp. *tremulus* (Poir.) Lye = **Pycreus macrostachyos**
maculatus Boeckeler var. *naumannianus* (Boeckeler) Kük. = **Cyperus maculatus** subsp. **maculatus**
madagascariensis (Willd.) Roem. & Schult. = **Cyp. papyrus** subsp. **madagascariensis**
maderaspatanus Willd. = **Mariscus maderaspatanus**
majestuosus (P. A. Duvign. & G. Léonard) Bauters = **Ascolepis majestuosa**
major (Boeckeler) Cherm., incl. var. *micranthus* Cherm. = **Cyperus mapanioides**
malawicus (J. Raynal) Lye = **Alinula malawica**
manongarivensis Cherm. = **Mariscus luteus**
maranguensis K. Schum. var. *ferrugineoviridis* C. B. Clarke = **Mariscus ferrugineoviridis**
margaritaceus Vahl var. *karlschumannii* (C. B. Clarke) Kük. = **Cyperus karlschumannii**
margaritaceus var. *nduru* (Cherm.) Kük. = **Cyp. nduru**
margaritaceus var. *prorepens* Kük., and var. *pseudoniveus* (Boeckeler) C. B. Clarke = **Cyp. margaritaceus**
margaritaceus var. *tisserantii* (Cherm.) Kük. = **Cyp. niveus** var. **tisserantii**
mariscus Nees = **Cyp. albostriatus**
maritimus (Lam.) P. Silva 1948, nom. illeg. = **Cyp. capitatus**
maritimus Poir. 1806, incl. var. *crassipes* (Vahl) C. B. Clarke, var. *gracilescens* Kük., and var. *subtilis* (Kük.) Väre & Kukkonen = **Cyp. (subtilis =) crassipes**
maritimus (Miq.) Valck. Sur. 1898 = **Mariscus dubius**
maritimus Gouan ex Spreng. 1824 = **Cyperus laevigatus** subsp. **laevigatus**
mauretaniensis Väre & Kukkonen = See under **Cyp. conglomeratus**
mbitheanus (Muasya) Huygh = **Kyllinga mbitheana**
meeboldii Kük. var. *gigas* Berhaut = **Cyperus clavinux**
melanacme (Nelmes) Raymond = **Pycreus melanacme**
melanocephalus R. Br. 1814, nom. nud., non Miq. 1856 = **P. elegantulus**
melanopus Boeckeler = **P. nitidus**
melanorhizus Delile = **Cyperus esculentus**

melanospermus (Nees) Valck. Sur. = **Kyllinga melanosperma**
melanospermus var. *hexalatus* (Lye) Lye = **K. melanosperma** var. **hexalata**
melanospermus var. *imerinensis* (Cherm.) Kük., var. *perrieri* (Cherm.) Kük., and var. *plurifoliatus* (Kük). Kük. = **K. melanosperma** var. **melanosperma**
melanospermus subsp. *elatus* (Steud.) Lye = **K. polyphylla** var. **polyphylla**
melas Ridl. = **Pycreus melas**
merkeri C. B. Clarke = **Cyperus rotundus**
merxmuelleri (Podlech) Lye = **Kyllinga albiceps**
metallorum (P. A. Duvign. & G. Léonard) Bauters = **Ascolepis metallorum**
metzii (Hochst. ex Steud.) Mattf. & Kük. = **Kyllinga squamulata**
micans Kunth = **Pycreus intactus**
microaureus Lye = **Alinula peteri**
microbolbos C. B. Clarke = **Mariscus microbolbos**
microbracteatus (Lye) Lye = **Kyllinga microbracteata**
microbulbosus (Lye) Lye = **K. microbulbosa**
microcephalus F. Muell. = **K. erecta**
microcristatus Lye = **K. microcristata**
microdontus Torr. = **Pycreus polystachyos** var. **microdontus**
microlepis Boeckeler 1879, non Baker 1877 = **Cyperus submicrolepis**
micromariscus Lye = **Cyp. (Mariscus) micromariscus**
micromedusaeus Lye = **Mariscus micromedusaeus**
micromelas (Lye) Lye = **Pycreus micromelas**
micropelophilus Lye = **P. micropelophilus**
microstachyus Vahl = **Cyperus amabilis**
microstylus (C. B. Clarke) Mattf. & Kük. = **Kyllinga microstyla**
microumbellatus Lye = ? **Cyperus prolifer × Cyp. haspan**
mindorensis (Steud.) Huygh = **Kyllinga nemoralis**
minor Steud. = **Pycreus intactus**
minutulus K. Schum. = **Pycreus hildebrandtii**
mollipes (C. B. Clarke) K. Schum. = **Mariscus amomodorus**
mollipes var. *amomodorus* (K. Schum.) Kük., and var. *bulbocaulis* (Boeckeler) Kük., and var. *globifer* (C. B. Clarke) Kük. = **M. amomodorus**
mollipes var. *paolii* (Chiov.) Kük. (= **M. paolii** = **M. owanii**) = **M. solidus**
monocephalus Baker 1887, nom. illeg., non F. Muell. = **Pycreus fluminalis**
monocephalus F. Muell. 1874 = **Kyllinga erecta**
monoflorus Lye = **K. uniflora**
monostachyos L., non Link 1879 = **Abildgaardia ovata**
monostachyos Link 1879 = **Cyperus laevigatus** subsp. **laevigatus**
monostigma C. B. Clarke p.p. = **Cyp. clavinux**
monostigma C. B. Clarke p. min. p. (Chevalier 4170) = **Pycreus scaettae**
monroviensis Boeckeler = **Cyperus tenax**
morandinii Pic. Serm. = **Cyp. penzoanus**
mortonii (S. S. Hooper) Lye = **Pycreus mortonii**
mortinii sensu Haines & Lye 1983: 273, 277 = **P. unioloides**
mossambicensis Parl. = **Cyperus papyrus** subsp. **papyrus**
mossii Turrill = **Cyp. albostriatus**
mucronatus (L.) Mabille 1867, non Steud. 1854, nec Rottb. 1772 = **Cyp. capitatus**
mucronatus Rottb. 1772 = **Cyp. laevigatus** subsp. **distachyos** or subsp. **laevigatus**

muelleri Boeckeler = **Cyp. amabilis**
multiglumis Turrill = **Cyp. semitrifidus**
mundii (Nees) Kunth = **Pycreus mundii**
mundii var. *densispiculosus* Kük. = **P. mundii** var. **densispiculosus**
mundii fa. *distichophyllus* (Steud.) Kük. and var. *distichophyllus* (Steud.) Kük. = **P. mundii** var. **uniceps**
mundii var. *glaucus* Boeckeler and var. *gracilis* (Cherm.) Robyns & Tournay = **P. mundii** var. **mundii**
mundii var. *uniceps* (C. B. Clarke) Kük. = **P. mundii** var. **uniceps**
muricatus Kük. = **P. muricatus**
myrmecias Ridl. = **Mariscus myrmecias**
naumannianus Boeckeler = **Cyperus maculatus** subsp. **maculatus**
neobarteri T. Koyama = **Lipocarpha barteri**
neocooperi Reynders = **Pycreus cooperi**
neoschimperi Kük., incl. var. *subvirescens* Peter & Kük., and var. *viridis* (Hochst. ex Schweinf.) Kük. = **Mariscus schimperi**
nervosus Bertol. = **Cyperus esculentus**
neurotropis Steud. = **Pycreus sanguinolentus**
ngothe (Mtot.) Huygh = **Kyllinga ngothe**
niger Ruiz & Pav. = **Pycreus niger**
niger subsp. *elegantulus* (Steud.) Lye = **Pycreus elegantulus**
nigricans Steud., incl. var. *firmior* Kük. and var. *simulans* (Cherm.) Kük. = **P. nigricans**
nigriceps Huygh = **Kyllinga brevifolia** var. **lurida**
nigripes (C. B. Clarke) Kük. = **K. nigripes** (Malawi, Buchanan s. n., fide Fl. Trop. Afr. 8: 285, 1902; Tanzania presence doubtful fide Fl. Trop. E. Afr., Cyper.: 346, 2010)
nigripes var. *grandiceps* Kük. = **K. alba** subsp. **alba**
nigritanus (C. B. Clarke) Lye = **K. alba** subsp. **alba**
niloticus Forssk. = **Cyperus articulatus**
nitens Retz. 1788, incl. var. *muticus* Boeckeler = **Pycreus pumilus**
nitens Vahl 1805 = **P. pumilus**
nitidus Lam. = **P. nitidus**
niveus Retz. var. *flavissimus* (Schrad.) Lye = **Cyperus sphaerocephalus**
niveus var. *flavissimus* auct., non (Schrad.) Lye, (misidentified) = **Cyp. austrochrysanthus**
niveus var. *ledermannii* (Kük.) Lye = **Cyp. niveus** var. **leucocephalus**
njombensis Huygh = **Kyllinga uniflora**
nodosus Humb. & Bonpl. ex Willd., incl. var. *aphyllus* Boeckeler and var. *subnodosus* (Nees & Meyen) Boeckeler = **Cyperus articulatus**
nubianus Gand. = **Cyp**. (**jeminicus** =) **conglomeratus**
nubicus C. B. Clarke = **Cyp. rotundus**
nudicaulis Poir. = **Anosporum pectinatum**
nudiculmis Sieber ex C. B. Clarke = **Cyperus schimperianus**
nudus Roxb. 1832, non Kunth 1816 = **Cyp. corymbosus**
nudus Kunth 1816 = **Cyp. haspan**
nuerensis Boeckeler = **Pycreus nuerensis**
nutans Sieber ex C. Presl 1828, non Vahl 1805 = **Mariscus longibracteatus**
nutans subsp. *eleusinoides* (Kunth) T. Koyama = **Cyperus nutans** var. **eleusinoides** (Kunth) Haines
nyasensis (Podlech) Lye = **Mariscus nyasensis**
nyassicus Chiov. = **Cyperus papyrus** subsp. **nyassicus**
nyikanus Govaerts = **Kyllinga oblonga**

obbiadensis Chiov. = **Mariscus** (See at end of genus)
oblongoincrassatus Kük. = **M. taylorii**
oblongoincrassatus Kük. var. *clarior* Kük. = **M. rohlfsii**
oblongoincrassatus var. *groteanus* Kük. and var. *udigensis* Kük. = **M. taylorii**
oblongus (C. B. Clarke) Kük. = See under **Kyllinga nervosa** and **Kyllinga oblonga**
oblongus subsp. *flavus* (C. B. Clarke) Lye = **K. nervosa** subsp. **flava**
oblongus subsp. *jubensis* (Mtot.) Lye = **K. nervosa** subsp. **jubensis**
oblongus subsp. *nervosus* (Steud.) Lye = **K. nervosa**
oblongus subsp. *oblongus* = **K. oblonga**
oblongus var. *ruwenzoriensis* (C. B. Clarke) Kük. = **K. polyphylla** var. **elatior**
obsoletenervosus Peter & Kük. = **Mariscus albomarginatus**
obtusatus (J. Presl & C. Presl) Mattf. & Kük. p.p. = **Kyllinga vaginata** (the true **K. obtusata** is from S. America)
obtusatus var. *africanus* Kük. = **K. erecta**
obtusiflorus Vahl = **Cyperus niveus** var. **leucocephalus**
obtusiflorus var. *flavissimus* (Schrad.) Boeckeler = **Cyp. sphaerocephalus**
obtusiflorus var. *ledermannii* Kük. = **Cyp. niveus** var. **leucocephalus**
obtusiflorus var. *macrostachys* (Gräbn.) Robyns & Tournay = **Cyp. niveus** var. **leucocephalus**
obtusiflorus var. *membranaceus* Kük. = **Cyp. niveus** var. **leucocephalus**
obtusiflorus var. *niveoides* (C. B. Clarke) Kük. = **Cyp. niveoides**
obtusiflorus var. *paramoenus* Kük. = **Cyp. niveus** var. **leucocephalus**
obtusiflorus var. *rigidus* (Vahl) Kük. = **Cyp. niveus** var. **leucocephalus**
obtusiflorus var. *sphaerocephalus* (Vahl) Kük. = **Cyp. sphaerocephalus**
obtusiflorus var. 'Stylo bifido' Ridl. 1844 = **Cyp. angolensis**
obtusiflorus var. *tenerior* (C. B. Clarke) Kük. = **Cyp. niveus** var. **leucocephalus**
ochrocarpus K. Schum. = **Cyp. renschii**
ochrocephalus C. B. Clarke 1894 = **Cyp. angolensis**
ochrocephalus Steud. 1842 = **Cyp. eragrostis**
odoratus L. = **Torulinium odoratum**
olidus Vahl = **Pycreus polystachyos** var. **polystachyos**
olivaceus Vahl = **P. polystachyos** var. **polystachyos**
olivetorum Murb. = **Cyperus** (**jeminicus** =) **conglomeratus**
onustus Steud. = **Cyp. alternifolius** subsp. **alternifolius**
ornithopodioides Delile, nom. nud. = **Cyp. digitatus** subsp. **auricomus**
oryzetorum Steud. = **Cyp. difformis**
ossicaulis Lye = **Mariscus ossicaulis**
overlaetii (Cherm. ex S. S. Hooper & J. Raynal) Lye = **Pycreus overlaetii**
owanii Boeckeler, incl. var. *rogersii* Kük. (= **Mariscus owanii**) = **M. solidus**
pachystylus (Kük.) Kük. = **Kyllinga pachystyla**
pagotii (J. Raynal) Lye = **Pycreus pagotii**
palmatus (Lye) C. Archer & Goetgh. = **Cyperus usitatus** subsp. **palmatus**
palmatus Vorster ined. 1978 = **Cyp. usitatus** subsp. **palmatus**
panicoides Lam. = **Cyp. iria**

panormitanus Chiov. = **Cyp. papyrus** subsp. **papyrus**
paolii Chiov. = **Mariscus paolii** (nom. altern.)
papyrus sensu auctt., i. a. A. Chev., non L. 1753 = **Cyperus koyaliensis**
papyrus subsp. *antiquorum* (Willd.) Chiov., and var. *antiquorum* (Willd.) C. B. Clarke, and subsp. *antiquorum* (Willd.) Kük., and subsp. *hadidii* Chrtek & Slavíková, and var. *niliacus* Tournay, and subsp. *niliacus* Tournay, and subsp. *ugandensis* (Chiov.) Kük. = **Cyp. papyrus** subsp. **papyrus**
paradoxus Steud. = **Cyp. michelianus** subsp. **pygmaeus**
parvinux C. B. Clarke = **Cyp. rupestris**
patens Vahl = **Pycreus pumilus**
pauper Hochst. ex A. Rich. = **P. pauper**
pectinatus Vahl = **Anosporum pectinatum**
pedunculatus (R. Br.) J. Kern = **Remirea maritima**
pelophilus Ridl., incl. fa. *nanus* Kük. = **Pycreus pelophilus**
pennatus Lam. 1791, non Boeckeler 1870 = See under **Mariscus albescens** at end of genus **Mariscus**
permutatus Boeckeler = **Pycreus permutatus**
perrieri (Cherm.) Hoenselaar = **Mariscus perrieri**
perspicuus (S. S. Hooper) Bauters = **Lipocarpha perspicua**
persquarrosus T. Koyama = **L. nana**
peruvianus (Lam.) F. N. Williams = **Kyllinga vaginata**
peruvianus var. *foliatus* (Kük.) Kük. = **K. tibialis**
peteri Kük. = **K. peteri**
petersianus Boeckeler = **Cyperus alternifolius** subsp. **flabelliformis**
petherickii C. B. Clarke = **Cyp. exaltatus** var. **dives**
phaeorhizus K. Schum., incl. var. *princeae* (C. B. Clarke) Kük. = **Cyp. haspan**
phillipsiae (C. B. Clarke) Kük. = **Mariscus phillipsiae**
pilosulus (C. B. Clarke) K. Schum. ex Kük. = **Mariscus pilosulus** – See at end of **Mariscus**
pinguis (C. B. Clarke) Mattf. & Kük. = **Kyllinga polyphylla** var. **elatior**
plateilema (Steud.) Kük. = **Mariscus plateilema**
platycaulis Baker var. *kipasensis* (Cherm.) Peter ex Kük. = **Cyperus kipasensis**
platycaulis var. *lucentinigricans* (K. Schum.) Kük. = **Cyp. platycaulis**
platycaulis var. *recedens* Peter & Kük. = **Cyp. denudatus**
platycaulis var. *serpens* (Cherm.) Kük. = **Cyp. platycaulis**
platycaulis sensu auctt., non Baker = **Cyp. denudatus**
pluribracteatus (Kük.) Govaerts = **Mariscus psilostachys** C. B. Clarke
pluricephalus Lye = **M. pluricephalus**
plurifoliatus (Nees) Suringar = **Kyllinga melanosperma** var. **melanosperma**
plurinervosus Bodard (= **Mariscus plurinervosus**) = **Cyperus conglomeratus** (See also under **Cyp. jeminicus** & **Cyp. plurinervosus**)
poecilus C. B. Clarke var. *evolutus* Kük. = **Cyperus benadirensis**
poikilostachys (Nelmes) Reynders, incl. var. *heterochrous* (Nelmes) Reynders = **Pycreus poikilostachys**
polyphyllus Vahl = **Cyperus bulbosus**
polystachyos var. *caespitosus* (Poir.) Kük., var. *fascicularis* (Poir.) Kuntze, var. *thouarsii* (Kunth) Kük., and var. *chlorstachys* (Boeckeler) Kük. = **Pycreus polystachyos** var. **polystachyos**
polystachyos Rottb. 1773 = **P. polystachyos**
polystachyos var. *baronii* C. B. Clarke, var. *ferrugineus* Boeckeler, and var. *micans* (Kunth) C. B. Clarke = **P. intactus**

polystachyos var. *holosericeus* (Link) C. B. Clarke and subp. *holosericeus* (Link) T. Koyama = **P. polystachyos** var. **microdontus**
polystachyos var. *laxiflorus* Benth. and subsp. *laxiflorus* (Benth.) Lye 1983 = **P. polystachyos** var. **microdontus**
polystachyos var. *leptostachyus* Boeckeler = **P. polystachyos** var. **microdontus**
polystachyos var. *sanguineus* Kük. = **P. nuerensis**
polystachys Cherm. 1922 = **Cyperus rotundus**
polystachys Boeckeler = **P. polystachyos** var. **polystachyos**
polystachyus Jungh. 1831, non *C. polystachyos* Rottb. 1773 = **Pycreus flavescens**
praealtus Kük. = **P. altus**
pratensis Boeckeler = **Mariscus pratensis**
pratensis var. *laxus* C. B. Clarke = **M. laxiflorus** (syn.: *Cyperus turrillii* Kük.)
prieurianus (Steud.) T. Koyama = **Lipocarpha prieuriana**
princeae C. B. Clarke = **Cyperus haspan**
prionodes Steud. = **Cyp. marginatus**
procerus Rottb. var. *stenanthus* Kük. and var. *vanderystii* Kük. = **Cyp. procerus**
prolifer Lam. var. *isocladus* (Kunth) Kük. = **Cyp. prolifer**
proteinolepis Steud., non Boeckeler, incl. var. *pumilus* = **Cyp**. (**jeminicus** =) **conglomeratus**
proteus (Welw.) Bauters = **Ascolepis protea**
protractus Link 1821, non Delile 1813 = **Cyperus difformis**
proximus Steud. = **Cyp. alternifolius** subsp. **flabelliformis**
pseudobrunneus (C. B. Clarke ex Cherm.) Kük., incl. vars. = **Mariscus pseudobrunneus**
pseudobulbosus (Mtot.) Lye = **Kyllinga pseudobulbosa**
pseudocallistus Kük., incl. var. *angustialatus* Kük. = **Mariscus albomarginatus**
pseudodiaphanus (S. S. Hooper) Lye 1983 and 2011, incl. var. *occidentalis* (S. S.Hooper) Reynders = **Pycreus pseudodiaphanus**
pseudohildebrandtii Kük. = **P. hildebrandtii**
pseudokyllingioides Kük., incl. var. *africanus* Kük. = **Courtoisina cyperoides**
pseudoleptocladus Kük., incl. var. *polycarpus* Kük. = **Cyperus glaucophyllus**
pseudoniveus Boeckeler = **Cyp. margaritaceus**
pseudopeteri (Goetgh.) Bauters = **Ascolepis pseudopeteri**
pseudopilosus (C. B. Clarke) Govaerts = **Mariscus pseudopilosus**
pseudosomaliensis Kük. = **M. somaliensis**
pseudosphacelatus Chiov. 1915, non Boeckeler 1890 (America) = **Cyperus dilatatus**
pseudovestitus (C. B. Clarke) Kük., incl. var. *polycarpus* Kük. = **Mariscus pseudovestitus**
pseudovestitus fa. *angustifolius* (Cherm.) Kük., and var. *astrocephalus* Kük., and var. *perrieri* (Cherm.) Kük. = **M. perrieri**
pseudovestitus sensu Haines & Lye 1983: fig. 427 p. 212 = **M. albomarginatus** or **M. schimperi**
psilostachys (C. B. Clarke) Kük., non Steud., incl. fa. *glabrescens* Kük. and var. *pluribracteatus* Kük., and var. *subrufus* Kük. = **M. psilostachys**
pubens Kük. = **M. pubens**
pumilus L. 1756, non Rottb. 1773, incl. var. *patens* (Vahl) Kük. and other vars. = **Pycreus pumilus**
pumilus Rottb. 1773 = **P. sanguinolentus**
pungens Boeckeler ex Aitch. & Hemsl. = **Cyperus conglomeratus** subsp. **conglomeratus**

pungens Boeckeler var. *elatus* Boeckeler, var. *multiceps* Boeckeler, and var. *tenuis* Boeckeler = **Cyp. macrorrhizus**
pungens var. *multiculmis* Boeckeler = **Cyp**. (**jeminicus** =) **conglomeratus**
purpureoglandulosus Mattf. & Kük. = **Kyllinga** (**sphaerocephala** Boeckeler 1875) – See under **K. bulbosa**
purpureoluteus (Ridl.) Bauters = **Lipocarpha albiceps**
purpureovaginatus Boeckeler = **Mariscus longibracteatus**
purpureus Boeckeler = **Cyperus schinzii**
pusillus Vahl = **Pycreus pumilus**
pustulatus Vahl var. *debilis* Kük., and var. *djalonis* A. Chev. ex Kük. = **Cyperus pustulatus**
pustulatus var. *tschinsendensis* (Turrill) Kük. = **Cyp. derreilema**
pustulatus Ridl., non Vahl = **Cyp. sphacelatus**
pygmaeus Rottb. = **Cyp. michelianus** subsp. **pygmaeus**
pygmaeus Rottb. var. *michelianus* (L.) Boeckeler = **Cyp. michelianus**
pygmaeus Cav., non Rottb., nec Retz., nec Nutt. = **Mariscus hamulosus**
quadriflorus Boeckeler = **M. impubes**
radiatus Vahl 1805, incl. var. *capitatus* Boeckeler, and var. *elongatus* Boeckeler and var. *minor* Boeckeler = **Cyperus imbricatus**
ramosii Kük. = **Cyp. zollingeri**
rarissimus Steud. = **Bulbostylis rarissima**
recurvispicatus Lye = **Mariscus recurvispicatus**
recurvus Vahl = **Cyperus cuspidatus**
rehmannianus (C. B. Clarke) K. Schum. 1898 sine descr. = **Mariscus rehmannianus**
rehmannianus (C. B. Clarke) Boeckeler ex Kuntze, incl. var. *bathiei* (Cherm.) Kük., and fa. *minor* Kük., and var. *rigidiculmis* Kük. = **Pycreus flavescens** subsp. **microglumis**
remotus (C. B. Clarke) Kük. = See under **Mariscus boreochrysocephalus**
resinosus Hochst. ex Steud. = **Cyperus iria**
retusus A. Rich. 1850 = **Pycreus macrostachyos**
retusus Nees ex Steud. 1854 = **P. macrostachyos**
retzii Nees 1834 = **Cyperus rotundus**
rheophyticus Lye = **Kyllinga rheophytica**
rheophytorum Lye "in press" = **K. rheophytica**
*rhizomafragil*is (Lye) Lye = **K. rhizomafragilis**
rhynchosporoides Kük. = **Mariscus rhynchosporoides** comb. nov. (See at end of **Mariscus**)
richardii Steud. 1854, incl. var. *angustior* (C. B. Clarke) Kük. and var. *oliganthus* (Cherm.) Kük. = **Kyllinga** (**sphaerocephala**) – See under **K. bulbosa**
ridleyi Mattf. & Kük. = **K. pauciflora**
rigidifolius Steud. var. *intercedens* Kük. = **Cyperus rigidifolius**
rigidus Vahl = **Cyp. niveus** var. **leucocephalus**
rionensis Boeckeler = **Mariscus ligularis**
riparius Schrad. ex Nees = **Cyperus haspan**
robinsonianus (Mtot.) Lye = **Kyllinga robinsoniana**
rohlfsii Boeckeler = **Mariscus rohlfsii**
rotundus L. subsp. *divaricatus* Lye = **Cyperus rotundus**
rotundus var. *fenzelianus* (Steud.) El-Hadidi = **Cyp. longus** subsp. **longus**
rotundus subsp. *merkeri* (C. B. Clarke) Kük., var. *platystachys* Bojer ex C. B. Clarke, subsp. *retzii* Kük., var. *spadiceus* Boeckeler, var. *taylorii* (C. B. Clarke) Kük., and subsp. *tuberosus* (Rottb.) Kük. = **Cyp. rotundus**

rotundus Kunth 1837 p.p., non L. 1753 = **Cyp. bulbosus**
rubicundus Willd. ex Link 1820, non Vahl 1805 = **Cyp. rotundus**
rubidomontanus (J. Browning) Larridon = **Pycreus rubidomontanus**
rubrotinctus (Cherm.) Kük. = **Mariscus longibracteatus**
rubroviridis Cherm., incl. var. *unicapitatus* Kük. = **Cyperus zollingeri**
rufus Kunth = **Mariscus ligularis**
rukwanus Huygh = **Kyllinga alba-purpurea**
rupestris Kunth var. *amnicola* (Kunth) Kük., and var. *parvinux* (C. B. Clarke) Kük. = **Cyperus rupestris**
ruwenzoriensis (C. B. Clarke) Huygh = **Kyllinga polyphylla** var. **elatior**
sabulicola Ridl. = **Cyperus tenax**
sahelii Väre & Kukkonen = ?, probably an annual form of **Cyp. conglomeratus**
salzmannii Steud. = **Cyp. cuspidatus**
sanguinolentus Vahl, incl. subsp. *nairobiensis* (Lye) Lye = **Pycreus sanguinolentus**
sanguinolentus var. *uniceps* C. B. Clarke = **P. mundii** var. **uniceps**
scaettae (Cherm.) Reynders incl. var. *vanderystii* (Cherm.) Reynders = **P. scaettae**
schimperianus Steud. var. *minor* Boeckeler = **Cyperus schimperianus**
schweinfurthianus Boeckeler = **Cyp. tenuiculmis** var. **schweinfurthianus**
schweinfurthii (Chiov.) Kük. = **Mariscus schweinfurthii**
scirpoides Vahl 1805 = **Cyperus crassipes**
scirpoides R. Br. ex Fresen. 1837 = **Cyp. dichrostachyus**
scleropodus Chiov. = **Mariscus scleropodus**
scott-elliotii Govaerts, Skvortsovía 4/3: 90, 2018 = **Kyllinga nervosa** subsp. **flava**
semitrifidus Schrad. var. *apricus* (Ridl.) Kük., var. *multiglumis* (Turrill) Kük., and var. *sanguinolentus* (Nees) Kük. = **Cyperus semitrifidus**
senegalensis C. B. Clarke 1894, nom. nud. = **Cyp. conglomeratus** subsp. **conglomeratus**
senegalensis (C. B. Clarke) Mattf. & Kük. 1936 = **Kyllinga** ? **polyphylla** var. **polyphylla**
serpens Cherm. = **Cyperus platycaulis**
serra A. Rich. = **Cyp. rubicundus**
serratangulus (Peter & Kük.) Huygh = **Kyllinga serratangula**
sesquiflorus (Torr.) Mattf. & Kük. = **K. odorata**
sesquiflorus subsp. *appendiculatus* (K. Schum.) Lye = **K. odorata** var. **major**
sesquiflorus subsp. *cylindricus* (Nees) T. Koyama, and var. *cylindricus* (Nees) Kük., incl. fa. *globosus* Kük. = **K. odorata** var. **cylindrica**
sesquiflorus fa. *elongatus* (Boeckeler) Kük. = **K. odorata** var. **odorata**
sesquiflorus var. *fallax* (Kük.) Kük. = **K. odorata** var. **major**
sesquiflorus fa. *globosus* Kük. = **K. odorata** var. **cylindrica**
sesquiflorus fa. *latifolius* (Boeckeler) Kük. = **K. nemoralis**
sesquiflorus var. *major* (C. B. Clarke) Kük. = **K. odorata** var. **major**
sesquiflorus var. *pluriceps* (Kük.) Kük. = **K. odorata** var. **odorata**
sesquiflorus subsp. *sesquiflorus* = **K. odorata** var. **odorata**
sesquiflorus fa. *spinulosus* Kük. = **K. odorata** var. **odorata**
setaceus (L.) Missbach & E. H. L. Krause = **Isolepis setacea**

setaceus Raddi 1823 = **Pycreus lanceolatus**
simpsonii (Muasya) Larridon = **Kyllingiella simpsonii**
sintenisii Boeckeler = **Mariscus ligularis**
smithianus Ridl. = **Pycreus smithianus**
smithianus sensu Kük. 1936 = **P. fluminalis**
smithii Schrad. 1832, non McClean 1927 = **Cyperus alternifolius** subsp. **textilis** (Thunb.) Verloove (S. Africa)
smithii McClean 1927 = **Cyp. leptocladus** Kunth (S. Africa)
socialis C. B. Clarke = **Mariscus pseudopilosus**
solidus C. B. Clarke = **M. solidus**
solidus Kunth var. *elatior* Kunth = **M. solidus**
solutus Steud. = **Cyperus cuspidatus**
somalicus Gand. = **Cyp. niveus** var. **leucocephalus**
somalidunensis Lye = **Mariscus somalidunensis**
sonderi J. A. Schmidt = **Pycreus polystachyos** var. **polystachyos**
songeensis (Lye) Lye = **Kyllinga songeensis**
sorostachys Boeckeler 1868 = **Cyperus pulchellus**
soyauxii Boeckeler, incl. subsp. *pallescens* Lye = **Mariscus soyauxii**
speciosus Vahl 1805, and Torr. 1858, sed non Lojac. 1909 = **Torulinium odoratum**
speciosus Lojac. 1909 = **Cyperus longus** subsp. **longus**
sp. fors. nov. A. Raynal = **Cyp. congensis** (See at end of **Mariscus**)
sp. nov. Hoenselaar ined. under (**Cyp. chrysocephalus**) = **Mariscus chrysocephalus**
sp. nov. in Cable & Cheek, Pl. Mt Cameroon: 156, 1998 = **Kyllinga rheophytica**
sphacelatus Rottb. var. *tenuior* C. B. Clarke = **Cyperus zollingeri**
sphaeranthelus Chiov. = **Cyp. meeboldii**
sphaerocephalus Vahl var. *leucocephalus* Kunth = **Cyp. niveus** var. **leucocephalus**
sphaerospermoides Cherm., incl. var. *transiens* Cherm. = **Cyp. denudatus**
spicatocapitatus Steud. in Jardin, nom. = **Mariscus ligularis**
spiculosus F. N. Williams 1904, non Rchb. 1828 = **Pycreus fluminalis**
spiralis Larridon, nom. superfl. = **Kyllingiella polyphylla**
spissiflorus "C. B. Clarke" sensu Baum 1903, non (C. B. Clarke) K. Schum. = **Cyperus hensii**
spissiflorus (C. B. Clarke) K. Schum. = **Pycreus spissiflorus**
spretus Steud. = **Cyperus denudatus**
squarrosus L. 1756, incl. var. *congestus* Benth. and var. *cylindraceus* Benth. = **Mariscus squarrosus** (L.) C. B. Clarke 1893
squarrosus F. Muell. 1874 = **Cyperus conglomeratus** subsp. **conglomeratus**
squarrosus var. *stenocarpus* F. Muell. 1874 = **Cyp. conglomeratus** subsp. **conglomeratus**
steudelianus Boeckeler = **Mariscus sumatrensis**
steudneri (Boeckeler) Larridon = **Kyllingiella polyphylla**
stramineoferrugineus Kük. = **Mariscus stramineoferrugineus**
stuhlmannii C. B. Clarke ex K. Schum. = **Cyperus usitatus** var. **usitatus**
suaveolens Boivin ex Cherm. 1919 = **Queenslandiella hyalina**
subaphyllus Boeckeler ex Schinz = **Cyperus laevigatus** subsp. **laevigatus**

subintermedius Kük., incl. var. *angustisquamatus* Kük. and var. *vicinus* (Cherm.) Kük. = **Pycreus flavescens** subsp. **intermedius**
subintermedius Lye 1983 = **P. flavescens** subsp. **intermedius**
sublaevicarinatus Mattf. & Kük. = **Kyllinga buchananii**
sublimis (C. B. Clarke) Dandy = **Mariscus sumatrensis**
submacropus Kük., incl. var. *abbreviatus* Kük., var. *calocephalus* Peter ex Kük., and var. *fuscofibrosus* Peter ex Kük. = **M. amomodorus**
submaculatus (Vahl) T. Koyama = **Lipocarpha chinensis**
subparadoxus Kük. = **Alinula paradoxa**
subsquarrosus (Muhl.) Bauters = **Lipocarpha micrantha**
subtilis (Kük.) Väre & Kukkonen – A form of **Cyperus crassipes**
subtrigonus (C. B. Clarke) Kük. = **Pycreus subtrigonus**
subumbellatus Kük., incl. var. *sessilispicatus* Kük., var. *subglobosus* Kük., var. *sublimis* (C. B. Clarke) Kük., and var. *thomensis* (C. B. Clarke) Kük. = **Mariscus sumatrensis**
subxerophilus Kük. = **Cyperus xerophilus**
sumbawangensis (Hoenselaar) Lye = **Pycreus sumbawangensis**
sylvestris Ridl. = **Cyperus laxus** subsp. **sylvestris**
sylvicola Ridl. = **Cyp. renschii**
tanaensis Kük. = **Pycreus flavescens** subsp. **tanaensis**
tanyphyllus Ridl. = **Mariscus tanyphyllus**
tanzaniae (Lye) Lye = **Kyllinga tanzaniae**
taylorii C. B. Clarke = **Cyperus rotundus**
tegetum C. B. Clarke 1884, non Roxb. 1820 = **Cyperus schimperianus**
tegetum var. *protracta* C. B. Clarke = **Cyp. schimperianus**
tenax Boeckeler var. *actinostachys* (Welw. ex Ridl.) Kük., var. *andongensis* (Ridl.) Kük., var. *angustissimus* Kük., var. *monroviensis* (Boeckeler) Kük., var. *pseudocastaneus* (Kük.) Kük., and var. *sabulicola* (Ridl.) Kük. = **Cyp. tenax**
teneriffae Poir., incl. var. *longimucronatus* Kük., and var. *succulentus* Dinter ex Kük. = **Cyp. rubicundus**
teneristolon Mattf. & Kük., incl. var. *robustior* (Kük.) Kük. = **Kyllinga pulchella**
tenoreanus Schult. & Schult. f. = **Cyperus esculentus**
tenorei C. Presl = **Cyp. esculentus**
tenuiculmis Boeckeler 1879, non Boeckeler 1870 = **Cyp. dilatatus**
tenuiculmis var. *longiramulosus* (Kük.) Meneses = **Cyp. tenuiculmis** var. **tenuiculmis**
tenuiflorus Rottb. 1773, non Roxb. 1820 = **Cyp. longus** subsp. **longus**
tenuifolius (Steud.) Dandy 1944, non T. L. Dai nec Walp. = **Kyllinga tenuifolia**
tenuifolius sensu Andrews 1956, p.p. = **K. pumila**
tenuifolius Walp. 1849 = sphalm. = **Cyp. tenuiflorus** – See under **Cyp. rotundus**
tenuis Sw. 1788, non Muhl. 1817 = **Mariscus flabelliformis**
tenuis var. *aximensis* (C. B. Clarke) Kük., var. *brevior* Kük., var. *eurystachys* (Ridl.) Kük., var. *fulvescens* Kük., var. *grandiceps* Kük., and var. *luridus* (T. Durand & De Wild.) Kük. = **M. flabelliformis**
teres (C. B. Clarke) Lye = **Kyllinga polyphylla**
testui (Cherm.) Reynders = **Pycreus testui**
tetrastachyos Desf. = **Cyperus rotundus**
textilis Thunb. = **Cyp. alternifolius** subsp. **textilis** (Thunb.) Verloove (S. Africa)
thouarsii Kunth = **Pycreus polystachyos** var. **polystachyos**

thyrsiflorus Boeckeler = **Mariscus ligularis**
tibialis (Poit. ex Ledeb.) Govaerts
– See under **Kyllinga tibialis** and **K. vaginata**
tisserantii Cherm. 1931 = **Cyperus niveus** var. **tisserantii**
tisserantioides (Mtot.) Lye = **Kyllinga tisserantioides**
tomaiophyllus K. Schum., incl. vars. = **Mariscus tomaiophyllus**
trachycladus Cherm. = **Cyperus procerus**
trachycladus var. *multiflorus* sensu Berh., Fl. Sénégal, ed. 2: 384, 1967 = **Cyp. incompressus**
transitorius Kük. = **Kyllinga pulchella**
tremulus Poir., incl. var. *minor* Boeckeler, and var. *opulentus* Boeckeler = **Pycreus macrostachyos**
triceps (Rottb.) Endl. var. *angustifolius* Kük., and var. *obtusiflorus* (Boeckeler) Kük. = **Kyllinga tenuifolia** var. **tenuifolia**
triceps var. *ciliatus* (Boeckeler) Kük. = **K. tenuifolia** var. **ciliata**
triceps var. *obtusiflorus* (Boeckeler) Kük. = **K. bulbosa**
triflorus L. = **Abildgaardia triflora**
trigonus Boeckeler = **Mariscus ligularis**
tristachyus Boeckeler, incl. var. *elongatus* Boeckeler, and var. *minor* Boeckeler = **Pycreus flavescens**
truncatulus Steud. = **P. pumilus**
truncatus A. Rich. 1850, non Turcz. = **Cyperus schimperianus**
tsaratananensis Cherm. = **Cyp. derreilema**
tschinsendensis Turrill = **Cyp. derreilema**
tuberosus Rottb. (1772) 1773, non Pursh 1813 = **Cyp. rotundus**
tuberosus Pursh 1813 = **Cyp. esculentus**
turbatus Baijnath = **Cyp. prolifer** × **Cyp. sensilis** (S. Africa)
turfosus Salzm. ex Kunth = **Pycreus mundii** var. **mundii**
turrillii Kük. = **Mariscus laxiflorus**
ugandensis Chiov. = **Cyperus papyrus** subsp. **papyrus**
ugogensis Peter & Kük. = **Kyllinga ugogensis**
umbellatus (Rottb.) Benth. 1861, non Burm. f. 1768 nec Thwaites 1864 nec Roxb. 1820 = **Mariscus sumatrensis**
umbellatus Roxb. 1820 = **Cyperus exaltatus**
umbilensis (C. B. Clarke ex W. Watson) Boeckeler ex Kuntze (= **Mariscus owanii**) = **M. solidus**
uncinatus Poir. 1806, incl. var. *gratus* (C. B. Clarke) Kük. = **Cyperus cuspidatus**
uncinatus R. Br. 1810, non Poir. 1806 = **Mariscus squarrosus**
unioloides R. Br., incl. var. *bromoides* (Link) C. B. Clarke and fa. *reductus* Kük. = **Pycreus unioloides**
unispicatus Bauters, Reynders & Goetgh. = **Mariscus unispicatus**
unistamen T. Koyama = **Lipocarpha nana**
usitatus var. *sanguinolentus* Nees = **Cyperus semitrifidus**
usitatus var. *stuhlmannii* (C. B. Clarke ex K. Schum.) Lye = **Cyp. usitatus** var. **usitatus**
vaginatissimus K. Schum. = **Mariscus kerstenii**
vahlii Boeckeler 1870, nom. illeg. = **Torulinium odoratum**
varicus (C. B. Clarke ex Cherm.) Kük.
– See at end of **Mariscus**
variegatus Boeckeler 1870 = **Mariscus schimperi**
variegatus Griseb. 1864 = **Pycreus lanceolatus**
variegatus var. *atrosanguineus* (Hochst. ex A. Rich.) Boeckeler = **M. plateilema**
vatkeanus (Boeckeler) Goetgh. = **Ascolepis speciosa**
verrucinux C. B. Clarke = **Cyperus denudatus**

verticillatus Roxb. = **Cyp. imbricatus**
vestitus Hochst. ex C. Krauss, incl. var. *pseudocallistus* (Kük.) Kük. and var. *pseudovestitus* (Kük.) Kük. = **Mariscus albomarginatus**
vexillatus Peter & Kük. = **M. schimperi**
vorsteri K. L. Wilson 1994 = cf. **M. solidus**
vulgaris Hochst. ex Boeckeler 1868, non Sieber ex Kunth 1837 = **Cyperus maculatus** subsp. **maculatus**
waillyi (Cherm.) Lye = **Pycreus waillyi**
waterlotii Cherm. = **Cyperus cuspidatus**
webbianus Steud. = **Cyp. sexangularis**
welwitschii (Ridl.) Lye = **Kyllinga tenuifolia** var. **ciliata**
wissmannii O. Schwartz = See at end of **Mariscus**
wittei Cherm. = **M. deciduus**
xantholepis (Nelmes) Lye = **Pycreus xantholepis**
xanthopus Steud. = **Cyperus nutans** var. **eleusinoides**
yemenicus Spreng. = **Cyp. bulbosus**
zairensis Chiov. = **Cyp. papyrus** subsp. **zairensis**
zambesiensis C. B. Clarke 1894, 1902 = **Cyp. glaucophyllus** (quoad typ. Buchanan 24 & 47)
zambesiensis C. B. Clarke = **Cyp. pulchellus** (quoad typ. Buchanan 647)
zanzibarensis C. B. Clarke 1895, 1901 = **Cyp. pulchellus**
zollingeri Steud. var. *condensatus* Kük., and var. *livingstonii* Kük., and var. *longiramulosus* Kük. = **Cyp. tenuiculmis** var**. tenuiculmis**
zollingeri var. *longiramulosus* (Kük.) Meneses = **Cyp. tenuiculmis** var. **tenuiculmis**
zollingeri var. *parvus* C. B. Clarke = **Cyp. tenuiculmis** ? or **Cyp. zollingeri**
zollingeri var. *permacer* (C. B. Clarke) Kük. = **Cyp. permacer**
zollingeri var. *robusta* K. Schum. = **Cyp. zollingeri**
zollingeri var. *schweinfurthianus* (Boeckeler) Kük. = **Cyp. tenuiculmis** var. **schweinfurthianus**
zollingeri sensu C. B. Clarke, Fl. Trop. Afr. 8: 360, 1901, non Steud. = **Cyp. tenuiculmis**
zollingeri sensu auct., non Steud. = **Cyp. majungensis**
zonatissimus Kük. = **Pycreus zonatus**
zonatus Kük. = **P. afrozonatus**

(DICHOSTYLIS)

Dichostylis cuspidata (Kunth) Palla = **Cyperus cuspidatus**
hamulosa (M. Bieb.) Nees = **Mariscus hamulosus**
micheliana (L.) Nees = **Cyperus michelianus**
micheliana fa. *conglomerata* (Beck) Soó and fa. *elata* (Kük.) Soó = **Cyp. michelianus** subsp. **michelianus**
nitens (Retz.) Palla = **Pycreus pumilus**
patens (Vahl) Palla = **P. pumilus**
patens (Vahl) Rikli = **P. pumilus**
pygmaea (Rottb.) Nees = **Cyperus michelianus** subsp. **pygmaeus**
radiata (Vahl 1805) Palla = **Cyp. imbricatus**
squarrosa (L.) Palla = **Mariscus squarrosus**

(DICHROMENA)

Dichromena candida (Nees) Ridl. = **Rhynchospora candida**
corymbosa (L.) J. F. Macbr. = **R. corymbosa**
triflora (Vahl) J. F. Macbr. = **R. triflora**

(DICLIDIUM)

Diclidium aciculare Schrad. ex Nees = **Torulinium odoratum**
conglobatum (Link) Nees ex B. D. Jacks. = **T. odoratum**
ferax (Rich.) Steud. = **T. odoratum**
ferox (Rich.) Schrad. ex Nees = **T. odoratum**
odoratum (L.) Schrad. ex Nees = **T. odoratum**

DIPLACRUM / *2*

A genus of 8 species: 6 widely distributed in the Old World, and 2 endemic in C. & S. America, respectively. Two species present in tropical Africa, one in Vietnam, one in tropical and subtropical Asia to W Pacific, and one in N Australia.

The genus is very close to *Scleria*, and sometimes regarded as a subgenus or section of that genus (cf. Kern, Blumea 11: 140−218, 1961; Raynal, Adansonia, N. S. 4: 150, 1964). Cf. also Browning & Goetghebeur, Sedge genera Africa & Madagascar: 44, 2017.

Diplacrum africanum (Benth.) C. B. Clarke; Akoègninou & al., Fl. analyt. Bénin: 99, 2006; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 86, 2017); Mesterházy in Lidia 7/5: 105, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 58, 1974; Haines & Lye, Sedges & rushes E. Afr.: 360, 1983; Berhaut, Fl. ill. Sénégal 9: 218, 1988; Fragm. Florist. Geobot. 41: 486, 1996; Prasad & Singh, Sedges Karnataka (India): 134, 2002; Lisowski, Fl. Rép. Guinée 2: 471, 2009; Fl. Trop. E. Afr., Cyper.: 416, 2010; Singh & Dey, Fasc. fl. India 27: 91, 2015 (under *Scleria*); Browning & Goetghebeur: l.c. (2017).

bas.: *Scleria africana* Benth.

Dwarf annual herb with minute red roots; culms triquetrous, often purplish near base, 2−15 cm long, 0,5−1 mm ∅, leaf blade pale green with minute reddish dots, linear, 2−7 cm long, 2−6 mm wide; inflorescence of 1−8 stalked axillary clusters of spikelets, protruding from leaf sheaths, with 1-flowered female spikelets above the several-flowered male ones; spikelets greenish, 2−3 mm long.

Bare sand or mud in marshy grassland; wet sand close to seashore; sometimes on several m² in trampling places; river- and swamp sides; humid rice fields; forest gallery; flooded hollow; marshy meadow; on rock outcrops with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp. *Aloe* sp.; and many annuals; 0−1050 m alt.

Madagascar; tropical & subtropical Asia from S India through to N Australia, Philippines; West Indies; N S. America. – In Uganda uncertain.

D. capitatum (Willd.) Boeckeler; mostly cited as *D. longifolium* (Griseb.) C. B. Clarke; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011 (as *D. longifolium*); Mesterházy in Lidia 7/5: 105, 2012. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 58, 1974 (as *D. longifolium*); Lorougnon, Cyper. forest. Côte d'Ivoire (Mém. ORSTOM 58): 36, 37, 1976 (idem); Fragm. Florist. Geobot. 41: 486, 1996 (idem); Cook, Aquat. pl. book, ed. 2: 73, 1996; Lisowski, Fl. Rép. Guinée 2: 471, 2009 (as *D. longifolium*); Fl. Gabon 44, Cyper.: 117, 119 (nutlet), 2012.

bas.: *Scleria capitata* Willd.

syn.: *S. longifolia* (Griseb.) Roberty 1954, nom. illeg., non Boeckeler 1882; *S. amphigaea* Raymond, incl. var. *angustifolia* (Kük.) Raymond; *Pteroscleria longifolia* Griseb.; *Diplacrum longifolium* (Griseb.) C. B. Clarke, incl. var. *angustifolium* Kük., and fa. *graciliores* H. Pfeiff.; *Bisboeckelera paporiensis* Suess.

DIPLACRUM CAPITATUM

Perennial herb 0,3−1 m tall with long slender stolons covered by scales; culms usually 30−50 cm long, triangular, with few basal leaves and 5−7 leaves spaced out along the culm; leaf blade linear, 20−80 cm long, 0,7−1 cm wide, usually overtopping culms, margins and main nerve scabrous; inflorescence of 2−6 ± sessile dense axillary clusters 1 cm wide of sessile spikelets, each cluster protruding from a leaf sheath; spikelets lanceolate, 2−3 mm long, each 1-flowered; female flowers solitary.

Swamps; pools; mangroves; streams and other damp places; raphia formations; 0−500 m alt.

Tropical America, W. Indies, N S. America; lately found in Cuba (Revista Jard. Bot. Nacional 36: 15−17, 2015).

SYNONYMS:

Diplacrum – See above under the species.

(DISTIMUS)

Distimus flavescens (L.) Raf. = **Pycreus flavescens**
flavicomus Raf. = **P. macrostachyos**

(DULICHIUM)

Dulichium confervoides (Poir.) Alston = **Websteria confervoides**

(DUVAL-JOUVEA)

Duval-jouvea maritima (Aubl.) Palla = **Remirea maritima**
procera (Rottb.) H. Pfeiff. = **Cyperus procerus**

(ECHINOLYTRUM)

Echinolytrum dipsaceum (Rottb.) Desf. = **Fimbristylis dipsacea**

ELEOCHARIS / *30*

Eleocharis R. Br. 1810. Orthographic variants: *Heliocharis* T. Lestib. 1819, *Heliocharis* Lindl. 1829, *Elaeocharis* Brogn. 1843.

syn.: *Limnochloa* P. Beauv. ex T. Lestib.; *Eleogenus* Nees; *Chaetocyperus* Nees; *Chlorocharis* Rikli; *Websteria* S. H. Wright

A genus of about 180−250 species and some 600 published names with a cosmopolitan distribution. Most species occur in a warm wet climate, and most of the species diversity is concentrated in E N. America, warm-temperate Asia, and the wet tropics especially America (Hinchliff & al. in Taxon 59: 709, 2010). Most grow in shallow water, the large perennial species are often locally dominant over large areas. Many are reported as weeds; some are cultivated for matting or as ornamentals, or food, e.g. *E. dulcis*, the Chinese water chestnut.

Eleocharis has undergone numerous supraspecific reorganisations over the last two hundred years (Roalson & al. in Syst. Bot. 35: 257, 2010). There is considerable taxonomic disagreement within the genus, and a critical revision on a worldwide basis is much needed (Cook, Aquat. & wetland pl. south. Africa: 95, 2004). "The structural simplicity of *Eleocharis* morphology and lack of phylogenetically informative characters make it one of the most

taxonomically difficult genera in Cyperaceae" (González-Elizondo & Tena- Flores, 2000, cited by Rosen, Novon 19: 511, 2009).

The plants grow from heights of < 1 cm to greater than 3 m. The leaves are mostly reduced to the sheath (except *E. naumanniana*). The inflorescence is reduced to 1 terminal spikelet not subtended by bracts. The nuts nearly always have a persistent style base, which is often referred to as a 'tubercle'.

Several species in our area are poorly known, and their taxonomic status is uncertain: five-six species are probably known only from the type gathering, representing nearly 17 %.

AMIET, J.-L. & al. (2018). *Les akènes des Bolboschoenus, Schoenoplectus et Eleocharis du sud de la Drôme (Cyperaceae)*. (Documents de Botanique sud-drômoise.6) Société linnéenne de Lyon, Lyon. 87 pp. [*Eleocharis palustris* s.l. p. 70−81.]

BROWNING, J. & al. (1997). Studies in Cyperaceae in southern Africa 32: Eleocharis subgenus Limnochloa section Limnochloa. *S. African J. Bot*. 63: 172−184.

GONZÁLEZ-ELIZONDO, M. S. & P. M. PETERSON (1997). A classification of and key to the supraspecific taxa in Eleocharis (Cyperaceae). *Taxon* 46: 433−449.

HINCHLIFF, C. E. & al. (2010). The origins of Eleocharis (Cyperaceae) and the status of Websteria, Egleria, and Chillania. *Taxon* 59: 709−719.

ROALSON, E. H. & al. (2010). Phylogenetic relationships in Eleocharis (Cyperaceae): C_4 phytosynthesis origins and patterns of diversification in spikerushes. *Syst. Bot*. 35: 257−271.

SILVA, C. R. da & al. (2012). Ornamentation of achene silica walls and its contribution to the systematics of Eleocharis (Cyperaceae). *Plant Syst. Evol*. 298: 391−398.

Eleocharis acutangula (Roxb.) Schult.; Renier, Fl. Kwango 1: 73, 1948 (as *Heleocharis fistulosa*); Clarke & Mannheimer, Cyper. Namibia: 95, 84 (map), 1999; Simpson & Inglis in Kew Bull. 56: 311, 2001; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 226, 2002; Archer & Craven, Cyper. Namibia: 21, 2004; D. J. Rosen & al. in J. Bot. Res. Inst. Texas 1: 875−888, 2007; Lisowski, Fl. Rép. Guinée 1: 399, 2009; Fl. Trop. E. Afr., Cyper.: 39−40, 2010 (as *E. fistulosa*); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 112, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 89, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015 (as *E. fistulosa*). – Icon.: Ber. Schweiz. Bot. Ges. 63: 329, pl. VII fig. 1, 1953 (as *E. pseudofistulosa*); Haines & Lye, Sedges & rushes E. Afr.: 67, 1983; Troupin, Fl. Rwanda 4: 449, 1988; Berhaut, Fl. ill. Sénégal 9: 221, 1988; Gordon-Gray, Cyper. Natal: 78, 1995 (nutlet); Fl. Eth. & Eritrea 6: 404, 406, 1997; Rosen & al., o.c.: 882 (2007); Trevisan & Boldrini in Revista Brasil. Biociências, Porto Alegre 6/1: 41, 2008; Fl. Gabon 44, Cyper.: 123, 2012; da Silva & al. in Pl. Syst. Evol. 208: 394, 396, 2012 (nutlet); Fl. China, Ill. 23: 257, 2012; Ind. J. Forestry 36: 254, 2013.

bas.: *Scirpus acutangulus* Roxb.

syn.: *Limnochloa acutangula* (Roxb.) Nees; See also below under the subspp., and World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb 30−120 cm tall, stoloniferous, with 4−10 culms clumped together from a short vertical or horizontal base; culms green or pink, reddish-brown to purple near base, 30−100 cm long, 2−5 mm ∅, sharply 3-angled, pithy; stolons 10−20 cm long, 2−4 mm ∅, with short blackish scales at nodes or scales absent, rooting at nodes and ending in new plant clumps; sheaths much wider than culm, grey to purple, to 15 cm long, ending in a short acute lobe; inflorescence a terminal cylindrical green spikelet, 1−6 cm long, 0,3−0,5 cm ∅, with > 80 flowers, glume tips giving a serrate look.

Swamps with, e.g. *Miscanthus*; seasonally flooded grassland; marshy areas; ditches, shallow lakes and streams; rocky outcrops; ponds in the depression of Oushita (Angola) at the end of the dry season, in which *E. acutangula* occurs in loose stands several m² wide; among the numerous accompanying species: representatives of *Utricularia*, *Lythraceae*, *Eriocaulaceae* as well as delicate *Najas*; spongy valley in savanna with *Anadelphia leptocoma*; may be locally dominant in up to 60 cm of water, especially where vegetation is choking a shallow lake; rice fields (weed); -500−2150 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar; Andaman & Nicobar Isl. (Kamble in Indian J. Forestry 36: 253 f., 2013); SE Asia, India, Sri Lanka, Malaysia, through to China, Japan, Papua New Guinea, N Australia, Philippines; S N. America (Florida), C. America, Caribbean, S. America (Brazil: Trevisan & Boldrini, l.c.) – in the New World in various habitats, incl. cloud forests, forest depressions, savannas, grassland, palm swamps, lake margins, borrow pits, roadside ditches; 0−2000 m alt.

Comprises 2 subspp. in tropical Africa: – subsp. **acutangula** [syn.: *Scirpus fistulosus* Poir. 1805, nom. illeg., non Forssk. 1775, nec (Schult.) Kuntze; *Eleocharis fistulosa* Schult. 1824, incl. var. *robusta* Boeckeler, but *excl*. var. *micrantha* Cherm. (= *E. nupensis*); *Heleocharis robusta* (Boeckeler) H. E. Hess; *Baeothryon fistulosum* (Schult.) A. Dietr.; *Limnochloa fistulosa* (Schult.) Nees; *Scirpus fistulosus* (Schult.) Kuntze, nom. illeg.; *Eleocharis fistulosa* Link 1820; *Scirpus medius* Roxb.; *Eleocharis media* (Roxb.) Schult.; *E. planiculmis* Steud.; *Limnochloa media* (Roxb.) Nees; *Heleocharis pseudofistulosa* H. E. Hess; – subsp. **breviseta** D. J. Rosen. These subspecies are distinguished as follows (Rosen & al., o.c. 879). Subsp. **breviseta** has perianth bristles shorter than achene or rarely few to all reaching its summit or slightly surpassing, spinules restricted to the distal half or more commonly only near the tip; achene 1,4−1,7 mm long, dark brown; tubercle 0,3−0,5 mm long. Subsp. **acutangula** has perianth bristles longer than achene (rarely one to few just reaching its summit or slightly shorter), spinules nearly to base or rarely spinules completely absent; achene 1,6−2 mm long, dark amber or rarely dark brown; tubercle 0,5−0,8 mm long. – A third subspecies, viz. subsp. **neotropica** D. J. Rosen (fig. in Rosen & al., o.c.: 882) occurs in NW S. America.

Provides fibres for matting and weaving.

As pointed out in Fl. Trop. E. Afr., Cyper.: 40, 2010, the name *E. acutangula* is used for this taxon; its basionym dates back to 1820, while *fistulosa* has a basionym date of 1805. *Eleocharis fistulosa* Link 1820 is a *nomen invalidum*, but the combination was never made. It seems that Link assigned *Scirpus fistulosus* Poir. 1805 (non Forssk. 1775) to *Eleocharis* but did not make the combination *E. fistulosa*. "Therefore, there is no reason why Schultes' combination should not be valid; and this name has priority."

E. angolensis H. E.Hess – Icon.: Ber. Schweiz. Bot. Ges. 63: 346, pl. VII fig. 9, 1953.

Annual tufted herb 5−12 cm tall; culms yellowish green, sulcate, 0,3−0,5 mm ∅ and elliptic to ± rounded; sheaths membraneous, hyaline, not inflated; spikelet 2−3 mm long, 1,5 mm ∅, ovoid to globose, many-flowered; achene 0,6−0,7 mm long.

In humid depressions on marly soil; gregarious; c. 1150 m alt.

E. antunesii H. E. Hess – Icon.: Ber. Schweiz. Bot. Ges. 63: 335, pl. VII fig. 7, 1953.

Annual tufted herb 5−10 cm tall; culms bluish green, elliptic, sulcate, 0,1−0,3 mm ∅; sheaths membraneous, white, appressed

to culm; spikelet fusiform, 3−5 mm long, c. 1 mm ∅, 1−2-flowered, often viviparous.

Edge of pond on sandy-clayey soil with *Scirpus* spp., *Cyperus* spp. and tiny species of *Lythraceae* and *Eriocaulaceae*; in the same place there are also *Eleocharis onthitensis*, and nearby in water (*E. pseudofistulosa* =) *E. acutangula*; 1830 m alt.

E. atropurpurea (Retz.) J. Presl & C. Presl, incl. var. *albivaginata* Boeckeler, var. *setiformis* Benth., var. *zanardinii* (Parl.) A. Terracc., and var. *minor* Kunth, but *excl*. var. *nigrescens* (Nees) Boeckeler; Archer & Craven, Cyper. Namibia: 21, 2004; Akoègninou & al., Fl. analyt. Bénin: 99, 2006; Lisowski, Fl. Rép. Guinée 1: 399, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 89, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 60, 1974; Haines & Lye, Sedges & rushes E. Afr.: 72, 1983; Berhaut, Fl. ill. Sénégal 9: 222, 1988; Gordon-Gray, Cyper. Natal: 78, 1995 (nutlet); Thulin, Fl. Somalia 4: 107, 1995; Clarke & Mannheimer, Cyper. Namibia: 95, 84 (map), 1999; Fl. Eth. & Eritrea 6: 406−407, 1997; Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 42, 2002; Cook, Aquat. & wetland pl. south. Afr.: 96, 2004; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park Rwanda: 341, 2008; Fl. Trop. E. Afr., Cyper.: 45, 2010; Fl. Gabon 44, Cyper.: 123, 2012; Fl. China, Ill. 23: 262, 2012; J. Bot. Soc. Bengal 68: 125, 2014; Ardenghi & al. in Phytotaxa 212: 138, 2015 (typification of *Scirpus erraticus* Rota ex De Not.).

bas.: *Scirpus atropurpureus* Retz.

syn.: *Isolepis atropurpurea* (Retz.) Roem. & Schult.; *Scirpus erraticus* Rota ex De Not.; *Eleocharis erratica* (Rota ex De Not.) Steud.; *E. monandra* Hochst. ex Steud.; *Isolepis dichroa* Steud.; See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual slender dwarf herb; culms 1−30 cm tall, filiform, 0,2−0,4 mm ∅, dark vivid green, often curved, rounded; sheaths 2, the lower usually dark red or purple, truncate, the upper paler with attenuate apex; spikelet ovoid, 2−8 mm long, 1−2 mm ∅, lower glumes often deciduous; glumes dark reddish brown.

Seasonal pools and seepage areas; rice fields; shallow pools over rock; seasonally flooded grassland; pond and lake edges; locally common, sometimes even mat-forming; damp grassy places; humid sand; clayey hollows, easily flooded; sometimes growing with *Fuirena microglumis* in grassland between fields of *Guizotia* and *Eleusine*; naked mud in mangrove; 0−2000 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar, Mauritius; pantropical and subtropical and extending into S Europe (naturalised in Italy, Switzerland), Turkey, Middle East, Iraq, Afghanistan – Pakistan to China, Malesia, Japan; Australia; N. & S. America.

Similar to *E. setifolia*. Most easily recognised by black, shiny, smooth achenes (0,5 × 0,4 mm) carrying a minute vertically flattened style base.

E. brainii Svenson; Raynal in Adansonia, Sér. 2, 7: 318, 1967; Lisowski, Fl. Rép. Guinée 1: 399, 2009; Fl. Trop. E. Afr., Cyper.: 44, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Rhodora 39: pl. 461, 1937; Haines & Lye, Sedges & rushes E. Afr.: 74, 1983; Berhaut, Fl. ill. Sénégal 9: 223, 1988; Burrows & Willis, Pl. Nyika Plateau, Malawi: 299, 2005.

syn.: *E. trilophus* sensu Adam, Bull. Inst. Franç. Afrique Noire, Sér. A, Sci. Nat. 24: 948, 1962, non C. B. Clarke

Dwarf annual herb; culms tufted, 1−13 cm tall, 0,1−0,3 mm ∅, filiform or obscurely 3-angular; sheaths 2, reddish or purple

near base; spikelet ovoid, 1−2 mm long, 0,5−1 mm ∅; glumes uncolored to dark reddish brown with paler margin and midrib; perianth absent or few minute bristles.

Very wet vly on granite sand; swampy grassland; rock pools; lake shores; often half -/or entirely submerged; flooded savanna; spongy meadows in periphery of large pool, rather common; 950 (and certainly less) – 1450 m alt.

Botswana.

Darbyshire & al. (2015: 110) list *E. brainii*, specim. Schweinfurth 2583, for Sudan. This specimen was determined by Svenson (Rhodora 39: 251, 1937) as *E. brainii*. It was marked *E. chaetaria* Roem. & Schult., now considered as a subspecies of *E. retroflexa*. As pointed out in Fl. Trop. E. Afr., Cyper.: 44, 2010, Haines & Lye (Sedges & rushes E. Afr.: 75−76) cite this plant from W Tanzania, 1200−1500 m alt. The latter authors write: "This plant is most similar to *E. brainii* and *E. setifolia*, but differs from both in the well-developed bristles and different nutlet. When it produces decumbent culms and viviparous spikelets it is very different from other species of *Eleocharis*." The conclusion reached by Beentje in Fl. Trop. E. Afr., Cyper.: 44, 2010, reads as follows: "…it is possible *Eleocharis chaetaria* Roem. & Schult., … (1817) is a synonym, or even the proper name. A problem is that for this taxon no type is mentioned, just in humid grassy places of Calcutta."

E. caduca (Delile) Schult., incl. var. *gracilescens* A. Terracc.; Raynal in Peyre de Fabrègues & Lebrun, Catalogue des plantes vasculaires Niger: 345, 1976; Fl. Eth. & Eritrea 6: 405, 1997 (as *E. intricata*); Boulos, Fl. Egypt 4: 365, 2005; Fl. Trop. E. Afr., Cyper.: 42−43, 2010 (as *E. intricata*); Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 119, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 71, 1983; Gordon-Gray, Cyper. Natal: 78, 1995 (nut); Bot. Chron. 15: 21, 23, 26−27, 2002; Iran J. Bot. 9: 173, 2002; Cook, Aquat. & wetland pl. south. Afr.: 97, 2004.

bas.: *Scirpus caducus* Delile

syn.: *Eleocharis intricata* Kük., incl. var. *peteri* W. Schultze-Motel; *E. madagascariensis* Cherm.; *E. ovata* (Roth) Roem. & Schult. var. *gaetula* Maire; *E. tibestica* Quézel; *E. caribea* sensu Täckholm, Stud. fl. Egypt, ed. 2: 780, 1974.

Greuter & al. made a thorough study of *E. caduca* and we follow their concept (Bot. Chron. 15: 17−30, 2002). The following description is taken from their article.

Perennial herb, first tufted, soon producing slender stolons rooting and with single culms at nodes, terminating in daughter rosettes; culms 1,3−12 cm tall, 0,6−0,9 mm ∅, uppermost leaf sheath reddish-brown below, straw-yellow above; spike 2,3−5,5 mm long, with 3−13 fertile and 1−3 sterile flowers; stigmas 2; bristles present, 7−8, c. 1−2 mm long (in *E. geniculata* lacking).

Swamp; pool margins; in rock crevices where water flows over the plants; marshy ground; by springs in limestone hills; ? – 1500 m alt.

Mediterranean region; Portugal (Fl. Medit. 20: 144, 2010), Balearic islands, ? S Italy (not confirmed), Sardinia (not Sicily !), Crete; Algeria, Libya (Fezzan), SW Egypt, Socotra; S. Africa, Botswana; S Sinai, Yemen, ? Syria (not confirmed), Iran (Iran. J. Bot. 9: 171, 2002); Madagascar, Réunion, Mauritius.

"There is obviously no immediate kinship between *E. caduca* and *E. geniculata*. We agree with Haines & Lye (1983) that *E. caduca* is much closer to *E. minuta* Boeck. … than to *E. geniculata*" (Greuter & al., o.c.: 25). On the other hand, Gordon-Gray (l.c.) wrote: "Svenson (1939: 52) cited *E. caduca* as a synonym of *E. geniculata* … Personally, I believe it to be correct, although not followed here. Further study in relation to distribution and habitat conditions is needed."

"*E. tibestica*" reported by Wickens from Jebel Marra is *E. palustris* according to Darbyshire & al., Pl. Sudan & S. Sudan, 2015.

E. callensii H. E. Hess – Icon.: Ber. Schweiz. Bot: Ges. ! 63: 342, pl. VII fig. 6, 1953.

Tufted herb 10−15 cm tall; culms greyish green, curved, 0,3−0,4 mm ∅ (elliptic); leaf sheaths red below, yellow above, membranous, acute; spike 3,5−4,5 mm long, 1,5 mm ∅, 3−5-flowered, often viviparous.

Peaty marsh; c. 600 m alt.

Similar to *E. antunesii*; also to *E. caespitosissima* Baker from Madagascar.

? Known only from the type collected in 1950.

E. complanata Boeckeler; Akoègninou & al., Fl. analyt. Bénin: 99−100, 2006; Lisowski, Fl. Rép. Guinée 1: 399−400, 2009; Fl. Trop. E. Afr., Cyper.: 41−42, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 74, 1983; Berhaut, Fl. ill. Sénégal 9: 224, 1988.

syn.: *E. anceps* Ridl.

Annual, densely tufted herb with many culms 5−30 cm long, 1−2 mm wide, *strongly flattened*; sheaths purple or reddish near base, greenish above, the upper ending in a triangular lobe; spikelet ovoid, 3−15 mm long, 1,5−3 mm ∅, with to 100 flowers.

Seepage areas on sand; moist depressions; rice paddies; dry sandy soil; savannas; degraded coastal thickets; pools; flooded cultivations; denuded, humid sandy soils; pool sides; damp grassy woods; damp sandy places; near sea-level to 1050 m alt.

Close to *E. nigrescens* but differs in its flattened culms and larger glumes and nutlets.

E. confervoides (Poir.) Steud. – See below under **Websteria confervoides** (Poir.) S. S. Hooper

E. cubangensis H. E. Hess; Clarke & Mannheimer, Cyper. Namibia: 95, 1999; Archer & Craven, Cyper. Namibia: 21, 2004; Cook, Aquat. & wetland pl. south. Afr.: 101, 2004 (treated as a synonym of *E. retroflexa* subsp. *subtilissima*). – Icon.: Ber. Schweiz. Bot. Ges. 63: 324, 340, 1953.

Annual tufted spreading herb 2−3 cm tall with 2−4 mm long underground stolons; culms yellowish green, quadrangular, stiff, 0,1−0,2 mm wide; leaf sheaths rusty brown at base, white, membranous, hyaline above; spikelet 1−1,5 mm long, c. 1 mm ∅, acuminate, 3−5-flowered.

Margin of pond together with *E. nigrescens*, aquatic; c. 1400 m alt.

Taxonomic status uncertain (cf. above).

E. decoriglumis Berhaut; Fl. Trop. E. Afr., Cyper.: 41, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 70, 1983; Berhaut, Fl. ill. Sénégal 9: 224, 1988; Cook, Aquat. & wetland pl. south. Afr.: 97, 2004.

Annual tufted herb; culms 2−5 cm tall when flowering, *later elongating* to 60 cm, 3-angled, 2−4 mm ∅, sides concave, olive green, spongy inside; leaf sheaths 2, the lower one scale-like, brownish, the upper to 4 cm long reddish below, grey above, ending in a very obtuse lobe; spikelet cylindric, c. 1 cm long when flowering, 3 mm ∅, *later elongating* to 2−4,5 cm, 4−5 mm ∅ in fruit; glumes lying flat and overlapping, ovate, c. 4 × c. 2 mm, green with a very distinct 0,2−0,5 mm wide *dark reddish-brown or purple margin*.

Seasonal and permanent pools in shallow water; marshy banks of pools; swamps; seasonally swampy depression; flooded clayey places; near sea-level to c. 1000 m alt.

Botswana ?

E. deightonii S. S. Hooper; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Malaisse, Guide florist. Parc Natl. Cantanhez (Guinée-Bissau): 151, 2010. – Icon.: Berhaut, Fl. ill. Sénégal 9: 225, 1988 (details).

Annual tufted herb 6−25 cm tall; culms *flattened*; spikelet narrowly obovoid or elliptic, greenish, 3−4 mm long.

Rice swamps; recently emerged soft mud; near sea-level – ?

In general appearance of spikelets resembling *E. complanata*.

E. dulcis (Burm. f.) Trin., incl. var. *tuberosa* (Schult.) T. Koyama; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 624−625, 1985; Simpson & Inglis in Kew Bull. 56: 312, 2001; Prasad & Singh, Sedges Karnataka (India): 142−143, 2002; Naczi & Ford, Sedges: uses…: 10, 45, 47, 90, 2008; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 42, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Mesterházy in Lidia 7/5: 106, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 48, 2012 (map by Schmidt & al. in Phytotaxa 304: 90, 2017). – Icon.: Kirkia 2: pl. XVII/A (p. 65−66), 1961; Haines & Lye, Sedges & rushes E. Afr.: 66, 1983; Berhaut, Fl. ill. Sénégal 9: 226, 1988; Gordon-Gray, Cyper. Natal: 78, 1995 (nutlet); Fl. Pakistan 206, Cyper.: 48, 2001; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 43, 2002; Cook, Aquat. & wetland pl. south. Afr.: 98, 2004; Fl. Trop. E. Afr., Cyper.: 38, 2010; Fl. Gabon 44, Cyper.: 125, 2012; Fl. China, Ill. 23: 258, 2012; Browning & Goetghebeur, Sedge genera Africa & Madagascar: 46, 2017.

bas.: *Andropogon dulcis* Burm. f.

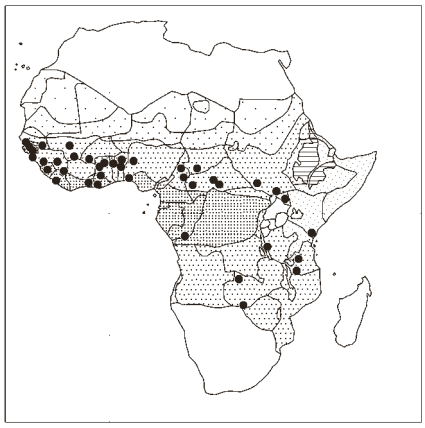
syn.: *Scirpus plantaginoides* Rottb.; *Eleocharis plantaginoidea* W. Wight, nom. superfl.; *E. plantaginoides* (Rottb.) Domin; *E. plantaginea* (Retz.) Roem. & Schult.; *Scirpus plantagineus* Retz. 1788; *Limnochloa plantaginea* (Retz.) Nees; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

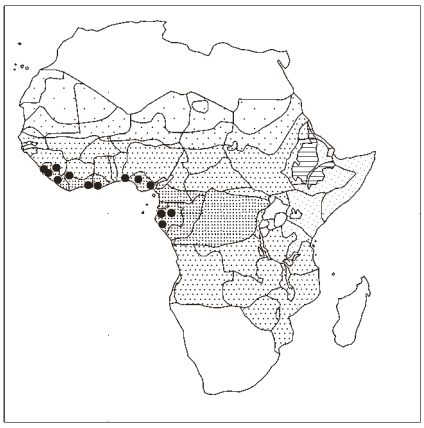
Perennial herb 0,2−1,3 m tall; rhizome creeping, with stolons terminating in tubers 1−1,5 cm ∅; culms tufted from a contracted base, bright green, rounded (rarely 4-angled), *hollow*, 4−8 mm ∅, *septate* at 3−10 cm intervals, contracted immediately below spikelet; leaf sheaths to 1/2 or 1/3 of culm height, ending in a triangular lobe; spikelet pale green, cylindric, 2,5−5 cm long, 2−6 mm ∅, *narrower than culm*.

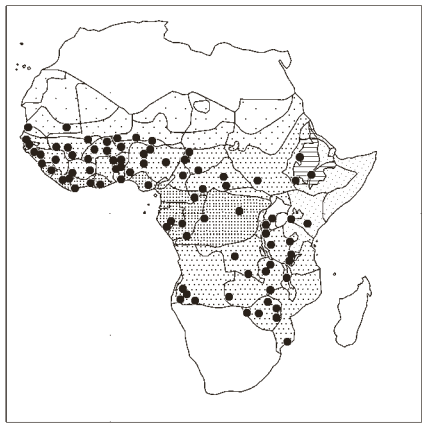
Swamps; shallow parts of lakes; in deeper parts of marshes close to open water; at wooded ponds by river; river banks; edges of mangroves; humid rice fields; ponds, often in standing water, submerged or forming floating mats; sometimes locally common or forming pure stands; sometimes in salt or brackish water; 0−2170 m alt. – Troublesome in irrigated crops.

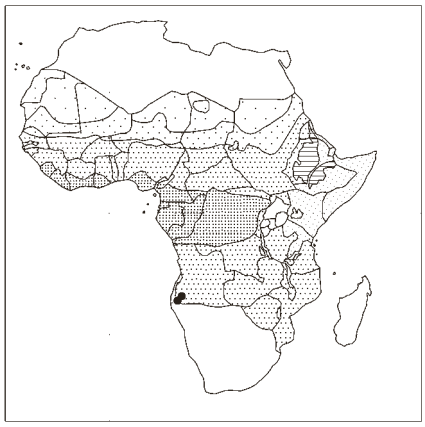
Variable species: stems and spikelets may be very short and narrow, perhaps due to dry habitat conditions.

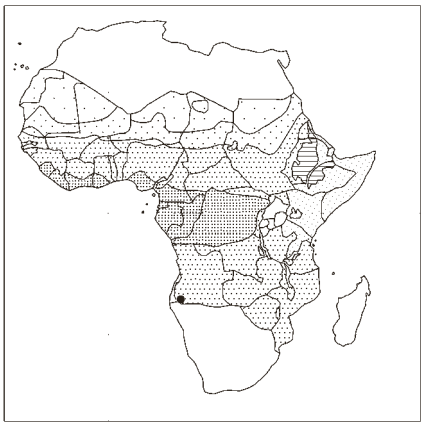
Namibia, S. Africa, Botswana; Madagascar, Seychelles, Mauritius; tropical & subtropical Old World, from India (Patil & Prasad, Ind. J. Forestry 32: 448, 2009), Pakistan, Sri Lanka, Thailand, Vietnam, Malaysia, Taiwan, S China, Japan, Australia, Pacific islands. "Although originating in the Old World tropics, because this species is commonly cultivated for its tubers, the actual distribution is uncertain. As a cultivated plant, it is grown throughout most of China" (Fl. China, text 23: 191, 2010).

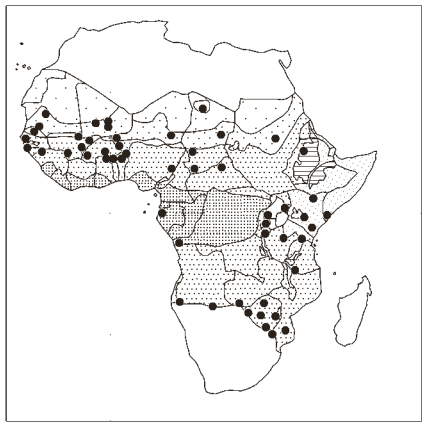

Diplacrum africanum

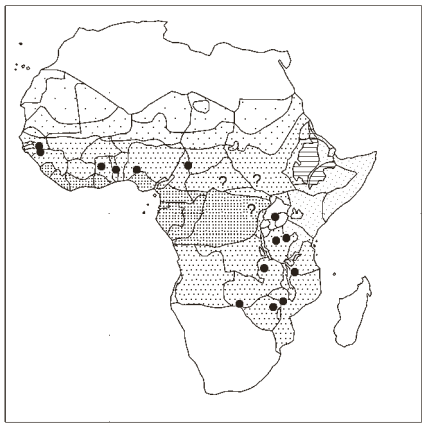

Diplacrum capitatum

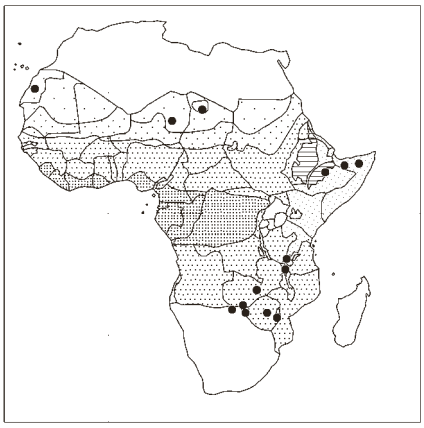

Eleocharis acutangula

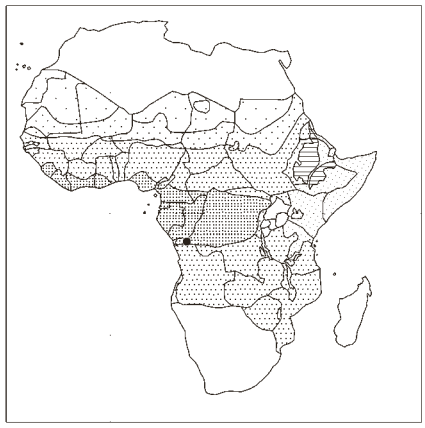

Eleocharis angolensis

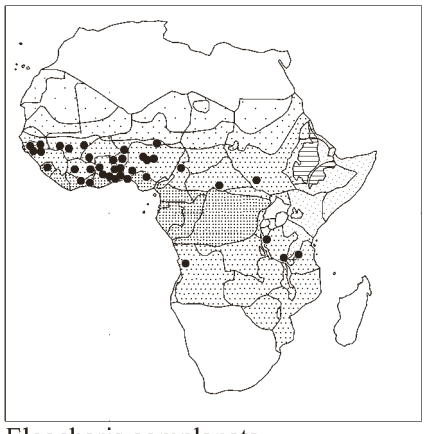

Eleocharis antunesii

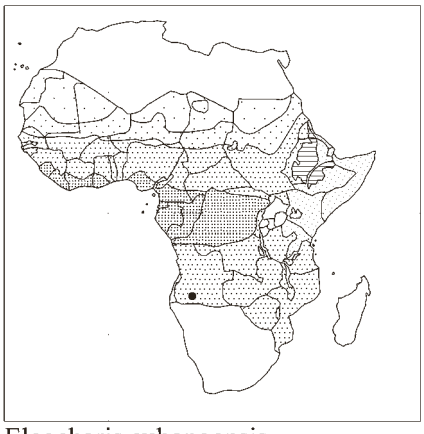

Eleocharis atropurpurea

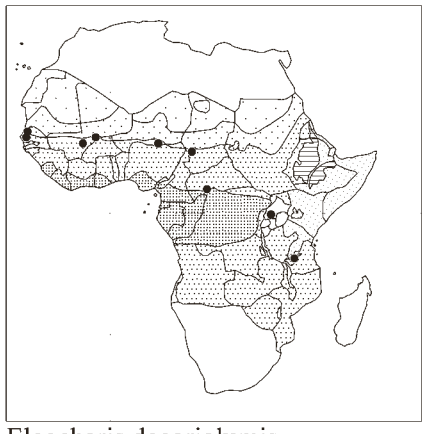

Eleocharis brainii


Eleocharis caduca


Eleocharis callensii


Eleocharis complanata


Eleocharis cubangensis


Eleocharis decoriglumis

A cultivated form, usually referable to var. *tuberosa* (Schult.) T. Koyama (bas.: *E. tuberosa* Schult. 1824; syn. *Scirpus tuberosus* Roxb. 1815, nom. illeg.), is the "Chinese water chestnut". The crisp apple-flavoured tubers that terminate the stolons are eaten raw or made into chips. Plants in Natal lack these tubers ! (Gordon-Gray, l.c.). In cultivated races tubers may measure to 5 cm ∅. Flour is also made from tubers.

Fibres used for matting. Also grown as ornamental.

E. geniculata (L.) Roem. & Schult., incl. fa. *brunnea* S. González & Reznicek, and var. *minor* (Vahl) Roem. & Schult.; Svenson in Rhodora 41: 50, 1939; Gordon-Gray, Cyper. Natal: 80, 1995; Clarke & Mannheimer, Cyper. Namibia: 95, 84 (map), 1999; Simpson & Inglis in Kew Bull. 56: 313, 2001; Fl. Pakistan 206, Cyper.: 60, 2001; Archer & Craven, Cyper. Namibia: 21, 2004; Akoègninou & al., Fl. analyt. Bénin: 100, 2006; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Fl. Trop. E. Afr., Cyper.: 43, 2010; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 119, 2010; Mesterházy in Lidia 7/5: 106, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 108, 2014. – Icon.: Rhodora 39: pl. 463 opposite p. 262, 1937; Berhaut, Fl. ill. Sénégal 9: 227, 1988; Thulin, Fl. Somalia 4: 107, 1995; Fl. Eth. & Eritrea 6: 405−406, 1997; Greuter & al. in Bot. Chron. 15: 19, 2002; Prasad & Singh, Sedges Karnataka (India): 144, 2002; Cook, Aquat. & wetland pl. south. Afr.: 98, 2004; Boulos, Fl. Egypt 4: 364, 2005; Fl. Gabon 44, Cyper.: 127, 2012; Fl. China, Ill. 23: 262, 2012; Rodriguesia 64: 675, 2013; J. Bot. Soc. Bengal 68: 125−127, 2014 (details); Browning & Goetghebeur, Sedge genera Africa & Madag.: 46, 2017.

bas.: *Scirpus geniculatus* L.

syn.: *Bulbostylis geniculatus* (L.) Steven; *Chlorocharis geniculata* (L.) Rikli; *Eleocharis capitata* R. Br. 1810, non *Scirpus capitatus* L. 1753; *Scirpus geniculatus* var. *minor* Vahl; *Eleocharis caribaea* (Rottb.) S. F. Blake; *Scirpus caribaeus* Rottb.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. – For notes on nomenclature, See: Kartesz & Gandhi in Phytologia 72: 21−22, 1992; Greuter & al. in Bot. Chron. 15: 21−24, 2002.

Annual herb with tufted culms from a compact base; stolons absent, culms *12−45 cm* long, 0,6−0,9 mm ∅; sheath reddish or purple at base, greyish above, ending in a short triangular acute lobe; spikelet ovoid, compact, 3−4 × *2,5−3,5 mm*, many-flowered; *nutlet blackish purple*, *smooth*, shiny; glumes lacking a keel.

Plant with the appearance of an *Equisetum*. Apparently the only tropical *Eleocharis* which catches the eye of the general collector (Svenson, Rhodora 39: 261, 1937).

Lake shores; depressions in littoral sand dunes; brackish marshes (by the sea); grassy swampy places; swamps; mangrove swamps; lagoons; rice fields; widespread along the coast (Liberia); (cosmopolitan) weed; 0−1150 m alt.

Bioko/Fernando Poo; Libya, Egypt; S. Africa, Botswana; Madagascar; Europe (Italy); Socotra; SW Asia, Yemen (Wood, Handbook Yemen flora: 330, 1997); Asia from Afghanistan, Iraq, Iran, E-wards from India, China – Taiwan – Indonesia – Malaysia – Japan (Ryukya isl.), to Australia; Pacific islands; N., C. & S. America, West Indies; tropical, subtropical and warm-temperate regions worldwide.

Has been confused with *E. caduca* (See comments under that species).

E. gossweileri H. E. Hess – Icon.: Ber. Schweiz. Bot. Ges. 63: 328, pl. VI/4, 1953.

Perennial tufted herb 50−70 cm tall with long subterranean stolons; culms 1,5−2,5 mm ∅, rounded; sheaths reddish brown at base, yellowish brown above; spikelet 2−5 cm long, 3−4 mm ∅.

Pan ("Pfanne") in the mountains S of Ganda (= Vila Mariano Machado) in the region of Chicuma, near Cassipera, growing with *Eleocharis variegata*, *E. dulcis*, (*E. pseudofistulosa* =) *E. acutangula*; 1750 m alt. – Angola, not Zaire !

? Known only from the type collected in 1952.

E. hooperiana D. J. Rosen – Icon.: Novon 20: 74, 2010.

syn.: *E. nupeensis* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 314, 1972, quoad specim. Jordan 306; *E. variegata* sensu op. cit.: 314, quoad specim. Chillou 697.

Perennial herb; rhizomes elongated, reddish brown, to 1,5 mm ∅, with scales to 8,5 mm long; culms terete, 40,5−83 cm long, 1,3−2,8 mm ∅, brownish green, internally spongy, with incomplete transverse septa; sheaths 2, membranous, loose, friable, pinkish green to cinnamon basally, brownish to straw-colored distally, apex of upper sheath acute; spikelet cylindric, obtuse, 1,6−2,5 cm long, 2−3 mm ∅.

In a stream.

Near *E. nupeensis* but with longer and wider culms (40,5−83 cm × 2,8 mm, not 30−50 cm × 0,5−2 mm); longer floral scales (4−4,5 × 2,8 mm, not 3,5−4 mm long); longer and more coarsely spinulose perianth bristles (subequal, usually all overtopping the nutlet, coarsely spinulose to ± the base); slightly larger nutlet (1,7−2 × 1,3−1,7 mm, not 1,6 × 1,2 mm); and stylopodiam longer (0,6−1,3 mm, not 0,3−0,5 mm) than wide.

E. hooperiana is perhaps a large form of *E. nupeensis* for which Lowe & Stanfield (Flora of Nigeria: Sedges: 62, 1974) give flowering stems 45−70 cm high, 2−3 mm ∅.

E. kirkii C. B. Clarke; Fl. Trop. Afr. 8: 410, 1902.

Glabrous annual herb; culms tufted, 7,5−12,5 cm tall; spikelet c. 0,5 cm long, ellipsoid, pale obscur reddish, many-flowered; perianth bristles 7, longer than nutlet.

Island in River Zambesi, at Victoria falls.

? Known only from the type ? (Kirk s. n., s. d.).

E. marginulata Hochst. ex Steud.; Fl. Trop. E. Afr., Cyperaceae: 40, 2010. – Icon.: Fl. Eth. & Eritrea 6: 404, 406, 1997; Cook, Aquat. & wetland pl. south. Afr.: 99, 2004.

syn.: *E. striata* Hochst. ex Steud., non Hochst. ex Engl.

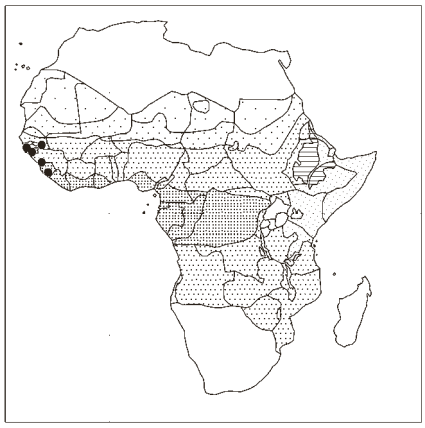
Tussocky perennial herb with short horizontal rhizome and crowded culms 20−80 cm long, 0,15−0,2 cm ∅; sheaths red-brown, often dark purple below, apex mucronate; spikelet 0,8−2 cm long, 3−4 mm ∅, lanceolate, 20−40-flowered (sometimes with viviparous shoots).

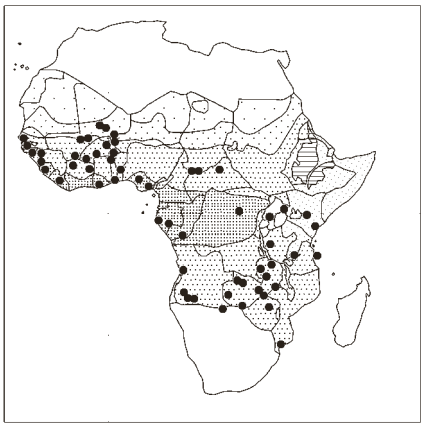
Wetter depressions in grassland; swampy grassland; ditches, pools; in mud beside streams; river flood plains; lake margins; swamps; sometimes very common locally; 1000−2900 m alt.

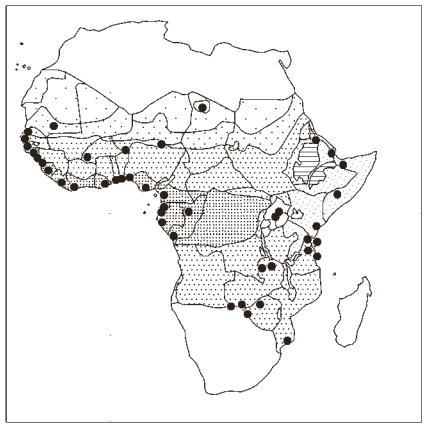
Botswana; ? Saudi Arabia.

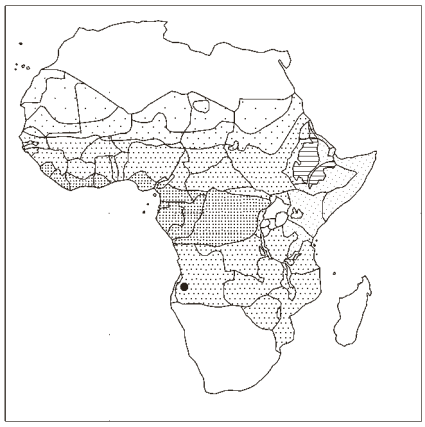
E. minuta Boeckeler; Rhodora 41: 54, 1939; Fl. Trop. E. Afr., Cyper.: 54, 1939. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 71, 1983.

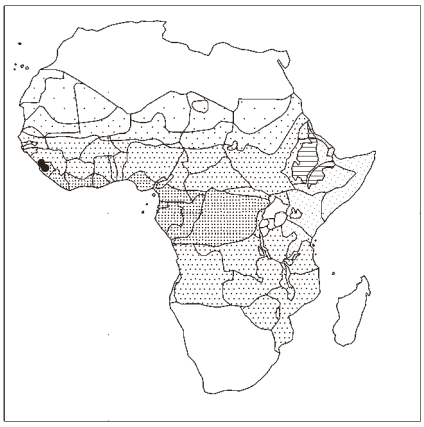
Dwarf annual or perennial herb with densely tufted culms 1−9 cm long, 0,2−0,7 mm ∅, slightly flattened to quadrangular; sheaths 2, purple near base, grey above, the upper ending in a triangular or truncate lobe; spikelet ovoid 2−4 × 1−2 mm, 3−7-flowered, elongating to 7 mm in fruit.

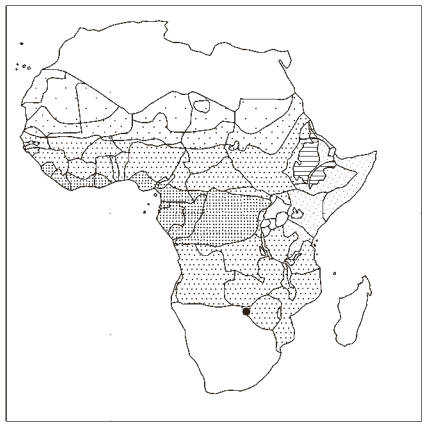

Eleocharis deightonii

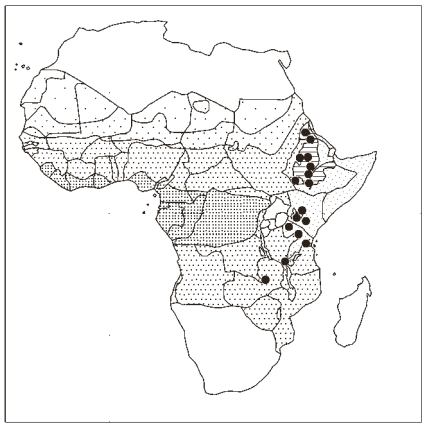

Eleocharis dulcis

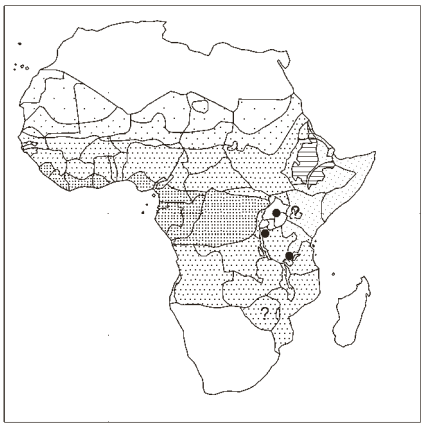

Eleocharis geniculata

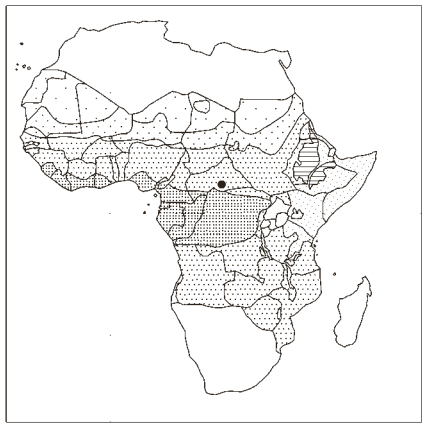

Eleocharis gossweileri

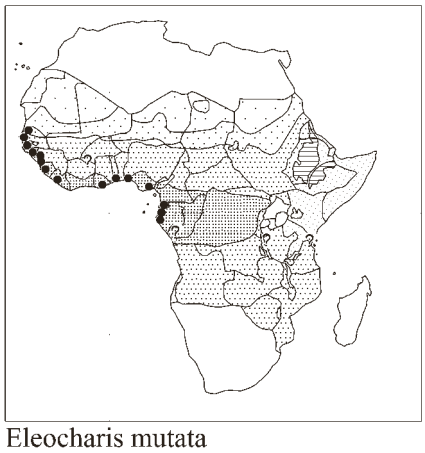

Eleocharis hooperiana

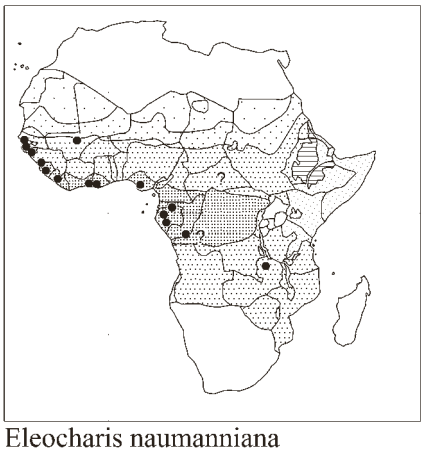

Eleocharis kirkii

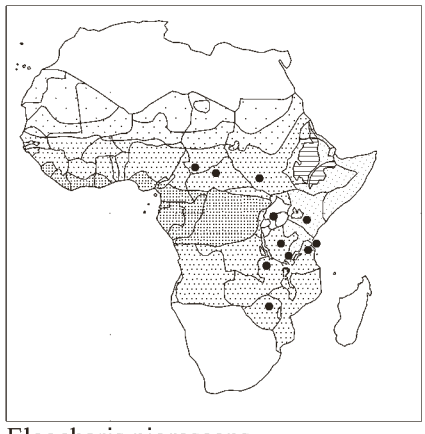

Eleocharis marginulata


Eleocharis minuta


Eleocharis monantha


Eleocharis mutata


Eleocharis naumanniana


Eleocharis nigrescens

Lake shore; pond; swamp; 1150−1200 (? 1800−2100) m alt.

Madagascar, Mascarene isl.; E Australia (introduced).

E. monantha Nelmes, Kew Bull. 7: 290, 1952.

Submerged herb; culms numerous, elongated, filiform, not septate, grooved-flattened, flaccid, producing offsets; spikelet linear or oblong-lanceolate, becoming lanceolate in fruit, occasionally viviparous, 4−5 mm long, 1-flowered.

Marsh at source of river, pool in running water, floating, flowers expanded at the water level.

? Only known from the type collected in 1927.

E. mutata (L.) Roem. & Schult.; Rhodora 31: 133, 1929; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 625, 1985; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Fl. Trop. E. Afr., Cyper.: 40, 2010 (under *E. fistulosa* = *E. acutangula*). – Icon.: Rhodora 31: pl. 188/8, 1929; Haines & Lye, Sedges & rushes E. Afr.: 66−67, 1983; Berhaut, Fl. ill. Sénégal 9: 228, 1988 (details); Cook, Aquat. & wetland pl. south. Afr.: 100, 2004; Rosen & al. in Blumea 53: 240, 2008; Fl. Gabon 44, Cyper.: 127, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 363, 2014.

bas.: *Scirpus mutatus* L. non Roxb. ex C. B. Clarke

syn.: *Limnochloa mutata* (L.) Nees; *Eleocharis scariosa* Steud.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard. Kew.

Perennial tufted rhizomatous herb with stolons to 40 cm long; culms stiff, 0,4−1 m tall, 2−4 mm ∅, upper part markedly triangular with sides 3−5 mm wide, angles acute, sides concave; sheaths 2−3(−4), purple or brown, the uppermost one 5−23 cm long, terminating with a 5 mm long narrow triangular limb with a thread-like tip; spikelet subcylindric, 1,5−5 cm long, 3−5 mm ∅; glumes densely set, lying flat, obovate, 4−5 × 3−5 mm, dirty straw-coloured with a brown narrow strip.

Seasonal and permanent pools and along marshy banks of pools; swamps; muddy flat; brackish water in coastal swamps, lagoons, mangrove; rice fields near salty grounds; sometimes in large and pure stands; 0−? 1000 m alt. (a coastal species).

Eleocharis mutata-community, southern Togo at shorelines of permanent to semi-permanent ponds, in a water depth of up to 80 cm, on sand or clay (vide Phytocoenologia 35: 350, 2005).

Bioko/Fernando Poo; S. Africa; S N. America (only SE Texas), West Indies, C. & N S. America (map in Rosen & al., o.c.: 242). – E. Africa, Pemba Island, Tanzania, T4, Kigoma Distr.: "a problem taxon" (Fl. Trop. E. Afr., Cyper.: 40, 2010). – Thiombiano & al. (Cat. pl. vascul. Burkina Faso: 49, 2012) cite *E. mutata* from Comoé (= SW – most part of the country). – Occurrence in Angola also uncertain.

Very similar to *E. acutangula* in habit but differs from the latter in more glumes and different nutlets.

E. naumanniana Boeckeler; Nelmes in Kew Bull. 7: 289−290, 1952; Lowe & Stanfield, Fl. Nigeria: Sedges: 62, 1974; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011. – Icon.: Bot. Not. 1951: 389, 1951; Amer. J. Bot. 39: 372, 1952 (as *E. caillei*); Berhaut, Fl. ill. Sénégal 9: 229, 1988; Cook, Aquat. & wetland pl. south. Afr.: 100, 2004; Fl. Gabon 44, Cyper.: 129, 2012.

Annual submerged herb; stems thread-like, < 0,5 mm ∅, usually branching, producing a few similar stems with small leaf-shoots and roots at nodes, each branch ending in a single spikelet; this branching may continue indefinitely (Cook, l.c.); stems 15−80 cm long, rounded or angular, septate; leaves with sheath to 1,5 cm long; blade thread-like, to 11 cm long; inflorescence a solitary spikelet or an anthela of 1 sessile spikelet and a few spikelets on c. 5 cm long peduncles; spikelet 1,5−4,5 mm long, 1 mm ∅.

In still or slowly flowing oligotrophic water, sometimes in rapid streams; up to ± 1000 m alt.; when stranded forming non-flowering mats; such terrestrial sterile plants may be confused with *Websteria confervoides*; sometimes very common (c. 20 miles = 30 km E of Monrovia, Liberia, fide Nelmes & Baldwin 1952).

Botswana (var. **naumanniana**).

Comprises 2 vars.: – var. **caillei** (Hutch. ex Nelmes) S. S. Hooper (bas.: *E. caillei* Hutch. ex Nelmes), with floating stems not or only obscurely septate, spikelets 1,5−3 mm long, in coastal W. Africa; – var. **naumanniana** (syn.: *E. testui* Cherm.) with floating stems clearly septate, spikelets 4−5 mm long; widespread. Treated as a synonym of *E. retroflexa* subsp. *subtilissima* by Cook, Aquat. & wetland pl. south. Afr.: 101, 2004.

E. nigrescens (Nees) Kunth, excl. var. *minutiflora* (Boeckeler) Svenson (= *E. setifolia* subsp. *setifolia*); Simpson in Kew Bull. 43: 423, 1988; Fl. Trop. E. Afr., Cyper.: 46, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015. – Icon.: Svenson in Rhodora 39: pl. 462, 1937; Hess in Ber. Schweiz. Bot. Ges. 53: 348, 1953; Haines & Lye, Sedges & rushes E. Afr.: 72, 1983; Simpson, o.c.: 426, 1988.

bas.: *Scirpidium nigrescens* Nees

syn.: *Isolepis nigrescens* (Nees) Steud.; *Scirpus nigrescens* (Nees) Salzm. ex Steud.; *Eleocharis atropurpurea* (Retz.) J. Presl & C. Presl var. *nigrescens* (Nees) Boeckeler; *E. hildebrandtii* Boeckeler; *E. perrieri* Cherm.

Tufted annual herb with crowded stems 3−11 cm tall, filiform, obscurely 3−4-angular, often rather flattened, 0,2−0,7 mm ∅, often with branching base; sheaths reddish to purple near base, greyish above, the upper ending in an acute to attenuate lobe 1−2 mm long; spikelet ovoid, 2−5 × 1−2,5 mm; perianth absent.

Damp depressions; old rice paddies; pool edges; near waterfalls; 0−1700 m alt.

Madagascar; tropical & subtropical America: SE USA, C. America, West Indies, S. America. – Not in W. Africa as cited in Fl. Trop. E. Afr., Cyper.: l.c.

Close to E. *atropurpurea* but lacking perianth bristles, and nutlet triangular, not flattened.

E. nupeensis Hutch.; Raynal in Adansonia, Sér. 2, 7: 318, 1967; Fl. W. Trop. Afr., ed. 2, 3/2: 314, 1972, excl. specim. Jordan 342 (= *E. hooperiana*); Lowe & Stanfield, Fl. Nigeria: Sedges: 62, 1974; Rosen in Novon 20: 75, 2010; Fl. Trop. E. Afr., Cyper.: 41, 2010 (under *E. variegata*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 68, 1983; Berhaut, Fl. ill. Sénégal 9: 229, 1988.

syn.: *E. mitrata* (Griseb.) C. B. Clarke var. *africana* C. B. Clarke; *E. fistulosa* Schult. var. *micrantha* Cherm.

Tufted perennial herb with reddish rhizome c. 1 mm ∅; culms 30−50 cm long, 0,5−1 mm ∅, cylindric, channelled; sheath pale green or slightly red tinged, c. 10 cm long; spikelet cylindric, 1−3 cm × 1−4 mm, 15−25-flowered; perianth bristles markedly unequal.

Temporary pools on rocky outcrops; spongy savannas.

Not in Tanzania.

"Close to *E. variegata* but differs in being more slender and nutlets narrower above, and with very large light appendage". Svenson in Rhodora (41: 6, 1939) mentions the great complexity

of the *E. fistulosa* (= *E. acutangula*)/*nupeensis*/*mutata*/*variegata*/*calocarpa* (= *E. variegata*) group (Fl. Trop. E. Afr., l.c.).

E. onthitensis H. E. Hess; Archer & Craven, Cyper. Namibia: 95, 1999; Cook, Aquat. & wetland pl. south. Afr.: 101, 2004 (under *E. retroflexa* subsp. *subtilissima*). – Icon.: Ber. Schweiz. Bot. Ges. 63: 324, 338, pl. VII/3, 1953.

Annual tufted herb 4−6 cm tall with short stolons; culms 0,1−0,15 m ∅, flaccid, 4-angled; sheaths yellowish brown, rarely rusty brown below, and membranous, hyaline above, margins irregularly divided or truncate; spikelet ovate, 1,5−2,5 mm long, 1−1,5 mm ∅, 3−5-flowered.

Edge of pool on sandy-clayey soil, growing with *Scirpus* spp. *Cyperus* spp., *Eleocharis antunesii*, (*E. pseudofistulosa* =) *E. acutangula* subsp. *acutangula*; 1830 m alt.

Treated as a synonym of *E. retroflexa* subsp. *subtilissima* by Cook, l.c., who also cited *E. naumanniana* var. *caillei* as another synonym.

Taxonomic status uncertain. According to Hess, near *E. brainii*.

(**E. palustris** (L.) Roem. & Schult.)

E. palustris is a species occurring in the temperate northern hemisphere; in Africa it occurs in a belt from Morocco to Egypt present also in Madeira and the Canary Islands (cf. Boulos, Fl. Egypt 4: 363, 2005; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 119−120, 2010).

Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015, list *E. palustris* as possibly present in Sudan, Jebel Marra, marshy stream bank, 2600 m alt. The specimen Wickens 2676 (Wickens, Jebel Marra in Kew Bull. Add. Ser. 5: 163, 1976) was listed as *E.* sp. aff. *E. tibestica* Quézel.

Darbyshire & al., l.c., note: "the identity of this specimen requires confirmation; if correct, it represents the southernmost limit of *E. palustris* in Africa."

(***E. pseudofistulosa*** H. E. Hess); See above under **E. acutangula** (Roxb.) Schult. subsp. **acutangula**

E. retroflexa (Poir.) Urb.; Renier, Fl. Kwango 1: 73, 1948 (*E. chaetaria*); Fl. W. Trop. Afr., ed. 2, 3/2: 312−313, 1972 (*E. subtilissima*). – Icon.: Rhodora 39: pl. 461/11 opposite p. 246, 1937; Amer. J. Bot. 39: 374, 1952 (*E. subtilissima*); Haines & Lye, Sedges & rushes E. Afr.: 75, 1983 (subspp.); Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 46, 2002; Prasad & Singh, Sedges Karnataka (India): 147, 2002 (subsp. *chaetaria*); Cook, Aquat. & wetland pl. south. Afr.: 101, 2004 (subsp. *subtilissima*); Fl. Gabon 44, Cyper.: 129, 2012; Fl. China, Ill. 23: 260, 2012 (*E. chaetaria*).

bas.: *Scirpus retroflexus* Poir.

syn.: *Baeothryon retroflexum* (Poir.) A. Dietr. – For synonyms of subspp., See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual tufted herb; culms angular, 3−20 cm long, 0,3−0,5 mm ∅; sheaths membranous, straw-coloured to light brown, 0,5−2 cm long; spikelet ovoid, 3−6 mm long, 1−2 mm ∅, 3−5-flowered, sometimes an extra spikelet developing from base of spikelet, but also viviparous with growth from axils of glumes.

Swamps; pools; flooded savannas; mixed with *Utricularia villosula*; lofty pastures, in sandy places grown with short herbage and flooded in rainy seasons; growing intermingled with other glumaceous plants; near sea-level to 700 m alt.

"*E. retroflexa* in the strict sense, is confined to the New World" (Cook, l.c.); Botswana; Mauritius; Asia from India, Sri Lanka, Nepal E-wards to Malaysia, Japan (Ryukyu islands) – Papua New Guinea – Philippines – E Australia, Pacific islands; tropical America. – In Africa not in W Tanzania (Fl. Trop. E. Afr., Cyp.: 44, 2010, under *E. brainii*).

Comprises 3 subspp. in Africa: – subsp. **retroflexa** [syn.: *E. depauperata* (Vahl) Kunth; *Cyperus depauperatus* Vahl; etc.]; – subsp. **chaetaria** (Roem. & Schult.) T. Koyama [bas.: *Eleocharis chaetaria* Roem. & Schult. 1817 (no type designated), non Hance 1878; syn.: *Trichophyllum chaetaria* (Roem. & Schult.) House; *Scirpus chaetarius* (Roem. & Schult.) Spreng.; – subsp. **subtilissima** (Nelmes) Lye [bas.: *Eleocharis subtilissima* Nelmes], differing from subsp. *chaetaria* in having slightly larger glumes and a slightly different nutlet; also more often an aquatic plant with floating stems. – The geographical distribution of each subspecies in Africa needs further studies. The taxonomic status of *Heleocharis chaetaria* Roem. & Schult. var. *bozumensis* Cherm. from Central African Republic needs clarification. – A forth subspecies, viz. **depressa** Zavaro & Pabón is endemic in Cuba.

(***E. robusta*** (Boeckeler) H. E. Hess) – Icon.: Ber. Schweiz. Bot. Ges. 63: 325, 332, pl. VII/2, 1953.

bas.: *E. fistulosa* Schult. var. *robusta* Boeckeler

Treated above as a synonym of **E. acutangula** subsp. **acutangula**.

Not mapped separately. Known from Sudan (Schweinfurth 2326) and from Angola (Hess 51/419, 52/847, 52/1853).

"Differs from *E. acutangula* (*E. fistulosa*) in having smooth perigon bristles, not barbellate, and in the size of the nutlet (2,7−2,8 mm long, not 1,4−2 mm)".

E. setifolia (A. Rich.) J. Raynal, Adansonia 7: 318, 1967; Simpson in Kew Bull. 43: 427, 1988 (subsp. *schweinfurthiana*); Akoègninou & al., Fl. analyt. Bénin: 100, 2006; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Fl. Trop. E. Afr., Cyper.: 42, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012 (map by Schmidt & al. in Phytotaxa 304: 90, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110−111, 2015. – Icon.: Rhodora 39: pl. 461 facing p. 246, 1937 (*E. schweinfurthiana*); Raynal, o.c.: 426, 1967; Haines & Lye, Sedges & rushes E. Afr.: 73, 1983; Kew Bull. 43: 426, 1988; Berhaut, Fl. ill. Sénégal 9: 230, 1988; Fl. Eth. & Eritrea 6: 406−407, 1997.

bas.: *Isolepis setifolia* A. Rich.

Annual herb; culms tufted, crowded, filiform, 3-angular, 4−20 cm tall, 0,3−0,4 mm ∅, persistent after fruit has fallen, with small white basal tubers, covered in tough short scales; sheaths pale, ending in short triangular lobe; spikelet ovoid or obovoid, 2−5 × 1−2,5 mm, elongating to 5 mm in fruit.

Ponds, pools; seepage areas; seasonally swampy grassland; sometimes locally common; damp places on rocks; temporary pool with *Cyperus podocarpus*, *Isoetes melanotheca*; – 850−1700 m alt.

Madagascar (subsp. *setifolia*); Thailand, Philippines, Australia; S N. America, C. America, Caribbean, Brazil (introduced).

Comprises 2 subspp.: – subsp. **setifolia** [syn.: *E. minutiflora* Boeckeler; *E. nigrescens* (Nees) Kunth var. *minutiflora* (Boeckeler) Svenson; *E. carolina* Small]; – subsp. **schweinfurthiana** (Boeckeler) D. A. Simpson [bas.: *E. schweinfurthiana* Boeckeler; syn.: *E. helenae* Buscal. & Muschl.], with perianth bristles at least half as long as nutlet; from Senegal to Sudan.

ELEOCHARIS

E. spongostyla H. E. Hess – Icon.: Ber Schweiz. Bot. Ges. 63: 325, 344, pl. VII/4, 1953.

Probably perennial, tufted herb 10–25 cm tall, with to 1 cm long stolons; culms greyish green, 0,7–1,3 mm ∅, elliptic, sulcate; sheaths rusty- to blackish brown, obliquely truncate, not inflated; spikelet cylindric to ovoid, 6–12 × 1,5–2 mm, many-flowered.

In a marsh around a source (pool); 1320 m alt.

Close to *E. complanata* (syn.: *E. anceps*) but differs in the form of the base of the style: in *E. complanta* the base is pyramidal and depressed, with only a short point exserted from the centre, whereas in *E. spongostyla* it is spongy and placed flat on the nutlet like a mitre.

E. trilophus C. B. Clarke; Ber. Schweiz. Bot. Ges. 63: 345–346, 1953. – Icon.: Rhodora 39: pl. 462/10 facing p. 247, 1937; Berhaut, Fl. ill. Sénégal 9: 231, 1988.

Tufted annual herb; culms 3–10 cm tall, hair-like; sheath reddish, ending by a narrow, 3-angular lobe; spikelet ovoid to subcylindric, 2–3 × c. 1 mm, brown-red, 4–8-flowered.

Stream beds on clay; moist sands; ground subject to flooding; near sea level to 1150 m alt.

Very near ("perhaps conspecific with") the American (S U.S.A., C. & S. America, West Indies) *E. minima* Kunth from which it differs only in the somewhat larger glumes and achene (Fl. W. Trop. Afr., ed. 2, 3/2: 313, 1972).

E. trilophus misapplied = *E. brainii*.

E. variegata (Poir.) C. Presl; Raynal in Adansonia, Sér. 2, 7: 319, 1967; Fl. W. Trop. Afr., ed. 2, 3/2: 314, 1972 (excl. specim. Chillou 697 = *E. hooperi*); Clarke & Mannheimer, Cyper. Namibia: 95, 85 (map). 1999; Akoègninou & al., Fl. analyt. Bénin: 100, 2006; Lisowski, Fl. Rép. Guinée 1: 400, 2009; Rosen in Novon 20: 75, 2010 (in key); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 112, 2010; Fl. Trop. E. Afr., Cyper.: 40–41, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012 (map by Schimdt & al. in Phytotaxa 304: 90, 2017); Mesterházy in Lidia 7/5: 106, 2012. – Icon.: Rhodora 41/481: pl. 537 facing p. 1, 1939; Lowe & Stanfield, Fl. Nigeria: Sedges: 60, 1974; Haines & Lye, Sedges & rushes E. Afr.: 68–69, 1983; Berhaut, Fl. ill. Sénégal 9: 231, 1988; Cook, Aquat. & wetland pl. south. Afr.: 102, 2004; Fl. Gabon 44, Cyper.: 131, 2012.

bas.: *Scirpus variegatus* Poir.

syn.: *Baeothryon variegatum* (Poir.) A. Dietr.; *Eleocharis sieberi* Kunth; *E. graeffeana* Boeckeler; *E. calocarpa* Cherm., incl. var. *nuda* Cherm.; *Scirpus sieberi* (Kunth) Kuntze

Perennial herb 25–90 cm tall, stoloniferous; stolons to 30 cm long, c. 2 mm ∅; culms crowded in small tussocks, rounded, 3-or 4-angular, sometimes twisted, 1–5 mm ∅, ridged distinctly or obscurely; sheaths grey, green or purple, ending in a triangular greyish lobe; spikelet cylindric, 1–5,5 cm × 2,5–5 mm.

Lake margins; river sides; swampy grassland, seasonally flooded grassland; papyrus swamps; *Sphagnum* bogs; spongy savannas; in water up to 50 cm deep; 0–1200 m alt.

Namibia, Botswana; Madagascar, Mauritius, Réunion, Seychelles; tropical to warm Old World: Assam, Malesia (Sumatra), New Guinea (intermittently throughout the tropics).

E. welwitschii Nelmes; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 121, 1899 (as *E. palustris*); Clarke & Mannheimer, Cyper. Namibia: 96, 1999.

syn.: *E. palustris* sensu Rendle, l.c., non (L.) Roem. & Schult.

ELEOCHARIS WELWITSCHII

Perennial herb ± tufted on a stout hard rhizome; culms erect or ± curved, 10–25 cm tall, 0,75–1,5 mm ∅; sheaths often bright reddish; spikelet ovoid to cylindrical-ovoid, 0,6–1 cm long, 2,5–4 mm ∅, many-flowered; perianth bristles 0-few, weak and straggly.

Damp sandy places by river, growing with many other *Scirpoideae*.

Doubtfully occurring in Namibia (Archer & Craven, Cyper. Namibia: 21, 2004).

Confused with *E. palustris* from temperate N Hemisphere (Europe – Asia/Himalaya). Closely related to *E. marginulata* Hochst. ex Steud. from Eritrea, Ethiopia S-wards to Tanzania, and Arabian Peninsula.

* * *

UNPLACED NAME:

Eleocharis tenerrima Peter, Abh. Preuss. Akad. Wiss., Phys.-Math. Kl., N. F. 13/2: 52, 1928. Tanzania.

SYNONYMS:

Eleocharis anceps Ridl. = **Eleocharis complanata**
atropurpurea (Retz.) J. Presl & C. Presl var. *nigrescens* (Nees) Boeckeler = **E. nigrescens**
caillei Hutch. ex Nelmes = **E. naumanniana** var. **caillei**
calocarpa Cherm., incl. var. *nuda* Cherm. = **E. variegata**
capitata (L.) R. Br. 1810 = **E. geniculata**
caribaea (Rottb.) S. F. Blake = **E. genuiculata**
caribaea sensu Tăckholm 1974 = **E. caduca**
carolina Small = **E. setifolia**
chaetaria Roem. & Schult. 1817, non Hance 1878 = **E. retroflexa** subsp. **chaetaria**
confervoides (Poir.) Steud. 1855 (also Kunth 1837, T. Koyama 1985, G.C. Tucker 1987) = **Websteria confervoides**
depauperata (Vahl) Kunth = **Eleocharis retroflexa** subsp. **retroflexa**
dichotoma (L.) H. Karst. = **Fimbristylis dichotoma**
erratica (Rota ex De Not.) Steud. = **Eleocharis atropurpurea**
fistulosa Schult. 1824, incl. var. *robusta* Boeckeler = **E. acutangula** subsp. **acutangula**
fistulosa var. *micrantha* Cherm. = **E. nupeensis**
fistulosa Link 1820 = **E. acutangula** subsp. **acutangula**
graeffeana Boeckeler = **E. variegata**
helenae Buscal. & Muschl. = **E. setifolia** subsp. **schweinfurthiana**
hildebrandtii Boeckeler = **E. nigrescens**
intricata Kük., incl. var. *peteri* W. Schultze-Motel = **E. caduca**
madagascariensis Cherm. = **E. caduca**
media (Roxb.) Schult. = **E. acutangula** subsp. **acutangula**
minutiflora Boeckeler = **E. setifolia** subsp. **setifolia**
mitrata (Griseb.) C. B. Clarke var. *africana* C. B. Clarke = **E. nupeensis**
monandra Hochst. ex Steud. = **E. atropurpurea**
nigrescens (Nees) Kunth var. *minutiflora* (Boeckeler) Svenson = **E. setifolia** subsp. **setifolia**
nupeensis sensu Fl. W. Trop. Afr., ed. 2, 3/2: 314, 1972 = **E. hooperiana**
ovata (Roth) Roem. & Schult. var. *gaetula* Maire = **E. caduca**
palustris sensu Rendle, non (L.) Roem. & Schult. = **E. welwitschii**
perrieri Cherm. = **E. nigrescens**

planiculmis Steud. = **E. acutangula** subsp. **acutangula**
plantaginea (Retz.) Roem. & Schult. = **E. dulcis**
plantaginoidea W. Wight = **E. dulcis**
plantaginoides (Rottb.) Domin = **E. dulcis**
pseudofistulosa H. E. Hess = **E. acutangula** subsp. **acutangula**
robusta (Boeckeler) H. E. Hess = **E. acutangula** subsp. **acutangula**
scariosa Steud. = **E. mutata**
schweinfurthiana Boeckeler = **E. setifolia** subsp. **schweinfurthiana**
sieberi Kunth = **E. variegata**
striata Hochst. ex Steud., non Hochst. ex Engl. = **E. marginulata**
subtilissima Nelmes = **E. retroflexa** subsp. **subtilissima**
tenerrima Peter = ?
testui Cherm. = **E. naumanniana** var. **naumanniana**
testui sensu Berhaut 1954, 1957 = **E. naumanniana**
tibestica Quézel = **E. caduca**
trilophus sensu Adam 1962, non C. B. Clarke = **E. brainii**
variegata sensu Fl. W. Trop. Afr., ed. 2, 3/2: 314, 1972 p.p. quoad specim. Chillou 697 = **E. hooperiana**

(ELEOGITON)

Eleogiton cernua (Vahl) A. Dietr. = **Isolepis cernua**
fascicularis Nees = **I. fluitans** var. **fluitans**
fluitans (L.) Link = **I. fluitans**
variegata Goetgh. = **I. inyangensis**

(ELYNANTHUS)

Elynanthus cuspidatus (Rottb.) Nees = **Tetraria cuspidata**
gracilis Nees = **T. cuspidata**
loreus Nees = **T. cuspidata**
microstachyus Boeckeler = **T. cuspidata**
usambarensis Engl. 1894, nom. nud. = **T. usambarensis**

(ERIOCAULON; Eriocaulaceae)

Eriocaulon spadiceum Lam. = **Nemum spadiceum**

(ERIOSPORA)

Eriospora abyssinica Hochst. ex A. Rich. = **Coleochloa abyssinica**
abyssinica var. *brevirostrata* Peter = **C. microcephala**
abyssinica var. *castanea* C. B. Clarke = **C. abyssinica**
oliveri (Boeckeler) C. B. Clarke = **C. setifera** subsp. **setifera**
pilosa (Boeckeler) Benth., incl. var. *longipes* C. B. Clarke = **Afrotrilepis pilosa**
rehmanniana C. B. Clarke = **Coleochloa setifera** subsp. **setifera**
schweinfurthiana (Boeckeler) Benth. ex C. B. Clarke = **C. schweinfurthiana**
setifera (Ridl.) C. B. Clarke = **C. setifera**
villosula C. B. Clarke = **C. setifera** subsp. **setifera**
virgata K. Schum. = **C. virgata**

(EUCYPERUS)

Eucyperus bruneovaginatus (Boeckeler) Rikli = **Cyperus marginatus**

longus (L.) Rikli = **C. longus**
pungens Rikli = **C. alternifolius** subsp. **textilis** (Thunb.) Verloove (S. Africa)
textilis (Thunb.) Rikli = **C. alternifolius** subsp. **textilis** (Thunb.) Verloove (S. Africa)

FICINIA / *6*

Ficinia Schrad., nom. conserv., of ± 78 species in tropical-subtropical temperate Africa, with a centre of diversity in the Greater Cape Floristic Region; with 1 species in C Madagascar (*F. ciliata* Boeckeler) and 1 (*F. nodosa* (Rottb.) Goetgh.) extending from St Helena through S. Africa, S & E Australia, New Zealand, St Paul island to Juan Fernández island (nearly circum-Antarctic), and 1 species, viz. *F. spiralis* (A. Rich.) Muasya & de Lange [*Desmoschoenus spiralis* (A. Rich.) Hook. f.], growing in the same coastal habitat as *F. nodosa*, is endemic in New Zealand (Muasya & al., 2009: 62).

Ficinia has a history of misunderstanding and misidentification (Gordon-Gray 2008: 67 ff.). It is still inadequately known. It has an extensive synonymy (cf. Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew). There is overlap in generic limits between *Isolepis* and *Ficinia*. "Features of the sheath mouth and ligule are important in identification", and also the presence of a hypogynous disc (gynophore). "The ovary is seated on a small obconical stalk or gynophore which is expanded into a 'disc' that is often 3-lobed, the lobes generally alternating with the stamens. The presence of such a 'disc' is regarded as the main criterion of the genus, useful in distinction from close relatives that include *Isolepis* and *Cyperus* (Gordon-Gray 2008: 170). The gynophore takes the form of a short 'cup' of tissue enveloping the base of the young fruit. In the literature the disc is sometimes described as 'lacking'. This refers to nutlets where the gynophore has dried and fallen away". "To observe the gynophore accurately, mature achenes are required" (Gordon-Gray, Cyper. Natal: 81, 1995).

Poorly known genus in our area. Two species are known only from the type collection.

GARCÍA-MADRID, A. S. & al. (2015). See above under **Cyperus** [p. 88].

GORDON-GRAY, K. D. (2008). Studies in Cyperaceae in southern Africa 41: The Ficinia gracilis Schrader complex – An overview. *S. Afric. J. Bot.* 74: 167–171.

MUASYA, A. M. (2018). Ficinia gracilis complex (Cypereae, Cyperaceae) revisited – Species delineations and description of a new species from South Africa. *S. Afric. J. Bot.* 119: 230–235.

MUASYA, A. M. & al. (2009). What is a genus in Cyperaceae: Phylogeny, character homology assessment and generic circumscription in Cypereae. *Bot. Rev.* 75: 52–66.

MUASYA, A. M. & al. (2012). Two new leafless species of Ficinia (Cypereae, Cyperaceae) from the Greater Cape Floristic Region of South Africa. *S. Afric. J. Bot.* 79: 96–101.

RAYNAL, J. (1979). Notes cypérologiques: 21. Les Ficinia dans les herbiers anciens du Muséum de Paris. *Adansonia*, *Sér. 2*, 14: 199–214.

TSHILA, A. A. & al. (2017). Two new species in the Ficinia indica complex (Cyperaceae, tribe Cypereae) from South Africa. *Phytotaxa* 295: 49–59.

UBERTI, N. & al. (2016). Spikelet structure in Cypereae (Cyperoideae-Cyperaceae). *Bot. Rev.* 82: 239–257.

Ficinia borealis Lye; Lye in Biol. Skr. 54: 204, 2001.

syn.: *F. ecklonea* sensu Fl. Eth. & Eritrea 6: 427, 1997, non (Steud.) Nees

Perennial tufted herb with a woody rhizome; culms 30–75 cm tall; leaves to c. 40 cm long, 1–2 mm wide, flat or channelled, densely scabrid particularly along margin; inflorescence an irregularly shaped brown head 1,2–1,5 cm ∅ with 15–40 crowded

spikelets each 3−9 mm long, green variegated red-brown when young, ultimately brown.

Grassland or moorland, often in the *Erica*- or *Protea*- zone; swampy meadow on gentle slope; 2200−3000 m alt.

Known only from the type collected in 1982.

The true *F. ecklonea* is a S. African plant.

F. clandestina (Steud.) Boeckeler – Icon.: Fl. Eth. & Eritrea 6: 426, 1997; Muasya & al. in Nord. J. Bot. 32: 110−111, 2014 (under *Cyperus*).

bas.: ***Cyperus clandestinus*** Steud.

syn.: *Chamaexiphium clandestinum* (Steud.) Hochst.; *Melancranis clandestina* (Steud.) Kuntze; *Ficinia dregeana* H. Pfeiff. var. *abyssinica* H. Pfeiff.

Perennial herb with stolons 10 × 0,15−0,3 cm, covered with old scales often splitting up into fibres; culms 1−3 cm long, entirely concealed by the crowded leaves; lower leaf sheaths form leathery brown scales; upper sheaths leathery, green; blades green, successively longer, to 4 × 0,2−0,4 cm; inflorescence a dense head of spikelets almost hidden in basal sheaths; spikelets 5−8 per head, terete, 1−1,4 cm × 1−2 mm, narrowly lanceolate; nutlet known, and without a gynophore.

Grassy slopes (in grazed areas); 3000−3400 m alt.

The phylogenetic position is discussed by Muasya & al. (l.c.) who place it in the genus *Cyperus* (C_4 *Cyperus* clade, and closely related to *Remirea maritima* and *Cyperus cyperoides*).

Known from only 3 areas in Ethiopia.

F. filiformis (Lam.) Schrad. p.p. quoad comb. et syn. Lam. 1832; non (Burm. f.) Beetle 1949, nec Nees 1835 (= *F. stolonifera*); incl. var. *capillaris* Nees 1835, nom. illeg., and var. *rugulosa* (C. B. Clarke) H. Pfeiff., and fa. *albovaginata* Nees, fa. *brevifolia* Nees, fa. *rubiginosa* Nees, fa. *micrantha* H. Pfeiff.; but excl. var. *bergiana* (Kunth) H. Pfeiff in S. Africa, and fa. *contorta* Nees (= *F. stolonifera*). – Raynal in Adansonia num. cit.: 210, 1979; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Gordon-Gray in S. Afric. J. Bot. 74: 168−169, 2008; Fl. Trop. E. Afr., Cyper.: 118, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012. – Icon.: Browning & Goetghebeur, Sedge genera Africa & Madag.: 48, 2017; Muasya (2018): 232 (nutlet).

bas.: *Schoenus filiformis* Lam. 1791.

syn.: *Ficinia capillaris* (Nees) Levyns 1947 quoad comb. tantum; *Melancranis filiformis* (Lam.) Kuntze; *Ficinia tenuifolia* Kunth; *F. ludwigii* Boeckeler; *F. filamentosa* Nees 1835, nom. nud.; *F. capillaris* Nees ex C. B. Clarke 1894, nom. inval.; *F. rugulosa* C. B. Clarke; *Melancranis tenuifolia* (Kunth) Kuntze; *Isolepis filamentosa* sensu auct. non Vahl: Nees in Linnaea 7: 504, 1832; *I. ficinioides* Steud. 1855, nom. illeg., non A. Dietr. 1833; *I. fibrosa* Nees 1834, nom. inval.; *Scirpus elatus* Boeckeler 1870, nom. illeg., non (R. Br.) Poir. 1817; *S. aggregatus* Steud. ex C. B. Clarke 1894, nom. inval.; *S. leucocoleus* K. Schum. – See also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Tufted perennial herb with woody rhizome; culms 5−31 cm tall, 0,4−0,5 mm ∅ (c. 0,8 mm across the sheath), terete; leaf sheath brown to blackish below, but top grey translucent, 4−5,8 cm long; blade filiform, 5−20 cm long, *0,4−0,6 mm* wide, margins scabrid; inflorescence pseudolateral, a head of 1−6 terete spikelets, 4−7 mm long, 2−3 mm ∅; glumes distichous, reddish brown to ± blackish; gynophore lacking.

Grassland; moorland; often on rocky slopes; 1800−3400 m alt.

S. Africa.

Sometimes confused with *F. stolonifera*.

F. gracilis Schrad.; Gordon-Gray in S. Afric. J. Bot. 74: 168, 2008. – Icon.: Raynal in Adansonia, Sér. 2, 14: 202, 1979; Haines & Lye, Sedges & rushes E. Afr.: 133, 1983 (partly with only 2 style branches; cf. Note below); Gordon-Gray, Cyper. Natal: 84, 1995 (nutlet); Fl. Trop. E. Afr., Cyper.: 119, 2010; Muasya (2018): 232 (nutlet).

syn.: *Scirpus gracilis* Zeyh. ex Kunth 1837, nom. inval.; *Isolepis lineata* Nees 1835, nom. illeg., non (Michx.) Roem. & Schult. 1817; *I. commutata* Nees; *Ficinia commutata* (Nees) Kunth; *Melancranis commutata* (Nees) Kuntze; ? *Ficinia undosa* B. L. Burtt (cf. below).

Tufted perennial herb with short woody rhizome; culms 15−46 cm long, 0,8−1,1 mm ∅ (c. 1,6 mm across the sheath), terete; leaf sheath brown to blackish, 3−7 cm long, glabrous; blade 7−29 cm long, 0,8−1 mm wide, margins scabrid; inflorescence a terminal head of 6−25 spikelets each 3−7 mm long, 1,4−2,5 mm ∅, terete; gynophore absent to well developed.

Grassland; moorland; 2400−4500 m alt.

S. Africa, Lesotho.

Note: Gordon-Gray 1995 remarked on the figure published by Haines & Lye, l.c.: "the description states there are 3 style branches; only 2 are illustrated except in some florets of the spikelet (enlarged). All known Natal specimens have 3 style arms. The achene (enlarged) is not accurate for Natal examples".

Raynal (1979) established the identity of *Scirpus gracilis* Poiret (1804). He determined that Poiret's basionym derived from Du Petit-Thouars 17 (P, holo) which is *Ficinia ecklonea* (Steud.) Nees. *F. gracilis* Schrad. (type Zeyher 32) is quite distinct. But in Fl. Trop. E. Afr., Cyper.: 120, 2010, *Scirpus gracilis* Poir. is given as basionym of *F. gracilis*, and so do Haines & Lye, o.c. We follow Raynal (1979) and Gordon-Gray (2008). As to the S. African *F. undosa* B. L. Burtt, Gordon-Gray considered it a synonym of *F. gracilis*, noting that "Burtt's type is in agreement with Zeyher 32. Gordon-Gray (2008) also placed *Melancranis zeyheri* Kuntze 1891 in synonymy (based on *Ficinia zeyheri* Boeckeler 1871).

(**F. schlechteriana** H. Pfeiff. in Herbarium 54: 33, 1920) based on Schlechter 6423, Afr. austro-orient.

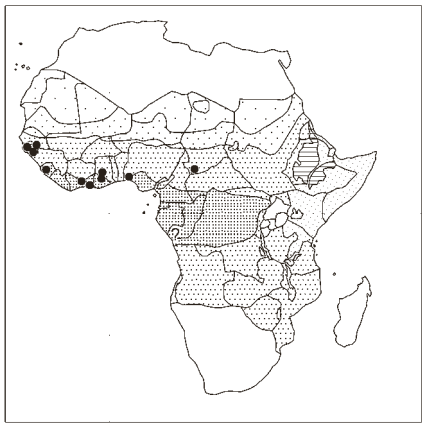
Unplaced name. J. P. Jessop published an article "Itinerary of Rudolf Schlechter's collecting trips in southern Africa" in J. S. Afric. Bot. 30/3: 129−146, 1964. These trips covered S. Africa and Mozambique.

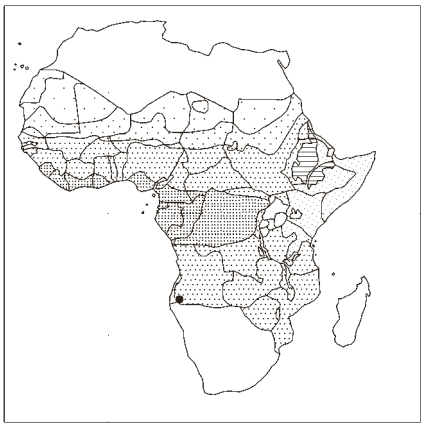
According to Jessop's list (p. 136) Schlechter nº 6423 was collected 21−25/1 1895, on Mount Frere or Mount Ayliff, both situated SW of Pietermaritzburg in S. Africa, Natal (map 2 p. 144).

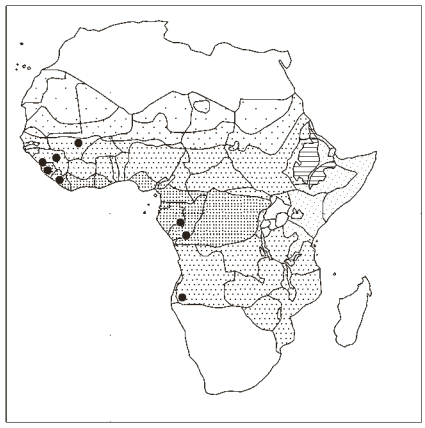
Described as resembling *F. lateralis* Kunth as regards culm, sheath and leaves; spikes 1−3, terminal, solitary, linear-lanceolate, with many spikelets; spikelets densely clustered, suboblong; glumes lanceolate-elliptic, apex mucronate; caryops small, 1/3 of length of glume, subglobose, tuberculate-punctate, stipe constricted at base; stigmas 2; gynophore with margin irregularly lobed.

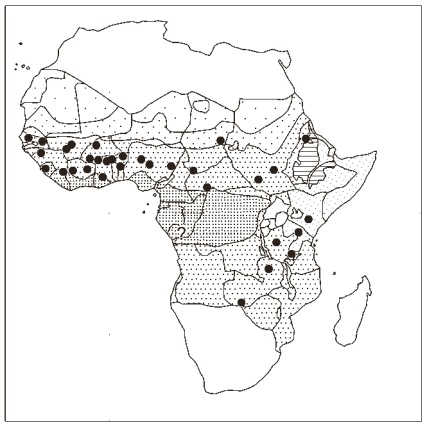
In Gordon-Gray's review of *Ficinia* in Natal (p. 81−89, 1995) there is no mention of this plant.

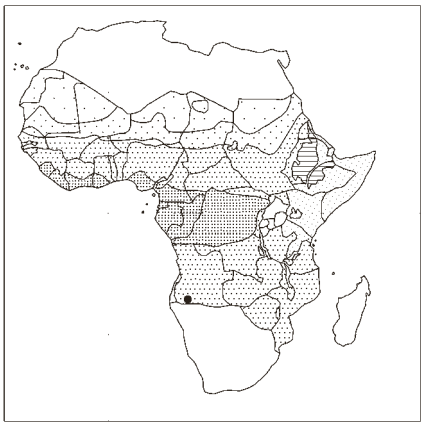
F. stolonifera Boeckeler; Raynal in Adansonia, Sér. 2, 14: 211, 1974. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 133, 1983 (as *F. filiformis*; cf. Gordon-Gray, Cyper. Natal: 87, 1995); Gordon-Gray, o.c.: 84, 1995 (nutlet); Browning & Goetghebeur, Sedge genera Africa & Madag.: 48, 2017.

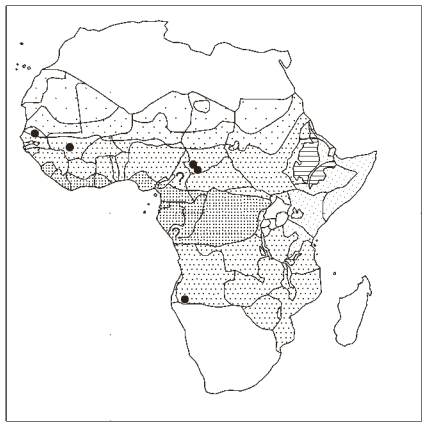

Eleocharis nupeensis

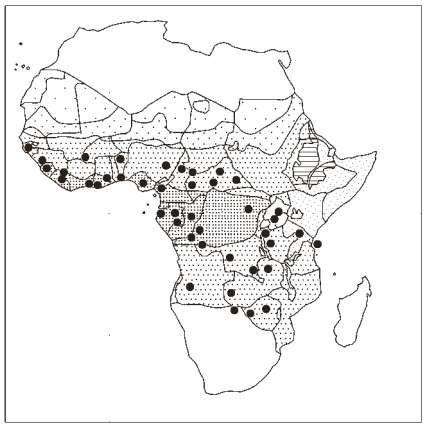

Eleocharis onthitensis

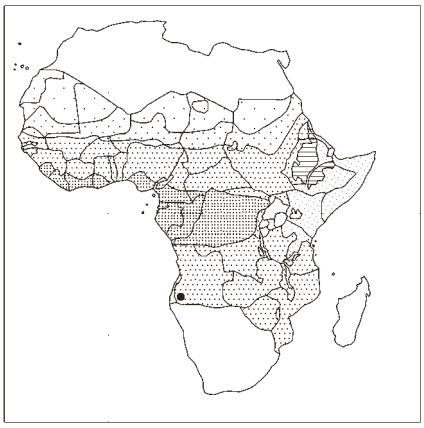

Eleocharis retroflexa

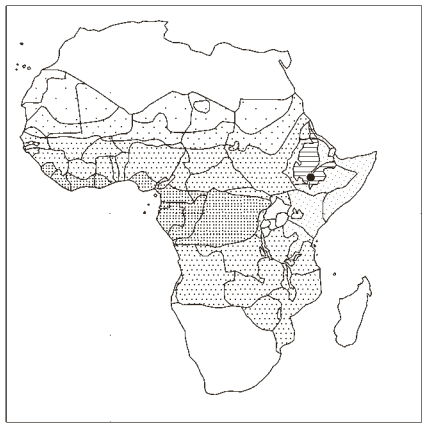

Eleocharis setifolia

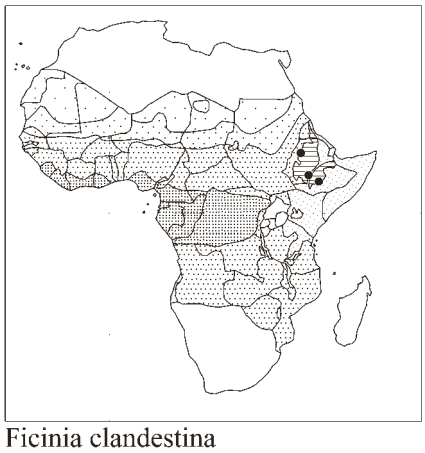

Eleocharis spongostyla

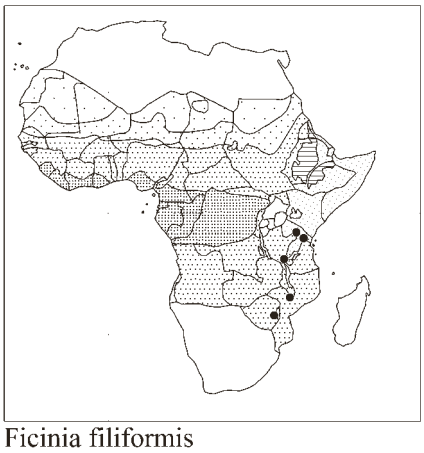

Eleocharis trilophus

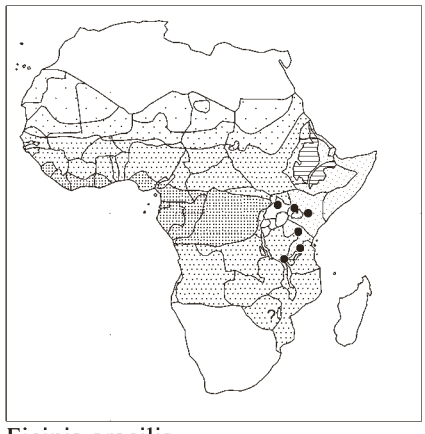

Eleocharis variegata


Eleocharis welwitschii


Ficinia borealis


Ficinia clandestina


Ficinia filiformis


Ficinia gracilis

FICINIA STOLONIFERA

syn.: *F. filiformis* Nees 1835, nom. illeg., non (Lam.) Schrad. 1832; *F. filiformis* fa. *contorta* Nees 1835; *T. contorta* (Nees) H. Pfeiff .; *Melancranis contorta* (Nees) Kuntze 1891; *Ficinia thyrsoidea* H. Pfeiff; *F. filiformis* sensu auctt. (misapplied).

Tussocky perennial herb with rhizome; culms crowded, 5−50 cm long, 0,3−0,6 mm ∅, angular; leaves from the basal 5 cm only; sheaths brown to almost blackish below, but culms with prominent grey translucent wide sheaths on the intravaginal new shoots; ligule a tubular delicate shining white (sometimes yellowish) membrane that is not always easily observed intact (fig. 30 D p. 82 in Gordon-Gray, 1995); inflorescence a head, 0,5−1 cm ∅, of 1−8 sessile spikelets that radiate and are easily counted; spikelets 4−7 × 2−3 mm.

Sparse, dry grassland in coarse gravel, often along ± disturbed roadsides; damper, more lush grassland (ecology in Natal fide Gordon-Gray, l.c.).

S. Africa, Lesotho.

F. trollii (Kük.) Muasya & D. A. Simpson; Fl. Trop. E. Afr., Cyper.: 120, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 139−140, 1983 (as *Isolepis trollii*).

bas.: *Scirpus trollii* Kük.

syn.: *Isolepis trollii* (Kük.) Lye

Tufted perennial herb with woody rhizome; culms 5−35 cm long, 0,4−0,5 mm ∅ (c. 1,3 mm across the sheath), terete; leaf sheaths reddish-brown, 4 cm long; blade to 15 cm long, 0,4−0,5 mm wide, *margins scabrid*; inflorescence a pseudo-lateral head of 2−5 spikelets, these terete, 2−5 mm long, 2 mm ∅; flowers lacking perianth segments; nutlet smooth, shiny.

Bracken stands in open parts of mist forest; grassland on broken quartzite rocks; 1600−2400 m alt.

Very near *F. filiformis* but *without gynophore*.

Known only from the type collected in 1934.

SYNONYMS:

Ficinia capillaris Nees ex C. B. Clarke 1894
= **Ficinia filiformis**
commutata (Nees) Kunth = **F. gracilis**
contexta (Nees) Nees = **Bulbostylis contexta**
contorta (Nees) H. Pfeiff. = **Ficinia stolonifera**
costata (Hochst. ex A. Rich.) H. Pfeiff. = **Isolepis costata**
dregeana H. Pfeiff. var. *abyssinica* H. Pfeiff.
= **Ficinia clandestina**
ecklonea sensu Fl. Eth. & Eritrea 6: 427, 1997
= **F. borealis**
filamentosa Nees 1835 = **F. filiformis**
filiformis Nees 1835, incl. fa. *contorta* Nees 1835
= **F. stolonifera**
filiformis sensu auctt. (misapplied) = **F. stolonifera**
lipocarphioides Kük. = **Alinula lipocarphioides**
ludwigii Boeckeler = **Ficinia filiformis**
rugulosa C. B. Clarke = **F. filiformis**
schlechteriana H. Pfeiff. = **?**
tenuifolia Kunth = **F. filiformis**
thyrsoidea H. Pfeiff. = **F. stolonifera**

FIMBRISTYLIS / *27*

Fimbristylis Vahl 1805, nom. cons., excl. *Abildgaardia* Vahl 1805.

Genus of c. 300 species accepted out of the c. 1063 names of taxa recorded (Desai & Raole, o.c.: 73). It is the 4th largest genus within Cyperaceae. Distribution worldwide but mostly in subtropical, tropical, and warm temperate regions; most of the species are concentrated in SE Asia, Malesia, NE Australia (J. & M. Kim, Korean J. Taxon. 45: 318, 2015).

"The few revisions of *Fimbristylis* available are already outdated or cover only a regional scale" (Nuernberg Ronchi & al. in Syst. Bot. 41: 166, 2016).

"Ohwi (1944), Kern (1974) and Hooker (1894) included the genus Abildgaardia Lye within the genus Fimbristylis Vahl. Molecular phylogenetic analysis of the family Cyperaceae depict Abildgaardia and Fimbristylis to be more closely related to each other than any other genera and suggested that few characters are available for proper construction of the phylogenetic tree" (Desai & Raole, l.c.) – "At present, molecular phylogenetic data support the division of *Abildgaardia*, *Bulbostylis* and *Fimbristylis*, but the relationships among these genera are still unclear" (Reutemann & al.(2012): 223).

"*Fimbristylis* species are generally characterized by the presence of leaf blades, leaf sheaths without long silk hairs at the apex, and nutlets without persistent style bases (J. & M. Kim, l.c.).

DESAI, R. J. & V. M. RAOLE (2013). Inflorescence architecture in species of Fimbristylis (Cyperaceae) from Gujarat, India. *Rheedea* 23: 73−85.

GHAMKHAR, K. & al. (2007). See above under **Bulbostylis**.

KIM, J. & M. KIM (2018). A taxonomic study of the genus Fimbristylis Vahl (Cyperaceae) in Korea. *Korean J. Pl. Taxon*. 48: 301−330.

REUTEMANN, A. G. & al. (2012). See above under **Bulbostylis**.

REUTEMANN, A. G. & al. (2015). Inflorescence development in Abildgaardieae (Cyperaceae, Cyperoideae). *Flora* 210: 3−12.

Fimbristylis alboviridis (C. B. Clarke ex Scott Elliot) C. B. Clarke 1893; Napper in Kew Bull. 25: 437−438, 1971; Lowe & Stanfield, Fl. Nigeria: Sedges: 64, 1974; Bull. Jard. Bot. Natl. Belg. 54: 78, 1984; Lisowski, Fl. Rép. Guinée 1: 401, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012; Marshall & Hawthorne, Checklist north. Nimba County, Liberia: 431, 2013. – Icon.: Berhaut, Fl. ill. Sénégal 9: 234, 1988 (details).

bas.: *Cyperus alboviridis* C. B Clarke ex Scott Elliot 1891.

syn.: *Fimbristylis diphyllla* (Retz.) Vahl var. *tuberculata* Cherm.; *F. pluristriata* (C. B. Clarke) Berhaut var. *tuberculata* (Cherm.) Berhaut, nom. illeg.; *F. podocarpa* Nees var. *tuberculata* (Cherm.) Berhaut, nom. illeg.

Annual tufted herb 3−5−30 cm tall; leaves similarly varying, 3−20 cm long, 0,5−1 mm wide, hairless or sparsely hairy; culms c. 0,5 mm ∅; inflorescence in small plants of 1 spikelet, in larger plants of 2−4 stalked spikelets from near the base of the terminal one, or with further branching, giving a second order umbel with c. 10 spikelets; inflorescence 1−1,5 cm long, 0,5−1 cm wide; spikelet 3−5 mm long, 1−3 mm wide; glumes pale green with a dark reddish patch in middle of each half, mucronate.

Shallow soil on rocks; damp flushes; swampy places; river banks; diagnostic species of *Cypero pulchelli – Bacopetum hamiltonianae* vegetation of seasonal ponds (Müller & Deil in Phytocoenologia 35: 357, 2005); inselbergs (Porembski & Brown in Candollea 50: 358, 1995).

From India through to Java – Philippines; Goa (Patil & Prasad in Ind. J. Forestry 32: 448, 2009). For India, See Kumar & al. in Nelumbo 59: 165−166 (fig.), 2017. Record from Andaman

& Nicobar Isl. refers to *F. dichotoma* (Prasad in Nelumbo 59: 157, 2017).

Frequently confused with *F. dichotoma* but more rigid and slender (Napper, Kew Bull. 25: 438, 1971).

F. aphylla Steud., incl. var. *gracilis* Tang & F. T. Wang; Lowe & Stanfield, Fl. Nigeria: Sedges: 65, 1974; Bull. Jard. Bot. Natl. Belg. 54: 83, 1984; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 625, 1985; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 263, 1955; Gordon-Gray, Cyper. Natal: 88, 1995 (nutlet); Prasad & Singh, Sedges Karnataka (India): 159, 2002; Cook, Aquat. & wetland pl. south. Afr.: 103, 2004; Fl. China 23, Ill.: 267, 2012.

syn.: *F. quadrangularis* A. Dietr. ex Steud. var. *crassa* C. B. Clarke; *F. testui* Cherm.; *F. quinquangularis* (Vahl) Kunth var. *testui* (Cherm.) Robyns & Tournay; *F. vanderystii* De Wild.; *F. globulosa* (Retz) Kunth var. *aphylla* (Steud.) Miq.

Perennial tufted herb with short rhizome; culms acutely quadrangular, almost winged, to 75 cm tall, 1,5−3 mm ∅; leaves reduced to sheaths, few at base of culms, 4−10 cm long, blade scarcely reaching 1 cm long; leaves on sterile shoots well developed, flat, with blades to 30 cm long, 2−3 mm wide; sheaths loose, tubular; inflorescence terminal, compound, paniculate, widely spreading, umbellate in plan with inconspicuous involucral bracts; primary rays up to 13, angled, to 5 cm long; spikelets solitary, brown, ovoid, 2−3,5 × 1,5−2 mm, fairly pointed, lengthening with age to 10 mm incl. bare rhachilla.

Swamps; damp savanna; near rivers; rice fields; c. 410−1200 m alt.

S. Africa; S & SE Asia: from India – Bangladesh, E-wards to Vietnam – Java – Philippines; Andaman & Nicobar Isl.

Distinguished from *F. quinquangularis* because the leaves are reduced to a few leaf sheaths at base.

F. barteri Boeckeler; Lisowski, Fl. Rép. Guinée 1: 401, 2009 (as *F. chevalieri*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012. – Icon.: Lowe & Stanfield, Flora Nigeria: Sedges: 49, 2012; Berhaut, Fl. ill. Sénégal 9: 235, 236 (*F. chevalieri*), 1988.

syn.: *Iria barteri* (Boeckeler) Kuntze; *Fimbristylis chevalieri* Kük.

Perennial herb 21−80 cm tall with rhizome; culms swelling at base and covered with persistent sheaths becoming fibrous; culms erect, solitary or tufted, 0,6−1,5 mm ∅; leaf sheaths light brown; blade 5−25 cm long, 1−2,5 mm wide; inflorescence branched, 4,5−13 cm long, 2−6 cm wide, an umbel usually of the second order with relatively long (2−3 cm) branches; spikelets 20−40, ovoid-ellipsoidal, brown, 5−7 mm long, 2−2,5 mm ∅.

Grassland; humid sand in savanna; temporarily flooded sands; close to dams.

Differs from *F. scabrida* in the much coarser habit, the widely spreading inflorescence with ovate-elliptic spikelets on long pedicels.

F. bisumbellata (Forssk.) Bubani, incl. var. *elata* Täckh. (non *F. biumbellulata* Boeckeler = *F. cymosa* subsp. *cymosa*); Clarke & Mannheimer, Cyper. Namibia: 96, 86 (map), 1999; Fl. Pakistan 206, Cyper.: 75−76, 2001; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 227, 2002; Fl. Trop. E. Afr., Cyper.: 58, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 120, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012 (map by Schmidt & al. in Phytotaxa 304: 103, 2017); Darbyshire & al.,

Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 77, 86, 1983; Berhaut, Fl. ill. Sénégal 9: 236, 1988 (details); Thulin, Fl. Somalia 4: 107, 1995; Gordon-Gray, Cyper. Natal: 88, 1995 (nutlet); Fl. Eth. & Eritrea 6: 411−412, 1997; Prasad & Singh, Sedges Karnataka (India): 163, 2002; Boulos, Fl. Egypt 4: 368, 2005; Fl. Gabon 44, Cyper.: 131, 2012; Fl. China 23, Ill.: 282, 2012.

bas.: *Scirpus bisumbellatus* Forssk.

syn.: *Iria bisumbellata* (Forssk.) Kuntze; *Fimbristylis dichotoma* (L.) Vahl subsp. *bisumbellata* (Forssk.) Luceño; *F. dichotoma* var. *villosa* Vahl; *F. dichotoma* sensu auctt. (cf. Fl. Trop. E. Afr., l.c.); See also World Checklist of Selected Plant Families, Cyper., Roy. Bot. Gard., Kew.

Tufted leafy annual herb 5−35 cm tall; culms 0,5−1 mm ∅, ± triangular; leaf sheaths straw-coloured to brown; blade flat mostly much shorter than culms 1−2 mm wide; inflorescence open, 2−6 cm wide, with 10−40 spikelets, main branches 1−3 cm long; spikelets angular-elongate-ovoid, 3−8 × 1−1,5 mm; glumes boat-shaped, sharply keeled.

Seasonally submerged sandbanks in rivers; seasonal pools in woodland; mud flats; rocky and sandy river-banks; exposed bare alluvial loamy-sandy soil near streamlets and pans; dense *Acacia*, *Commiphora* bush with *Adansonia*; usually a sign of fertile soil; cultivated fields; 0−1500 m alt.

Not yet (2012) found in Gabon but presence possible ("there is an annual form of *F. dichotoma* much smaller than the perennial form"). – Canary Isl.; Mediterranean Europe from Portugal to Greece (Tan & al. in Phytologia Balcan. 13: 81−82, 2007); N. Africa: Algeria, Morocco, Egypt; Namibia, S. Africa; Madagascar; SW Asia from Yemen, Arabia, Turkey, Palestine, Lebanon, Syria, Caucasus, through to Iran, Turkmenistan, Afghanistan, Pakistan, India, Sri Lanka – Malaysia – Indonesia – Japan – tropical Australia – Philippines, New Zealand; essentially tropical, frequently sympatric with *F. dichotoma*. Previous record of *F. bisumbellata* from Andaman & Nicobar Isl. refers to *F. dichotoma* (Prasad in Nelumbo 59: 158, 2017).

Hybridisation not uncommon with *F. dichotoma* (Natal). – "When dealing with older herbarium material anything labelled *F. diphylla* is what is now called *F. dichotoma* in recent literature and anything labelled *F. dichotoma* might well be *F. bisumbellata*" (Fl. Trop. E. Afr., l.c.).

F. bivalvis (Lam.) Lye – Figuring in floras and flora lists as *F. longiculmis* Steud. – Bull. Jard. Bot. Natl. Belg. 54: 78, 1984 (as *F. longiculmis*); Gordon-Gray, Cyper. Natal: 93, 1995 (idem); Fl. Trop. E. Afr., Cyper.: 54, 2010 (idem). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 83, 1983 (idem); Fl. Eth. & Eritrea 6: 409, 1997 (idem).

bas.: *Scirpus bivalvis* Lam.

syn.: *Isolepis bivalvis* (Lam.) Steud.; *Fimbristylis longiculmis* Steud.; *F. sansibariensis* Boeckeler

Densely tufted rhizomatous perennial herb 0,6−1,8 m tall; stems crowded, conspicuously flattened, dotted; leaf sheaths greyish or pale brown; blades very short or absent; inflorescence a panicle of few to many mostly stalked pale to dark brown spikelets 0,7−2 cm long; glumes many, reddish brown.

Waterlogged peaty areas and swamps by streams; roadsides; bushland; wet grassland in saline or alkaline habitats, particularly near sea-shore; 1−1700 m alt.

S. Africa; Madagascar.

"Unfortunately this name [*F. bivalvis*] has to replace the more well known *F. longiculmis* Steud. (1855)" (Lye in Lidia 3/5: 144,

1995). However, the name *F. longiculmis* is maintained in Fl. Eth. & Eritrea (l.c.) and Fl. Trop. E Afr. (l.c.).

Gordon-Gray (l.c.) compares *F. longiculmis* with *F. ferruginea*, and suggests that *F. longiculmis* may have originated by hybridization and backcrossing between *F. ferruginea* and another unidentified parent (*F. aphylla* perhaps ?).

(**F. cioniana** Pi. Savi) – See above under **Bulbostylis cioniana** (Pi. Savi) Lye

F. complanata (Retz.) Link – included here: (*F. consanguinea* Kunth, S. Africa, Madagascar, India, Sri Lanks, C. & S. China; and *F. subaphylla* Boeckeler, S. Sudan, Kenya, W Tanzania). – Renier, Fl. Kwango 1: 72, 1948; Thulin, Fl. Somalia 4: 108, 1995; Bull. Jard. Bot. Natl. Belg. 54: 82, 1984; Clarke & Mannheimer, Cyper. Namibia: 96, 86 (map), 1999; Simpson & Inglis in Kew Bull. 56: 316, 2001; Fl. Trop. E. Afr., Cyper.: 50−51, 2010 (incl. *F. consanguinea*); Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015 (incl. *F. subaphylla*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 78−80, 1983 (idem); Troupin, Fl. Rwanda 4: 453, 1988; Gordon-Gray, & Browning in Flow. Pl. Africa 53: pl. 2091, p. 54−58, 1994 (incl. *F. consanguinea*, *F. subaphylla*; with map p. 57); Gordon-Gray, Cyper. Natal: 88, 1995 (nutlet); Fl. Eth. & Eritrea 6: 408, 1997; Prasad & Singh, Sedges Karnataka (India): 168, 170 (*F. consanguinea*), 2002; Fl. Gabon 44, Cyper.: 135, 2012; Fl. China, Ill. 23: 268, 2012.

bas.: *Scirpus complanatus* Retz.

syn.: *Cyperus complanatus* (Retz.) Willd. 1797, nom. illeg., non Forssk. 1775 (= *C. conglomeratus* subsp. *conglomeratus*), nec C. Presl 1828; *Isolepis complanata* (Retz.) Roem. & Schult.; *Trichelostylis complanata* (Retz.) Nees; *Fimbristylis autumnalis* var. *complanata* (Retz.) Kük. –Cf. also below under *F.elongata* Pires de Lima

Tufted rhizomatous perennial (sometimes annual) herb 0,5−1,2 m tall; culms densely packed, 1,5−3 mm ∅, flattened (and twisted) at top; leaf sheaths closed, with *hairy margin near the ligule*; blades 1−35 cm long, flat, margins with dense spine-like hairs; inflorescence compound, 1,5−6 cm long, 1−4,5 cm wide, of a central spikelet and many stalked spikelets or groups of spikelets (brown, 0,5−1,2 cm long, c. 2 mm ∅); style branches 3, nutlet trigonous.

Permanently inundated swamps; near water holes; along streams; (wet) grassland with mixed herbs; *Juniperus*, *Nuxia*, *Agauria* mixed forest; often in rocky places; ditches; swampy lake margins; floating meadows and swamps; sand banks; hot wells; dembos; rice fields, cultivated ground; 0−2900 m alt.

Plants very variable in robustness, degree of development of leaf blades. – "Constant characters that permit reliable identification: ligule a dense fringe of short white hairs at mouth of sheaths; spikelet rachilla winged and ragged except at extreme base".

Namibia, S. Africa, Botswana, Swaziland; Seychelles, Madagascar; SW Asia: Yemen (Wood, Handbook Yemen flora: 330, 1997), Asia from India, Sri Lanka, Bhutan, Pakistan, E-wards through Malaysia, Indonesia, Japan – Philippines (very common in SE Asia); N Australia; Pacific Islands; C. America, West Indies, S. America. – In most tropical and subtropical regions – pantropical.

Subdivided into 2 subspp.: – subsp. **complanata** [syn.: *F. bequaertii* De Wild.; *F. consanguinea* Kunth; *Iria consanguinea* (Kunth) Kuntze; *Fimbristylis horsfieldii* C. B. Clarke; *F. subaphylla* Boeckeler; *F. complanata* var. *subaphylla* (Boeckeler) Lye]; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; – subsp. **keniaeensis** (Kük.) Lye [bas.: *F. keniaeensis* Kük.; syn.: *F. complanata* var. *keniaeensis* (Kük.) Lye] in Kenya (K 3−6). – Distinguishing characters: subsp. **complanata** with most spikelets on individual stalks, sessile spikelets not clustered, culms 0,15−0,3 cm ∅; subsp. **keniaeensis**: spikelets more crowded with 2 or more on a stalk and 2 or more sessile spikelets together, culms < 0,15 cm ∅. Both taxa occur together.

"Some authors maintain *F. consanguinea* as distinct (an entity of high altitudes, 1600−2300 m) from *F. complanata* (0−1300 m alt.)" (Gordon-Gray, o.c.: 91). "A world survey of both taxa might be revealing".

F. cymosa R. Br.; Bull. Jard. Bot. Natl. Belg. 54: 85, 1984; Fl. Pakistan 206, Cyper.: 66, 2001; Prasad & Singh, Sedges Karnataka (India): 171−172, 2002; Akoègninou & al., Fl. analyt. Bénin: 101−102, 2006; Fl. Trop. E. Afr., Cyper.: 51−52, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Velayos & al., Fl. Guinea Ecuat. 11: 110, 2014. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 80, 1983; Berhaut, Fl. ill. Sénégal 9: 237, 1988; Thulin, Fl. Somalia 4: 107, 1995 (as *F. cymosa* subsp. *spathacea*); Gordon-Gray, Cyper. Natal: 92, 95 (as *F. obtusifolia*), 1995; Fl. Gabon 44, Cyper.: 135, 2012: J. Bot. Res. Inst. Texas 6: 301, 2012 (subsp. *spathacea*); Fl. China, Ill. 23: 269−270, 2012 (incl. subsp. *spathacea*); Fl. Mascareignes 202, Cyper.: 22, colour plate p. 80−81, 2018.

syn.: *Scirpus cymosus* (R. Br.) Poir. 1816, nom. illeg.; *Iria cymosa* (R. Br.) Kuntze; *Scirpus glomeratus* Retz. 1786, nom. illeg., non Roxb. 1820, nec L. 1753; *Isolepis glomerata* Schrad.; *Scirpus cymosus* Lam. 1791; *S. obtusifolius* Lam.; *Isolepis obtusifolia* (Lam.) Roem. & Schult.; *Fimbristylis obtusifolia* (Lam.) Kunth 1837, nom. illeg.; *Trichelostylis obtusifolia* (Lam.) Nees; *Fimbristylis cymosa* R. Br. subsp. *spathacea* (Roth) T. Koyama; *F. spathacea* Roth (here considered as synonyms). – *F. cymosa* subsp. *umbellatocapitata* (Hillebr.) T. Koyama is a plant from S China to the Pacific islands. – "This species [*F. obtusifolia*] is part of the world-wide *F. cymosa* R. Br. complex of strand and atoll plants whose inter-relationships are not entirely clear" (S. S. Hooper in Fl. W. Trop. Afr., ed. 2, 3/2: 324, 1972). – The complex *F. cymosa* s. str., *F. obtusifolia*, *F. spathacea* need further studies.

Perennial rhizomatous herb forming dense tufts 10−20 cm tall and to 90 cm wide; leaves many, flat, 2−20 cm long, 0,7−2 mm wide, suddenly rounded at apex; inflorescence compound with many small pedunculate clusters of sessile spikelets pale brown or yellowish brown with often wide whitish margin, 1,5 mm long; style 3-branched in Africa, but sometimes 2-branched elsewhere.

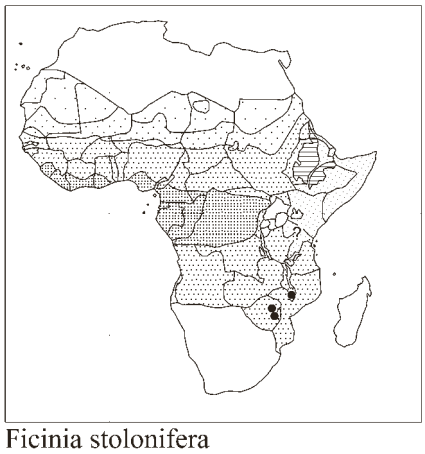
Sandy foreshores, edges of mangrove swamps; coral rock; salt marshes; grassy places on sandy soils; 0 – c. 300 m alt.

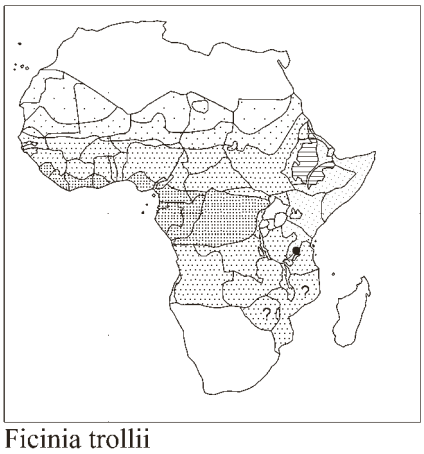
Generally coastal with few exceptions inland (e.g. Niger); some other *Cyperaceae* have similar distribution, e.g., *Eleocharis geniculata*, *Fimbristylis ferruginea*, *Pycreus polystachyos*, *Rhynchospora holoschoenoides*, *Scleria lacustris*.

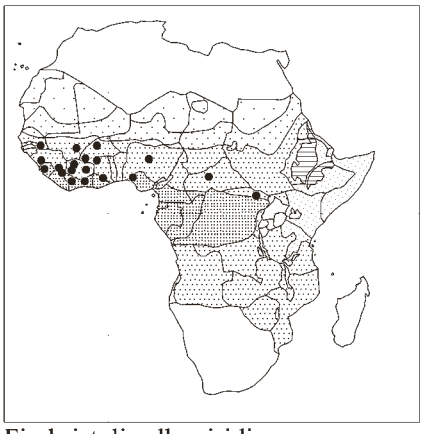
Very variable.

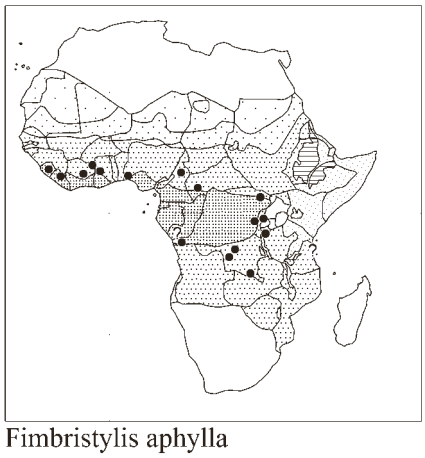
Pantropical. – Príncipe ?; S. Africa; Madagascar, Réunion, Seychelles, Mauritius, Aldabra; Asia from Arabia, Yemen (Wood, Handbook Yemen flora: 330, 1997), Iran, India, Sri Lanka, Pakistan E-wards to China, Malesia, Japan; Australia; Pacific Islands; S USA (Texas, Rosen & al. in J. Bot. Res. Inst. Texas 6: 299−301, 2012, with illustration p. 301, subsp. *spathacea*); C. & S. America, West Indies (in the New World subsp. *spathacea* fide Rosen & al.).

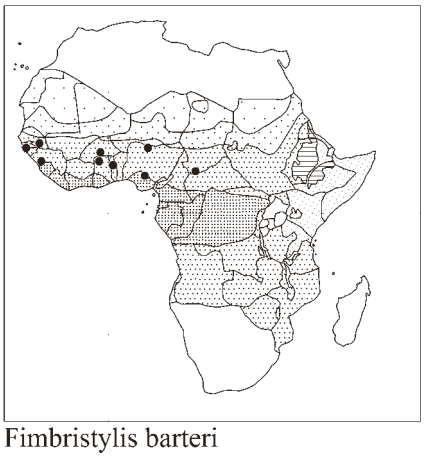
The differences between subsp. **cymosa** and subsp. **spathaceae** are: – subsp. *cymosa*: nutlet 3-sided, stigmas 3, inflorescence

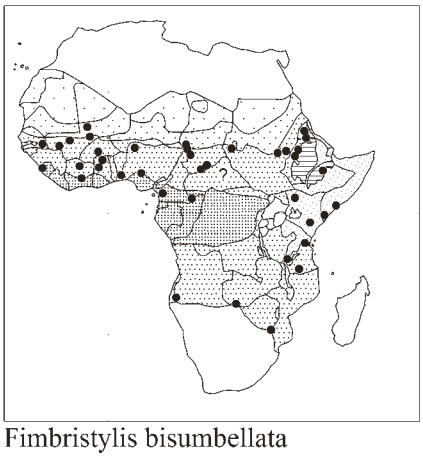

Ficinia stolonifera

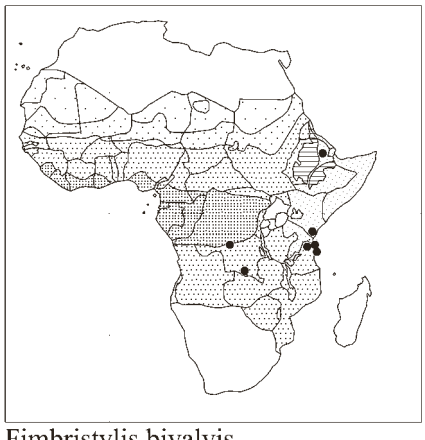

Ficinia trollii

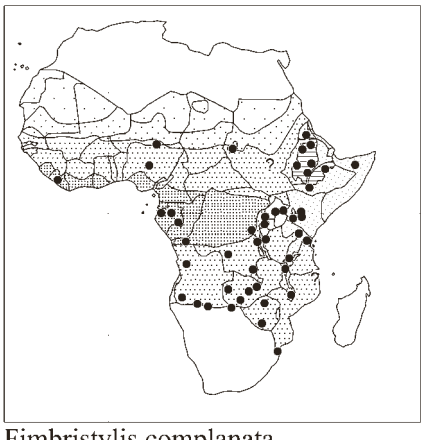

Fimbristylis alboviridis

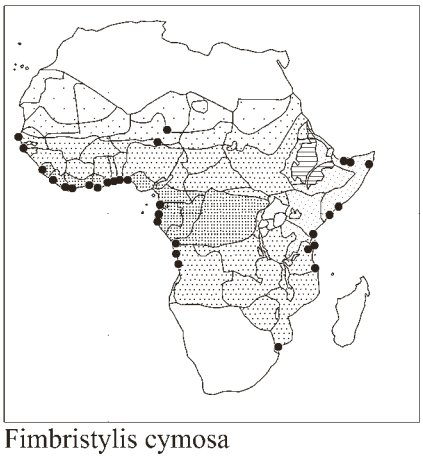

Fimbristylis aphylla

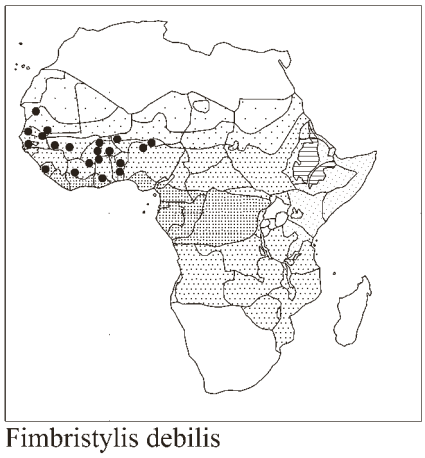

Fimbristylis barteri

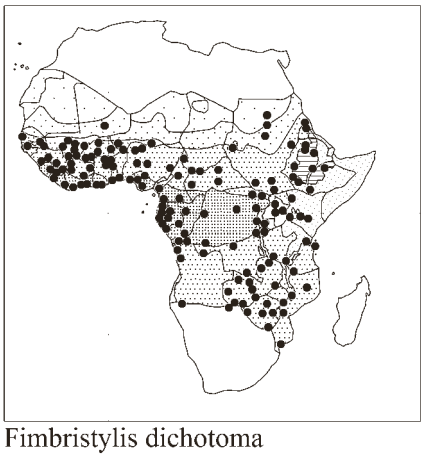

Fimbristylis bisumbellata

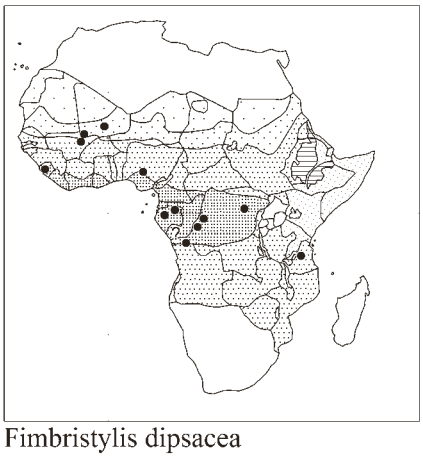

Fimbristylis bivalvis
(F. longiculmis)


Fimbristylis complanata
(incl. F. subaphylla)


Fimbristylis cymosa


Fimbristylis debilis


Fimbristylis dichotoma


Fimbristylis dipsacea

(anthelae) head-like with a few short rays, spikelets many, congested; – subsp. *spathacea*: nutlet mostly biconvex, stigmas 2(−3), anthelae open with several elongated rays, spikelets solitary or a few fascicled.

F. debilis Steud.; Napper in Kew Bull. 25: 438−439, 1971; Akoègninou & al., Fl. analyt. Bénin: 101, 2006; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017). – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 72, 1974.

Annual (or perennial) herb 5−45 cm tall, if perennial with a slender ascending rhizome, culm bases sparingly coated with fibrous leaf sheath remains: culms hair-like, to 40 cm long; leaves basal, filiform; inflorescence usually spreading, of 2−6 spikelets, both sessile and pedicellate, rarely reduced to a solitary one on depauperate plants; spikelets obovoid, 2−5 × c. 2 mm at base; glumes pale green, dark brown on sides.

Savanna and scrub, especially in and near pools on laterite outcrops; humid or inundated hollows; humid sands; sandy soil with a muddy-clayey film above.

Very variable, dependent on the water conditions in the habitat. Small plants (5−8 cm high), single-stemmed, have a small inflorescence c. 1,5 cm long, 1 cm wide, made up of 3 spikelets each 2−5 × 1,5−2 mm; robust individuals can reach to 40−45 cm in height with inflorescences (4 × 2,5 cm) made up of many spikelets to 12 mm long.

F. dichotoma (L.) Vahl; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 122, 1899 (as *F. diphylla*); Napper in Kew Bull. 25: 436−437, 1971; Bull. Jard. Bot. Natl. Belg. 54: 77−78, 1984 (2 fig. nutlet p. 71); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 625−626, 1985; Cable & Cheek, Pl. Mt Cameroon: 156, 1998; Clarke & Mannheimer, Cyper. Namibia: 96, 87 (map), 1999; Simpson & Inglis in Kew Bull. 56: 317, 2001; Fl. Pakistan 206, Cyper.: 74−75, 2001; Prasad & Singh, Sedges Karnataka (India): 172−174, 2002; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Akoègninou & al., Fl. analyt. Bénin: 101, 2006; Naczi & Ford, Sedges: uses…: 5, 8, 15, 47−48, 93, 2008; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 49, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017); Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 110, 2014; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 2, 1974 (subsp. *dichotoma*); Haines & Lye, Sedges & rushes E. Afr.: 85, 1983; Troupin, Fl. Rwanda 4: 453, 1988; Berhaut, Fl. ill. Sénégal 9: 238−239, 1988; Gordon-Gray, Cyper. Natal: 88, 1995 (nutlet); Fl. Eth. & Eritrea 6: 411−412, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 54, 2002; Malaisse, Guide florist. Parc Natl. Cantanhez: 744, photo. 744, 2010; Fl. Trop. E. Afr., Cyper.: 59, 2010; Fl. Gabon 44, Cyper.: 136−137, 2012; Fl. China, Ill. 23: 275, 2012; Browning & Goetghebeur, Sedge genera Africa & Madag.: 49, 2017; Yarrayya & Ratna Kumar in J. Japan. Bot. 93: 200, 2018 (nutlet); Fl. Mascareignes 202, Cyper.: 25, 2018.

bas.: *Scirpus dichotomus* L.

syn.: *Isolepis dichotoma* (L.) Kuntze; *Eleocharis dichotoma* (L.) H. Karst.

Annual tufted herb or perennial with rhizome, 7−90 cm tall; culms 1−2 mm ∅, compressed, glabrous or with scattered hairs above, bases covered by persistent hardened leaf-bases; leaves many, 5−50 cm long, 0,8−3,5 mm wide, with short spine-like hairs on margins; leaf sheath wings very thin, brown or densely orange-brown speckled and ± hairy; inflorescence of many spikelets arranged in 1−3 orders of branches; spikelets ovoid to cylindric, 0,4−1,2 cm × 2−3 mm; glumes reddish brown.

Loudetia arundinacea grassland with scattered trees of *Terminalia laxiflora*, *T. brownii*, *Pterocarpus lucens*, *Combretum collinum*, *Vitex doniana*, in rock crevices; small grass swamp in *Albizia zygia*, *Combretum* woodland; pioneering on damp to wet sites; very common; temporary swamps on laterite pans; savanna; sandy swamp; meadow on gravel; lake and river banks; bare black soil, cultivated areas (rice fields, etc.); and other seasonally wet areas; pool edges with fresh or slightly brackish water; ruderal; places after cultivation; damp palm groves; riverine forest; inselbergs (Porembski & Brown in Candollea 50: 359, 1995; Parmentier & Müller in Phytocoenologia 36: 594, 2006, and *Fimbristylis dichotoma – Loudetia* cf. *furtiva* community, o.c.: 578−579); stony places in iron ore quarry (Mesterházy in Lidia 7/5: 106, 2012); usually scattered among other sedges and grasses and seldom dominating vegetation (Gordon-Gray, 1995); 0−2700 m alt. – Probably one of the commonest species of *Fimbristylis*, and one of the most frequent and widespread sedges (in, e.g., Nigeria; Lowe & Stanfield, o.c.: 66).

Highly polymorphic species with a lot of variations in stems, leaves, inflorescence, flower and nutlets. Also very variable in size: tufted plants 7−90 cm high with basal leaf sheaths becoming fibrous; leaves 5−50 cm long, 1−3,5 mm wide; inflorescence much-branched, 2−10 cm long, 1−9 cm wide.

Tropical – subtropical – warm temperate regions of the world. Morocco; Egypt; Bioko/Fernando Poo, Annobón (Phytotaxa 171: 19, 2014); Namibia, S. Africa, Botswana, Swaziland; Comoros, Mauritius, Madagascar, Réunion, Seychelles; S Europe, e.g. Spain (Verloove & al., Fl. Mediterr. 24: 202, 2014); SW Asia from Arabia, Yemen (Wood, Handbook Yemen flora: 330, 1997), Iran, Central Asia, India, Sri Lanka, Pakistan, China, Indonesia, Japan, Philippines; N Australia; Pacific islands; S USA, C. & S. America. –Previous record of *F. alboviridis* from Andaman & Nicobar isl. refers to *F. dichotoma* (Prasad in Nelumbo 59: 157, 2017).

"The synonymy of this species is very complicated. C. B. Clarke claimed that there were 140 names for *F. diphylla*. He and Kern list a good deal of extra synonymy" (Fl. Trop. E. Afr., Cyper.: 58, 2010). Napper (Kew Bull. 25: 436−437, 1971, and Fl. W. Trop. Afr., ed. 2, 3/2: 320−321, 1972) recognised 3 vars., viz. var. *dichotoma,* var. *laxa* (Vahl) Napper, and var. *pluristriata* (C. B. Clarke) Napper. The World Checklist of Selected Plant Families, Cyperaceae, 2017, recognizes 2 subspp.: – subsp. **dichotoma** [syn.: *Scirpus annuus* All.; *Fimbristylis annua* (All.) Roem. & Schult.; *F. dichotoma* fa. *annua* (All.) Ohwi; *Scirpus diphyllus* Retz.; *Fimbristylis diphylla* (Retz.) Vahl; *F. dichotoma* fa. *diphylla* (Retz.) Ohwi; *F. laxa* Vahl; *F. dichotoma* var. *laxa* (Vahl) Napper; *Scirpus laxus* (Vahl) Poir.; *Fimbristylis dregeana* Kunth; *F. diphylla* var. *laxa* (Vahl) E. G. Camus; See World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew; – subsp. **podocarpa** (Nees) T. Koyama [bas.: *Fimbristylis podocarpa* Nees; syn.: *F. annua* var. *podocarpa* (Nees) Kük.; *F. tomentosa* Vahl; *F. diphylla* var. *podocarpa* (Nees) Kük., and var. *pluristriata* C. B. Clarke, and var. *tomentosa* (Vahl) Benth.; *F. pluristriata* (C. B. Clarke) Berhaut, nom. illeg.; *F. dichotoma* var. *pluristriata* C. B Clarke) Napper; etc.]. – subsp. **dichotoma** is a plant 5−50 cm tall, with spikelets 4,5−8,5 mm long, and nutlet obovoid 0,6−1,2 mm long with 5−11 vertical rows of transversely oblong epidermal cells. Subsp. **podocarpa** is normally a taller plant, 5−100 cm tall, with spikelets 8−14 mm long, and nutlet obovoid-globose c. 1,3 mm long with 15−24 vertical rows of transversely oblong-rectangular epidermal cells (Fl. China 23: 210, 2010).

F. dichotoma is one of the most important *Cyperaceae* weeds in terms of their adverse effect on agriculture, and is ranked 40th among the world's worst weeds (Naczi & Ford, o.c.; Verloove & al. in Fl. Mediterr. 24: 202, 2014). But it is also used as green manure and plowed into the soil.

"Easily identified by dark brown glabrous glumes, smoothly (not angled) spikelets, biconvex achenes with tuberculate surface". – Rather similar to *F. alboviridis* but generally larger.

Hybridisation with *F. bisumbellata* not uncommon (See above under that species). "Anything [herbarium material] labelled *F. dichotoma* might well be *F. bisumbellata*". But "when dealing with older herbarium material anything labelled *F. diphylla* is what is now called *F. dichotoma*". *F. dichotoma* auct., non (L.) Vahl, e.g. C. B. Clarke 1902 = *F. bisumbellata*.

F. dipsacea (Rottb.) C. B. Clarke var. **dipsacea**; Renier, Fl. Kwango 1: 72, 1948; Lowe & Stanfield, Fl. Nigeria: Sedges: 67, 1974; Bull. Jard. Bot. Natl. Belg. 54: 85, 1984; Fl. Trop. E. Afr., Cyper.: 63−64, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 112, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 90−91, 1983; Prasad & Singh, Sedges Karnataka (India): 176, 2002; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 56, 2002; Fl. Gabon 44, Cyper.: 136, 2012.

bas.: *Scirpus dipsaceus* Rottb.

syn.: *Echinolytrum dipsaceum* (Rottb.) Desf.; *Isolepis dipsacea* (Rottb.) Roem. & Schult.; *Scirpus minimus* Roxb.; *Isolepis elachista* Schult.

Annual mostly ephemeral herb 3−20 cm tall with tufted angular culms 0,2−0,4 mm ∅; lower leaves without or with very reduced blades, upper 2−10 cm long, 0,2−0,3 mm wide; inflorescence with one sessile and 2−10 stalked spikelets and occasionally additional secondary stalked spikelets; peduncles 1−15 mm long; spikelets green turning yellowish brown, oblong to ovoid, 3−6 × 2−3 mm, densely many-flowered, squarrose; glume apices with a long curved awn.

Exposed mud flats becoming submerged in wet season; silty or muddy river banks, dry river beds; sandy places; swamps; laterite outcrops; sandy and clayey places; 20−400 m alt.

S & E Asia, India, Sri Lanka, E-wards to Korea, China, Japan, Malesia, New Guinea, N Australia; S. America, S Venezuela to Brazil. – Plant of scattered occurrence (first found in Nigeria in 1973).

Var. **verrucifera** (Maxim.) T. Koyama, with glume apices with a short straight awn (icon.: Fl. China, Ill. 23: 260, 2012) in Korea, Japan, Far E Russia.

Easily recognised by its bristly spikelets and small cylindric nutlet often beset with stalked warts.

(**F. elongata** Pires de Lima, Bol. Soc. Brot., Sér. 2, 2: 133, 1923, nom. illeg.), non R. Br. 1810 (= *F. dichotoma* subsp. *dichotoma*), nec Sieber ex C. Presl 1828 (= *F. pilosa*).

Said to be near *F. subaphylla* Boeckeler [included in ***F. complanata*** (Retz.) Link by Gordon-Gray & Browning, in Flow. Pl. Africa 53: pl. 2091, p. 54−58, 1994, and by us, cf. above under that species], from which it differs by its pubescence, inflorescence with few rays and transversely rugose nutlet. – A plant with culms to 55 cm tall, angular-striate; leaves with short blades (c. 1 cm long); sheaths with long hairs at mouth; inflorescence of 3−5 rays, subtended by 4 setaceous bracts; spikelets 10 × 3 mm, c. 15-flowered; nutlet trigonous, obovate, surface transversely rugose.

In uncultivated places.

Known from the type collected at Palma (10°48'S × 40°29'E), N Mozambique, 18 March 1917 (Pires de Lima 145).

Two varieties have been described: – var. **subaphylla** (See above); – var. l**ongefoliata** Pires de Lima, differing from the typical variety by its culms, that are hispidulous on their whole length, its bracts and much longer leaves. – In uncultivated places at Palma 24 August 1916 (Pires de Lima 32).

Not mapped separately by us.

F. engleriana Buscal. & Muschl.

Said to be near *F. schweinfurthiana* Boeckeler from which it differs by its very acute leaves and much branched inflorescence.

Herb 20−35 cm tall with a much developed root system; culms filiform, nearly setaceous, erect or ± strongly curved; leaves very thin, forming a dense rosette above the ground, setaceous, 3−4,5 cm long, 0,5−0,75 mm wide, long-acuminate; sheaths glabrous; inflorescence compound, much-branched or rarely simple, with 5−6 rays, 0,75−1 cm long; spikelets ovate, c. 3−5 × 2−3 mm, glumes densely imbricate.

Swampy places along lake (Bangweolo, Zambia !).

This species is not cited by Phiri, A checklist of Zambian vascular plants, 2005, but *F. schweinfurthiana* figures there, however the latter species is known only from W Africa, Guinea to Sudan and its presence in Zambia is doubtful. *F. engleriana* is possibly a good species near *F. schweinfurthiana*.

(**F. falcifolia** Boeckeler); Clarke, Fl. Trop. Afr. 8: 425−426, 1902; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015.

syn.: *Iria falcifolia* (Boeckeler) Kuntze

Pale green, glabrous herb; roots fibrous, very slender; culms several, tufted, setaceous, 10−15 cm tall, obsoletely 5-angular, slightly compressed, furrowed, smooth; leaves few, 5−7,5 cm long, falcate (dry and *flexuose*), somewhat rigid, linear, 0,11 cm wide, narrowed towards the top, acute, flattish, minutely punctate, margins slenderly serrulate; sheaths short, margined by a hyaline membrane, obliquely truncate at mouth; umbel "half-compound", 5−7-rayed; bracts 3−4, lower narrow-linear, scarcely ½ shorter than the umbel; rays spreading, capillary, angular, scabrous on the angles, the longer c. 25 cm, with 2−3 branches; spikelets oblong-lanceolate, acute, "terete subangular", 10−18-flowered, 0,55−0,66 cm long; glumes in several ranks, rigid, rather close together, adpressed, broad-ovate, boat-shaped, obtuse or very shortly mucronate, keel green, 1-nerved, sides smooth, rusty straw-coloured, margins white, hyaline; nut small, by more than 1/2 shorter than glume, obovate; trigonous, the angles marked by a prominent line, with a small boss, cancellate, pale straw-coloured; style but little exserted, shortly 3-fid.

E Sudan: Gallabat, Matamma. Schweinfurth s. n.

The cover of this species in the Berlin Herbarium was found empty so that the plant has probably been removed to some known species (Fl. Trop. Afr. 8: 426, 1902); ? specimen lost (not in Andrews, The flow. pl. Sudan 3, 1956).

Taxonomic status uncertain. Known only from the type specimen not located.

Not mapped by us.

F. ferruginea (L.) Vahl; Mitt. Bot. Staatssamml. München 12: 683, 1976; Bull. Jard. Bot. Natl. Belg. 54: 80, 1984; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 626, 1985; Thulin, Fl. Somalia 4: 108, 1995; Clarke & Mannheimer, Cyper. Namibia: 96, 87 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 181−182, 2002; Cafferty & Jarvis in Taxon 53: 180, 2004 (typification);

Lisowski, Fl. Rép. Guinée 1: 401, 2009; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 120−121, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017); Velayos & al., Fl. Guinea Ecuat. 11: 111, 2014; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 322, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 68, 1974; Haines & Lye, Sedges & rushes E. Afr.: 83, 1983; Berhaut, Fl. ill. Sénégal 9: 240, 1988; Gordon-Gray, Cyper. Natal: 92, 1995 (nutlet); Fl. Eth. & Eritrea 6: 409, 1997 (subsp. *sieberiana*); Boulos, Fl. Egypt 4: 368, 2005 (as *F. sieberiana*); Akoègninou & al., Fl. analyt. Bénin: 101, 2006; Fl. Trop. E. Afr., Cyper.: 56, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 745, 2010; Fl. Gabon 44, Cyper.: 139, 2012; Fl. Mascareignes 202, Cyper.: 25, 2018.

bas.: *Scirpus ferrugineus* L.

syn.: *Isolepis ferruginea* (L.) Schltdl.; *Fimbristylis spadicea* (L.) Vahl var. *ferruginea* (L.) Alph. Wood; *Iria ferruginea* (L.) Kuntze

Tufted (short-lived) perennial herb 0,24−1,1 m tall with short rhizome, forming clumps 60 cm wide; culms compressed, 1−2 mm ∅; leaf sheaths greyish pale brown or brown; blades 9−30 cm long, 1−2 mm wide; inflorescence open or less so and sometimes subcapitate, 2−4 cm long, 2−2,5 cm wide; spikelets few to many, shortly stalked to sessile or subsessile, brown or greyish, 0,5−1,8 cm long, 3−5 mm ∅; *glumes reddish-brown, densely set with short whitish hairs in upper part*, 1−2 mm long; nutlet biconvex.

Tidal inlets, lagoons; seasonally inundated *Suaeda-Avicennia* mangrove swamps bordering *Hyphaene-Sclerocarya* wooded grassland; salt marshes; intertidal mudflats down to spring tide level; sandy beaches; muddy hollows in black cotton soil; moist valley bottoms in *Combretum* woodland; edges of rice fields; waste places; saline seepages; springs on gravel; lakesides; alkaline soils; gueltas; inselbergs (Porembski & Brown in Candollea 50: 358, 1995; Tindano in Bois & Forêts Trop. 325: 26, 2015); 0−2500 m alt. – Adapted to halophytic conditions and normally found towards coastal areas and near brackish waters. In inland areas also it is found in saline soils. – "Quite frequently plants of *F. dichotoma* and *F. ferruginea* grow intimately mixed" (Gordon-Gray 1995: 93). Often occurs with *Eleocharis geniculata* (Liberia, Mesterházy in Lidia 7/5: 108, 2012).

Tropical, subtropical and warm-temperate areas in the world. – N Africa from Morocco to Egypt; Cape Verde Isl. (Brochmann & Rustan in Garcia de Orta 16: 23, 1993); Bioko/Fernando Poo, S. Tomé; Namibia, S. Africa, Botswana, Swaziland; Aldabra, Mauritius, Madagascar, Réunion; Canary islands (Gran Canaria first recorded in 1973, cf. Verloove in Webbia 67: 97, 2012); S. Europe: Spain, Crete, Cyprus; from W Asia to Middle East, Turkey, Oman, Saudi Arabia, Yemen, Syria, Caucasus, Iraq, Iran, Afghanistan, S Asia from India, Sri Lanka to Korea, Indonesia, Philippines, Japan; N Australia; Pacific islands; C. & S. America, West Indies. – For Andaman & Nicobar isl., See Prasad in Nelumbo 59: 156, 2017 (subsp. *sieberiana*).

Comprises 2 subspp. in our area: – subsp. **ferruginea** [for synonyms See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew], widespread in the tropics; – subsp. **sieberiana** (Kunth) Lye [bas.: *F. sieberiana* Kunth; syn.: *F. ferruginea* var. *sieberiana* (Kunth) Boeckeler; *F. mauritiana* Tausch in Roem. & Schult. 1824] in the tropics and subtropics of the Old World. – Subsp. **ferruginea** in coastal areas, with lower leaf sheaths shiny brown and leathery, leaf blades < 10 cm long, spikelets acute, nutlet 1−1,4 mm long; – subsp. **sieberiana** with lower leaf sheaths light brown or pale, not leathery or shiny; largest leaf blades > 10 cm long, spikelets obtuse, nutlet 1,3−1,7 mm long.

Culms used as screens for huts. Planted as erosion control, to stabilise sandy areas.

F. ferruginea sensu auct. = *F. turkestanica* (Regel) B. Fedtsch. (Fl. Pakistan 206, Cyper.: 72, 2001).

Verloove (Webbia 67: 97−98, 2012) notes: "Kukkonen… found out that *F. ferruginea* from Iran and Pakistan in fact belongs to a closely related, predominantly Asian species, *F. turkestanica*… Spanish records were subsequently also referred to the latter species… Eventually, all records of *F. ferruginea* from the Euro + Med. area, including those from Gran Canaria, were – perhaps uncritically – renamed as *F. turkestanica*… Thus, at least for the time being and pending a (long-awaited !) worldwide revision of the *Fimbristylis ferruginea* – complex, plants from Gran Canaria are best ascribed to *F. ferruginea* s.l. …".

F. ferruginea is distinguished from *F. dichotoma*… and *F. bisumbellata*… by the smooth-surface achenes, round in outline, and by the glumes that are grey-velutinous… Distinctions from *F. longiculmis*… are less obvious" (Gordon-Gray 1995: 93).

F. fibrillosa Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 54: 81, 1984.

Perennial *densely tufted* herb with *thickened base* covered by a *dense mass of dark fibres*; culms 40−60 cm tall, erect; leaf sheaths rusty brown; blades 10−20 cm long, 0,2−0,3 cm wide, flat; ligule of fimbriate hairs; inflorescence a compound anthela of 25−35 spikelets; rays 4−6, unequal, to 4−5 cm long; spikelets oblong, 7−9 × 3−4 mm, several-flowered; nutlet lenticular, obovate, *surface minutely warty*, c. 1 × 0,8 mm.

Savanna with *Themeda triandra*; dembo; 930−1120 m alt.

Only 2 collections known, from 1958 and 1959.

F. gabonica Cherm.; Bull. Jard. Bot. Natl. Belg. 54: 80, 1984; Fl. Trop. E. Afr., Cyper.: 57, 2010 (as *F. robusta*). – Icon.: Bot. Not. 127: 499, 1974 (idem); Haines & Lye, Sedges & rushes E. Afr.: 84−85, 1983 (idem); Fl. Gabon 44, Cyper.: 139, 2012.

syn.: *F. robusta* Lye

Perennial herb 35−50 cm tall from a creeping *rhizome* at least 4 cm long, somewhat flattened, *7 mm* wide, *5*–(*10 mm* thick with sheaths), or with many crowded *rhizomes* giving rise to robust tussocks; culms 0,5−1 mm ∅, base swollen; leaves basal; sheaths pale brown, fibrous; blades 15 cm long, 0,8−1,5 mm wide; inflorescence open with one sessile and 4−5 stalked spikelets dark brown, lanceolate, 0,7−1,2 cm × 3,5−5,5 mm.

Seasonally wet grassland; marshes; damp savannas; dembos; 500 (? and less) −1140 m alt.

Near *E. ferruginea* but glumes glabrous.

Known only from 1 locality in Uganda (cited under *F. robusta* in Fl. Trop. E. Afr., l.c.).

F. gigantea Kük. – Icon.: R. E. Fries, Wiss. Erg. Schwed. Rhodesia-Kongo Exp. 1911−1912, 1, Ergänzungsheft: pl. 3 fig. 1, 1921.

Herb with a short rhizome; culms several, tufted, to 80 cm long, very stout, greyish green, with large leaf sheaths at base; inflorescence of many rays unequal in length each bearing 1−5 spikelets ellipsoid to cylindric, pedunculate, 5−16 mm long; nutlet obovate-oblong, surface tuberculate.

Wet sandy edge of lake; also in water 10−20 cm deep on sandy soil.

Said to be distinguished from (*F. longiculmis*=) *F. bivalvis* by its very thick culms and reticulate surface of nutlet. Should also be compared with *F. ferruginea*, which has, however smooth nutlets (fide Kükenthal).

F. hygrophila Gordon-Gray – See above under **Abildgaardia hygrophila** (Gordon-Gray) Lye – *Zulustylis* Muasya 2020.

F. littoralis Gaudich. var. **littoralis** – In some floras still cited as "*F. miliaceae* (L.) Vahl", See below. – Napper in Kew Bull. 25: 439−440, 1971; Bull. Jard. Bot. Natl. Belg. 54: 84, 1984; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 627, 1985; Fl. Trop. E. Afr., Cyper.: 52, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez: 152, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Mesterházy in Lidia 7/5: 108, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017); Poilecot, Guide Liber. grasses: 81, 167, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 81, 1983; Berhaut, Fl. ill. Sénégal 9: 241, 1988; Fl. Pakistan 206, Cyper.: 69, 2001[as *F. miliacea* (L.) Vahl following the proposal by Strong & Kral in Sida 4/2: pl. 29, 1971, to conserve the name *F. miliacea* (L.) Vahl; o.c.: 70]; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 57, 2002 [as *F. miliacea* (L.) Vahl]; Prasad & Singh, Sedges Karnataka (India): 187, 2002; Fl. Gabon 44, Cyper.: 141, 2012; Fl. China, Ill. 23: 266, 274, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 367, 2014.

syn.: *F. miliacea* sensu Vahl 1805 & auctt. pl., non *Scirpus miliaceus* L., nom. rej.; further syn. in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Tufted leafy annual (or short-lived perennial) herb 10−60 cm tall with shallow root system and many basal leaves; culms each with a basal shortly bifid prophyll followed by 2 short-bladed sheaths; leaves distichous, channelled, 10−40 cm long, 1,5−2 mm wide, narrowed to an acute tip and bearing new leafy shoots in their axils; inflorescence of many panicles; spikelets small, pale to dark brown, globose, 2−3 mm long; glumes brown, 1−1,3 mm long.

Dry river beds; drying swamp; bare, moist sands; rice fields on sandy soils; edges of dams; marshes; standing water; roadside ditches; 0−1200−2000 m alt. – "becomes abundant in fallows and its seeds survive ploughing-in, germinating as the new rice crop is planted. It provides cattle-fodder and the seed appears to pass undigested through the intestines" (Burkhill, l.c.). – "Common in the littoral zone of Western African lakes" (Mesterházy, l.c.).

Indian Ocean coasts to SE Asia, and Asia from Afghanistan, Iraq-India, Sri Lanka, Pakistan, Taiwan – Korea – Japan – Indonesia, Philippines; Australia; Pacific islands, Hawaii; N. America, USA, C. & S. America, West Indies. – Rare in Africa, possibly introduced with cultivated rive (Fl. W. Trop. Afr., ed. 2, 3/2: 323, 1972).

Var. **koidzumiana** (Ohwi) T. Koyama in Taiwan, Japan, NW Pacific with dark brown glumes 3,5−6 mm long (Fl. China 23: 208, 2010); – var. **macrostachya** (J. Kern) J. Kern in Malesia – Philippines.

"This species can be identified easily by the equitant, laterally flattened leaves and the small globose or subglobose spikelets" (Prasad & Singh, o.c.: 189).

"In many Floras this species is described as *F. miliacea* (L.) Vahl based on *Scirpus miliaceus* L. But this Linnean specimen was found to be *F. quinquangularis* (Vahl) Kunth… Consequently S. T. Blake… accepted *F. littoralis* Gaudich. as the correct name for this species" (Prasad & Singh, l.c.).

"Any material labelled *F. miliacea* needs careful examination to determine whether it is *F. littoralis* or *F. quinquangularis* [= *F. miliaceus* L.]" (Fl. Trop. E. Afr., l.c.).

(**F. longibracteata** Pires de Lima)

Herb with short rhizome; culms tufted, to 28 cm long, glabrous or pubescent; leaf blade thread-like; inflorescence an umbel of 3−5 spikelets each 3 × 6 mm; glumes rusty brown with green midvein terminating in a mucron.

Uncultivated places.

Said to differ from (*F. exile* (Kunth) Roem. & Schult. =) *Bulbostylis hispidula* subsp. *hispidula* by the presence of a rhizome, thread-like leaves and involucral bracts much longer than the umbel.

Type: Pires de Lima collected at Palma, Mozambique (10°48'N × 40°29'E), 10 February 1917 (Nº 104).

Not mapped. – Taxonomic status uncertain.

F. madagascariensis Boeckeler; Bull. Jard. Bot. Belg. 54: 79, 1984; Fl. Trop. E. Afr., Cyper.: 62, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 88, 1983; Troupin, Fl. Rwanda 4: 453, 1988.

Perennial herb 0,3−0,9 m tall with erect woody rhizome, *stoloniferous*; culms solitary or few together, 30−60 cm long, 1−2 mm ∅, compressed, ridged; leaves 5−30 cm long, 1,5−2,5 mm wide, with short spine-like marginal hairs, apex rounded; sheaths with thin orange brownish wings; ligule a rim of dense hairs; inflorescence an open panicle; spikelets 0,4−1,6 cm long, 2−3 mm ∅; nutlet ± globose, 1−3 mm, with scattered large papillae.

Miscanthus swamps; lake and swamp edges; swamp in miombo woodland; seasonally wet grassland; (?0) – 2100 m alt.

Madagascar.

May be confused with *F. complanata* (cf. Fl. Trop. E. Afr., l.c.).

(**F. magnifica** C. B. Clarke), Mem. Soc. Bot. France 8: 28, 1907.

Glabrous robust metre-long herb; leaves 50−80 cm long, 6 mm wide; inflorescence umbel decompound, c. 16 cm high, 6 cm wide, i.e. with various compound ramifications, of 600 spikes, branches erect; spikelets solitary, linear-cylindric, 6 × 1−1,5 mm, reddish brown; style 3-fid, nutlet small, subtrigonous, warty.

Known only from the type, Congo, Brazzaville, collected by A. Chevalier 1−12 January 1904.

Taxonomic status uncertain. Not mapped.

F. microcarya F. Muell. var. **microcarya**; Bull. Jard. Bot. Natl. Belg. 54: 83, 1984; Clarke & Mannheimer, Cyper. Namibia: 96, 87 (map), 1999; Archer & Craven, Cyper. Namibia: 22, 2004; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017). – Icon.: Prasad & Singh, Sedges Karnataka (India): 192, 2002; Mesterházy in Lidia 7/5: 107, 2012 (as *F. thonningiana*); Fl. Gabon 44, Cyper.: 149, 2012 (idem).

syn.: *Iria microcarya* (F. Muell.) Kuntze; *Fimbristylis complanata* (Retz.) Link var. *microcarya* (F. Muell.) C. B. Clarke; *F. autumnalis* (L.) Roem. & Schult. var. *microcarya* (F. Muell.) Kük.; *F. thonningiana* Boeckeler (not *F. castanea* Vahl var. *thonningiana* Boeckeler = *F. pilosa*); *Iria thonningiana* (Boeckeler) Kuntze; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual tufted herb 17−50 cm tall; culms flattened at top, 0,6−1 mm ∅; leaves mostly basal, shorter than culm, flat, 3,5−25 cm long, 1−3 mm wide, tip abruptly acuminate; sheaths flattened, 1,5−9 cm long; ligule a fringe of short hairs; inflorescence branched, open, 1,5−7 cm long, 1,5−6 cm wide, an umbel of the third order; primary rays few to many, very unequal, compressed, lowest to 4,5 cm long; spikelets numerous, solitary, ovoid, 2−5 mm long (reaching 8 mm including the bare rachilla when old), 1−1,2 mm wide, pointed, few-flowered; rachilla winged.

Damp grassland; wet exposed places; marsh in palm savanna; humid hollows and pools in meadows; 0 -800 m alt.

Namibia; widely distributed in E Asia, Thailand – India – Himalaya – Malesia; N Australia.

Var. **tainanensis** (Ohwi) H. Y. Lin in Taiwan.

(**F. mozambicensis** Gand.), Bull. Soc. Bot. France 66: 297, 1920.

Annual unbranched herb finely puberulous with long silvery hairs below; leaves filiform, ± equalling length of culms; inflorescence umbellate of rusty brown spikelets; glumes oblong, keeled.

Described from Mozambique (Cavallo 1).

Said to be distinguished from ("*F. hispidula* Kunth" =) *Bulbostylis hispidula* (Vahl) R. W. Haines which is characterised by rarely spreading pubescence, spikelets half as long and glumes scarcely keeled; herb c. 30 cm tall, glaucous, with basal leaf sheaths rusty brown, fimbriate.

Bulbostylis hispidula is a very polymorphic species with culms glabrous to densely hairy with long slender transparent hairs, leaves 1−15 cm long, and spikelets 4−15 mm long, 2−4 mm wide.

Taxonomic status uncertain. Not mapped.

F. nigritana C. B. Clarke; Lowe & Stanfield, Fl. Nigeria: Sedges: 71, 1974; Brunel & al., Fl. analyt. Togo in Englera 4: 547, 1984.

Perennial herb, ? rhizomatous, 20−60 cm tall; leaves (specimen incomplete) 27 cm long, 5 mm wide; culm 1,5−2 mm ∅, bearing a much-branched inflorescence c. 14 cm long, c. 7 cm wide; inflorescence an umbel of the fourth order, with rather long erect branches with 74 spikelets; spikelets solitary, dark chestnut, 5−9 mm long, 2−3 mm ∅, reaching 15 mm long when old incl. the bare rhachilla; nutlet black, biconvex.

Plains among grasses.

The type specimen (Barter 623) gathered c. 1858, is presumed to be collected in the Jebba area (Nupe), Nigeria.

F. obtusifolia (Lam.) Kunth 1837, non (Nees) C. Presl 1828 – See above under **F. cymosa** R. Br. subsp. **cymosa**. Illustration by Gordon-Gray, Cyper. Natal (Strelitzia 2: 94, 1995) and discussion ibid.: p. 93−95.

F. ovata (Burm. f.) J. Kern – See above under **Abildgaardia ovata** (Burm. f.) Kral

F. pilosa Vahl 1805, non (Willd.) K. Schum. 1895 (= *Bulbostylis pilosa*); Bull. Jard. Bot. Natl. Belg. 54: 82, 1984; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 627, 1985; Akoègninou & al., Fl. analyt. Bénin: 101−102, 2006; Lisowski, Fl. Rép. Guinée 1: 401−402, 2009; Fl. Trop. E. Afr., Cyper.: 60−61, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al in Phytotaxa 304: 104, 2017); Velayos & al., Fl. Guinea Ecuat. 11: 111, 2014; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 86−87, 1983;

Berhaut, Fl. ill. Sénégal 9: 242, 1988; Fl. Eth. & Eritrea 6: 410, 1997; Fl. Gabon 44, Cyper.: 141, 2012.

syn.: *Scirpus pilosus* (Vahl) Poir. 1817, nom. illeg.; *Fimbristylis castanea* Vahl var. *thonningiana* Boeckeler; *Iria pilosa* (Vahl) Kuntze; *Fimbristylis subpilosa* Kük.; *F. elongata* Sieber ex C. Presl 1828, nom. inval., non Pires de Lima 1924 nec R. Br. 1810 (= *F. dichotoma* subsp. *dichotoma*); *Scirpus fimbriatus* Willd. ex Kunth 1837, non Poir. 1805; *Cyperus lanatus* Ruiz ex Boeckeler; *Fimbristylis madagascariensis* sensu Vollesen in Op. Bot. 59: 94, 1980, non Boeckeler

Tufted perennial herb 25−90 cm tall, with short erect bulbous rhizome, more rarely annual; base often covered by fibrous remnants of old split leaf sheaths; culms compressed above, angular below, 0,4−1 mm ∅, usually densely set with spine-like hairs; leaves 15−20 cm long, 0,5−3 mm wide, margins densely hairy; sheaths hairy with brownish wings near throat; inflorescence simple, 2,5−9 cm long, 1−8 cm wide, with 1 sessile and 1−2 stalked spikelets, each ovoid, 3,5−7 × 2−4 mm, to 15 mm long incl. bare rhachilla when old; glumes very broad (3 × 3 mm); nutlet biconvex.

Seasonally flooded grassland; bushed grasslands; muddy pool and swamp margins on damp sandy soil in dry river beds; edge of *Brachystegia* patches; open forests; cultivations; fallows; road sides; waste lands; on sand; grassy savannas; 30−1300 m alt.

Mentioned from S. America, Brazil, by Raddi, Agrostografia brasiliensis fide Longhi-Wagner & al. in Kew Bull. 65: 454, 2010.

Near *F. dichotoma*, *F. bisumbellata*.

F. polytrichoides (Retz.) Vahl; Fl. Trop. E. Afr., Cyper.: 62, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 88−89, 1983; Prasad & Singh, Sedges Karnataka (India): 200, 2002; Fl. China, Ill. 23: 280, 2012.

bas.: *Scirpus polytrichoides* Retz.

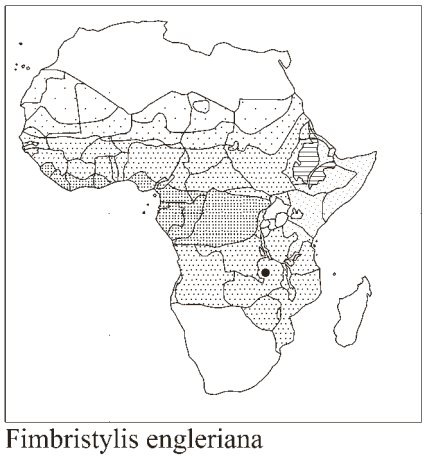
syn.: *Iria polytrichoides* (Retz.) Kuntze; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

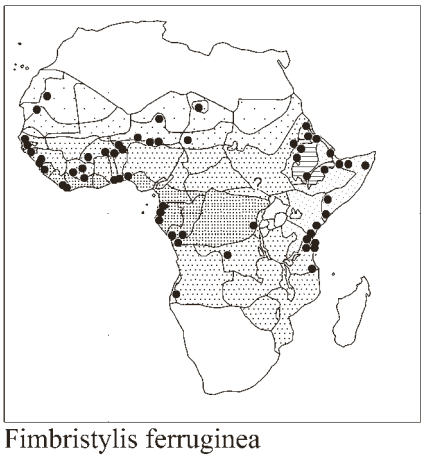
Very densely tufted perennial herb 10−40 cm tall; culms many, flattened; leaves to 2/3 the height of culms, c. 1−2 mm ∅; inflorescence 7−18 cm tall with a single straw-coloured or pale greenish brown ovoid to lanceolate spikelet 5−12 × 2−4 mm.

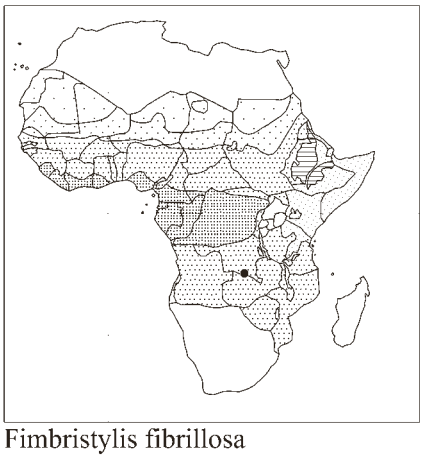
Seasonally inundated mangrove swamp with *Avicennia*; seaward edges of saltmarshes; stone quarry; lake edges in inland; 0−15 m alt.

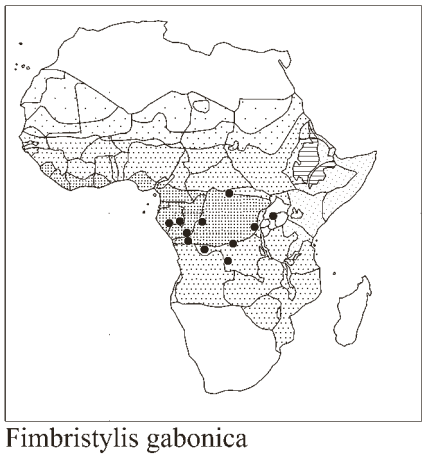
Madagascar; tropical Asia from India – Sri Lanka E-wards to Malaysia – Indonesia -Philippines; Australia.

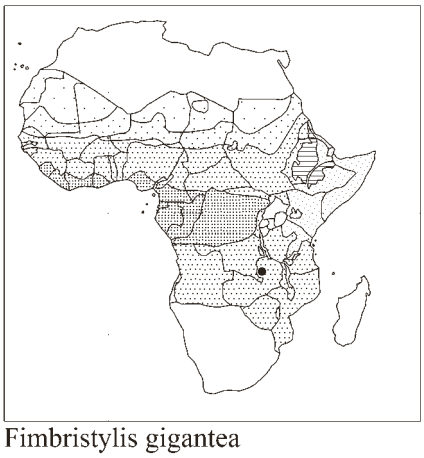
F. quinquangularis (Vahl) Kunth – Figuring as *F. miliacea* (L.) Vahl in some floras. – Prasad & Singh, Sedges Karnataka (India): 193−194, 2002 (as *F. miliacea*); Fl. Trop. E. Afr., Cyper.: 53−54, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011 (as *F. miliacea*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 72 Fig. 21/17, 1974; Lye in Nord. J. Bot. 2: 334−335, 1982 (under *F. miliacea*); Haines & Lye, Sedges & rushes E. Afr.: 81−82, 1983; Berhaut, Fl. ill. Sénégal 9: 242, 1988 (as *F. miliacea*); Fl. Eth. & Eritrea 6: 410, 1997 (idem; remark made in Fl. Trop. E. Afr., l.c.: fig. 212, 29 citation error: the original of the drawing is Makerere College 638, not Wingfield 2087); Fl. Pakistan 206, Cyper.: 69, 2001; Lisowski, Fl. Rép. Guinée 2: fig. 485, 2009 (as *F. miliacea*); Fl. Gabon 44, Cyper.: 143, 2012; Fl. China, Ill. 23: 274, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 369, 2014.

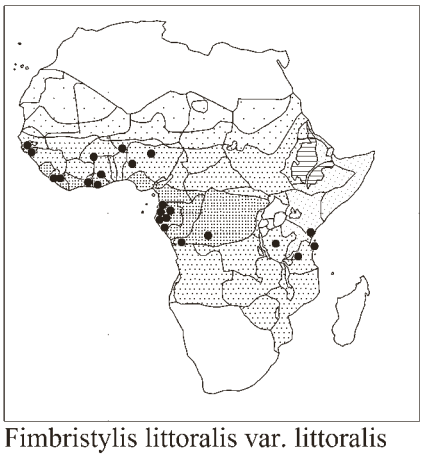

Fimbristylis engleriana

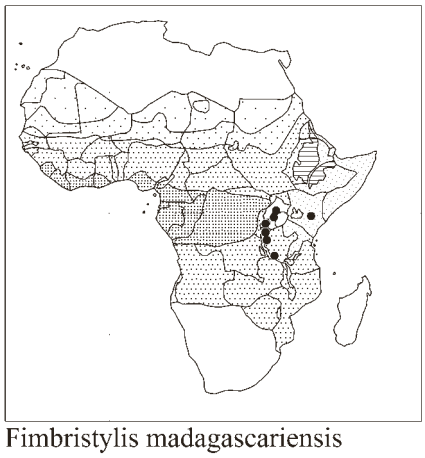

Fimbristylis ferruginea

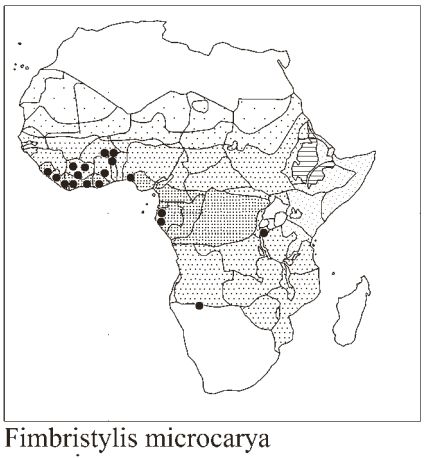

Fimbristylis fibrillosa

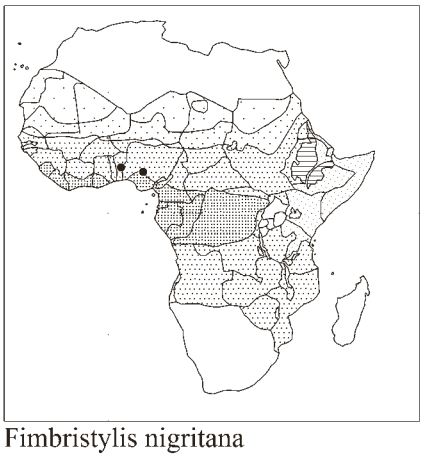

Fimbristylis gabonica

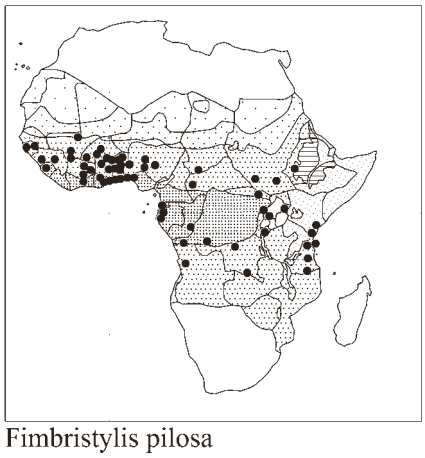

Fimbristylis gigantea

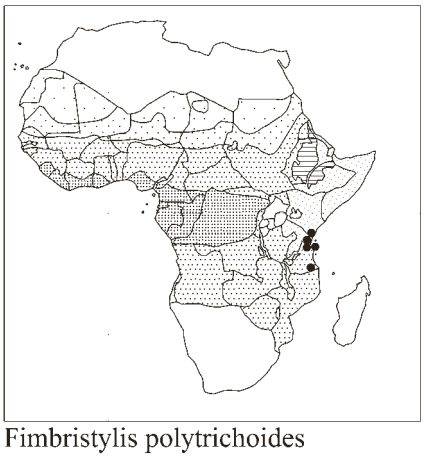

Fimbristylis littoralis var. littoralis

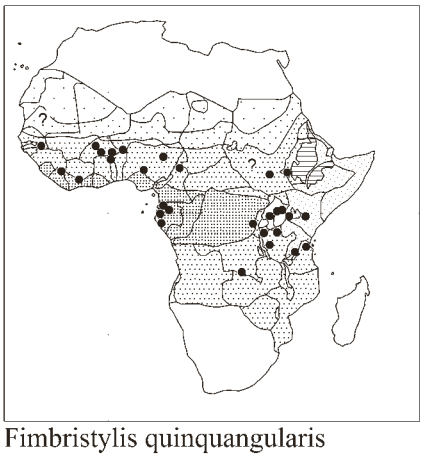

Fimbristylis madagascariensis


Fimbristylis microcarya
var. microcarya


Fimbristylis nigritana


Fimbristylis pilosa


Fimbristylis polytrichoides


Fimbristylis quinquangularis

bas.: *Scirpus quinquangularis* Vahl

syn.: *Iria quinquangularis* (Vahl) Kuntze; *Scirpus miliaceus* L. 1759, nom. rej.; *Fimbristylis miliacea* (L.) Vahl 1805, nom. rej.

Tufted annual or possibly sometimes perennial herb with slender root-stock, 0,2−1,25 m tall; culms 0,5−1,5 mm ∅, *4−5-angled*; leaves up to as long as stems; blade flat, 1−3 mm wide, ligule absent; inflorescence open, paniculate, 5−10 cm long, 2−6 cm wide; spikelets ovoid, 2−5 × 1−5 mm; nutlet white or pale yellowish brown, transversely ridged.

Bogs; swampy grassland; rice fields; small temporary pool in *Combretum*, *Terminalia* woodland; guelta; *Combretum* bushland; rocky crevices near permanent water; on black soil; 0−1650 m alt.

Madagascar, Comoros, Mauritius, Réunion; tropical & subtropical C – SE Asia, from Afghanistan, Iraq, E-wards through India, Pakistan to S China, Taiwan, Indonesia – Philippines; tropical Australia; – scattered occurrence – introduced Fiji, Hawaii; West Indies, C. America; "recently, probably, introduced to America, Puerto Rico".

Comprises 3 subspp.: – subsp. **quinquangularis** (synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew); pantropical, with short glumes (1−1,5 mm) and nutlet with epidermal cells in 4−6 vertical rows on each face; – subsp. **macroglumis** (Lye) Verdc. (bas.: *F. miliacea* subsp. *macroglumis* Lye), in Uganda – Kenya – Tanzania, with nutlet with chambered papillae; – subsp. **pallescens** (Lye) Verdc. (bas.: *F. miliacea* subsp. *pallescens* Lye) in NE Tanzania (T6), with nutlets with epidermal cells in 2−3 vertical rows on each face.

There may still be confusion about the identity of herbarium material labelled *F. miliacea*, and "all determination labels pre-1980 are suspect. Examination of the actual material is essential" (Fl. Trop. E. Afr., l.c.). Nomenclatural confusion possible with *F. littoralis*.

Perhaps introduced in Africa and America with cultivation of rice.

(**F. rhizomatosa** Pires de Lima) Bot. Soc. Brot., Sér. 2, 2: 134, 1924, non *Bulbostylis rhizomatosa* (Lye) R. W. Haines (bas.: *Abildgaardia rhizomatosa* Lye).

Herb with horizontal rhizome to 2 cm long; culms angular-striate, to 30 cm tall; leaves numerous, the lowermost reduced to scales, the upper ones longer than culms, with white hairs at throat of sheath; inflorescence compound, subtended by 6 thread-like bracts to 6,5 cm long; spikelets numerous (to 40), pointed, to 6 × 1,5 mm; glumes mucronate, rusty brown with pale margins.

Uncultivated place near the road Palma – Quionga (= 10°48'S−10°37'S × 40°31'E).

Type: Pires de Lima 52, collected 8 November 1916.

Said to differ from "*F. capillaris* K. Schum." [= ? *Bulbostylis densa* (Wall. in Roxb.) Hand.-Mazz.] by the presence of a rhizome, longer leaves and involucral bracts, and more numerous spikelets.

Taxonomic status uncertain. Not mapped.

(**F. rhodesiana** Rendle)

Annual tufted herb to c. 10 cm tall, with the "habit of *F. exilis* Roem. & Schult."; culms striate, 0,3 mm ∅, with spreading hairs; leaves linear, half the length of the culms, 0,5 mm wide; inflorescence an umbel of 3−5 spikelets on 6−9 mm long peduncles; spikelets 5 mm long, ovate, compressed, > 20-flowered, chestnut brown; glumes ovate, 3 mm long, with pale midrib, readily falling; nutlet whitish, trigonous, c. 1 mm long, transversely rugulose. – Plant "with a habit of small slender forms of *F. exilis* Roem. & Schult." [= *Bulbostylis hispidula* R. W. Haines subsp. *hispidula*] from which "it is distinguished by the relatively broader and shorter many-flowered spikelets, the readily falling glumes, shorter anthers and smaller nutlets."

Collected by Swynnerton (Nº 920), April 1906, at "Upper Buzi" River, Mozambique MS [= Budzi R. in Zimbabwe, "a well-known route providing access to the interior (Zimbabwe plateau) from the port of Sofala"; Swymerton collected here in 1906; fide Pope, Flora Zambesiaca, collecting localities in Flora Zambesiaca area: 9, 1998; Buzi River bridge = 20°27'S × 32°50'E].

Taxonomic status uncertain. Not mapped.

F. scabrida Schumach.; Bull. Jard. Bot. Natl. Belg. 54: 82, 1984; Akoègninou & al., Fl. analyt. Bénin: 102, 2006; Fl. Trop. E. Afr., Cyper.: 61, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 70, 1974; Haines & Lye, Sedges & rushes E. Afr.: 87, 1983; Berhaut, Fl. ill. Sénégal 9: 243, 1988; Fl. Gabon 44, Cyper.: 143, 2012.

syn.: *F. muriculata* Benth.; *F. mucronata* Boeckeler 1871, nom. illeg., non Vahl 1805 (= *F. quinquangularis* subsp. *quinquangularis*); *F. pachystachys* Cherm.; *F. pachystylis* Cherm.; *Iria mucronata* Kuntze – *Fimbristylis muricata* Walp. and *F. muricatula* Steud. are both orthographic errors for *muriculata*.

Tufted perennial herb 35−83 cm tall with swollen base covered with fibrous remains of red split leaf sheaths; culms 0,7−1 mm ∅, rounded or slightly compressed above, scabrid with short *spine-like teeth*; leaf sheaths pale with thin wing; blades c. 10 cm long, 1−2,5 mm wide, ± flat, scabrid on margins, tip with *spine-like hairs*; inflorescence an open panicle; spikelets lanceolate-cylindric, 0,6−1,4 cm × c. 2 mm; glumes brown with green midrib projecting as a sharp point.

Dry grassland heavily grazed; damp grassland; humid savanna; rocky outcrops; woodland; meadows; sandy soil; often found as isolated specimens; 0−1200 m alt. – Forming a coarse matted turf.

Madagascar; India (Plant Discoveries 2017: 48−49, 2018).

F. schoenoides (Retz.) Vahl; Lowe & Stanfield, Fl. Nigeria: Sedges: 74, 1974; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 628, 1985; Simpson & Inglis in Kew Bull. 56: 318, 2001; Pl. Pakistan 206, Cyper.: 73−74, 2001; Fl. Trop. E. Afr., Cyper.: 62−63, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 89, 1983; Berhaut, Fl. ill. Sénégal 9: 244, 1988; Prasad & Singh, Sedges Karnataka (India): 203, 2002; Fl. Gabon 44, Cyper.: 145, 2012; Fl. China, Ill. 23: 279, 2012.

bas.: *Scirpus schoenoides* Retz.

syn.: *Iria schoenoides* (Retz.) Kuntze; See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Tufted annual or perennial herb 10−50 cm tall with angular culms; leaf blades 5−15 cm long, 1−2 mm wide; inflorescence usually a solitary ovoid spikelet 0,4−0,8 (−1,5 cm in fruit) × 0,3−0,5 mm, rarely with 1−2 additional stalked spikelets.

Open marshy areas of well grazed grassland with some rice cultivation; murram pit; weed in cultivated ground; bare sands temporarily very humid, often near salty soils; meadows; pool edges; ?-500−1200 m alt.

First collected in Nigeria in 1973. Scattered in Africa and perhaps introduced.

Subtropical-tropical Asia, widespread in India, Sri Lanka, Pakistan – Malaysia – S China, Taiwan – Indonesia; N Australia; introduced in Hawaii and S USA.

F. schweinfurthiana Boeckeler, incl. var. *angustior* C. B. Clarke (Mali: Lecard 111); Jaeger & Adam, Végét. vascul. Mts Loma 2: 221, 1981; Berhaut, Fl. ill. Sénégal 9: 234, 1988 (in key); Lisowski, Fl. Rép. Guinée 1: 402, 2009; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015.

Erect herb 15−30 cm tall with *slender* culms and thick perennial tufts of old culms and leaf-bases; basal sheaths fimbriate, fuscous; blade to 0,5 mm wide, 1/2 the length of the culm; inflorescence a loose umbel, subcompound with 2−9 spikelets dull brown, rather dense, each 5 × 3 mm, obtuse, ellipsoid.

Depressions in rocky outcrops; shallow soils on seasonally swampy ground; seepage areas; temporary pools on skeletal soils; ? to c. 1400 m alt.

Probably not in Sénégal.

F. splendida C. B Clarke; Renier, Fl. Kwango 1: 73, 1948; Fl. Trop. Afr. 8: 527, 1902; Bull. Jard. Bot. Natl. Belg. 54: 83, 1984; Walters & al. in Edinb. J. Bot. 68: 428, 2011. – Icon.: Fl. Gabon 44, Cyper.: 147, 2012 (nutlet); Velayos & al., Fl. Guinea Ecuat. 11: 370, 2014.

syn.: ? *F. magnifica* C. B. Clarke in Bull. Soc. Bot. France 54, Mém. 8: 28, 1907 (fide Goetghebeur & Coudijzer in Bull. Jard. Bot. Natl. Belg. 54: 83, 1984).

Perennial herb forming thick tufts with swollen base covered with numerous basal leaves; rhizome woody, c. 5 mm ∅, usually erect; culms 0,6−1,2 m tall, 2−5 mm ∅, cylindric to compressed above, more angular below, base covered with tough sheaths often blackish after fires; leaf sheaths thick; blades linear, 15−40 cm long, 4−6 mm wide, thick, tough; inflorescence a compound loose umbel 6−20 × 3−8 cm of 200−400 spikelets arranged in 1 sessile fascicle subtended by 3−6 stalked fascicles, peduncles 8 cm long, 1 mm ∅; spikelets linear, 5−10 × 1−1,5 mm, light reddish brown but blackish when the glumes are falling.

Humid places in meadows, dambos, marshes, wet grassland; savannas, forest edges; plateau – "Batéké"; 0−500 m alt.

Near *F. complanata* but much larger, leaves wider, and with > 100 spikelets per inflorescence.

F. squarrosa Vahl var. **squarrosa**; Renier, Fl. Kwango 1: 73, 1948; Brenan & al. in Mem. New York Bot. Gard. 9/1: 97, 1954; Bull. Jard. Bot. Natl. Belg. 54: 85, 1984; Clarke & Mannheimer, Cyper. Namibia: 96, 87 (map), 1999; Fl. Pakistan 206, Cyper.: 76−77, 2001; Archer & Craven, Cyper. Namibia: 22, 2004; Lye in Taxon 55: 1025−1026, 2006 (typification); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 112, 2010; Fl. Trop. E. Afr., Cyper.: 63, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 121, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 68, 1974; Haines & Lye, Sedges & rushes E. Afr.: 90, 1983; Berhaut, Fl. ill. Sénégal 9: 246, 1988; Gordon-Gray, Cyper. Natal: 95, 1995 (nutlet); Tan & al. in Phytolog. Balcan. 13: 82, 2007; Fl. Gabon 44, Cyper.: 145, 2012; Fl. China, Ill. 23: 281, 2012; Prasad in Rheedea 28: 89, 2018 (details).

syn.: *Scirpus squarrosus* (Vahl) Poir. 1817, nom. illeg., non L. 1771 (= *Lipocarpha squarrosa*), nec Spreng. 1827 (= *Isolepis bicolor*); *Iria squarrosa* (Vahl) Kuntze; *Fimbristylis aestivalis* (Retz.) Vahl var. *squarrosa* (Vahl) T. Koyama; *F. ecklonii* Nees; *Cyperus hirtus* Thunb.; *Bulbostylis hirta* (Thunb.) Svenson; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb 4−20 cm tall with few to many tufted culms; leaves 1/2 to 3/4 the length of the culm, very narrow, flat, densely hairy, ligule absent; inflorescence umbelliform of 1 sessile spikelet and 5−10 stalked spikelets, peduncles 2−20 mm long, and often with 1−5 secondary stalked spikelets from base of primary spikelet; spikelets greyish green or buff, oblong, 5−6 × 1,5−2 mm; glumes elliptic, 1,5−2 mm long, densely hairy or scabrous, light brown with green midnerve ending in a long curved awn.

Riverine sand banks; river beds; mud flats; open parts of swamps; shallow pools; grassy edges of lakes; mostly seasonally wet places when just drying; wet rocky outcrops; rice fields; 0−1600 m alt.

Algeria; Namibia, Botswana, S. Africa; Madagascar; widespread in the tropics and subtropics except N. America: Old World tropics from Caucasus – Iran E-wards to Japan; Australia; New Zealand. Introduced in Italy, Greece (Tan & al., 2007: l.c.), Pacific islands (Fiji), West Indies, S. America.

Var. **esquarrosa** Makino in the Far East (Thailand – Vietnam – Korea – N & NE China – Japan – Australia – Philippines – New Zealand). In E Asia there is considerable overlapping of both varieties (Prasad & Singh, Sedges Karnataka /India: 209−210, 2002; Prasad in Rheedea, l.c.).

"The hairs, developed from the expanded style base and dependent over the achene, immediately identify the species and distinguish it from *F. bisumbellata*" (Gordon-Gray, o.c.: 95). Distinguished from other species by its glumes with recurved long mucro.

F. striolata Napper, Kew Bull. 25: 438, 1971; Lisowski, Fl. Rép. Guinée 1: 402, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 104, 2017). – Icon.: Berhaut, Fl. ill. Sénégal 9: 246, 1988 (details).

Annual herb growing in small tufts; culms erect, < 10−45 cm tall, c. 0,5 mm ∅, 3-angled; leaf blades filiform (< 0,5 mm wide), shorter than culms; inflorescence of 1−12 lanceolate-ovate spikelets 5−7 × 1,5−2,5 mm; glumes mucronate.

Seasonally swampy places; rice fields; grassland.

"Scarcely differing from *F. alboviridis* except by the achene, though the habit is usually rather stouter than commonly recorded from the other; an extreme, very slender form with solitary spikelets is common in some areas" (Fl. W. Trop. Afr., ed. 2, 3/2: 321, 1972). – "A very slender form of *F. alboviridis* with solitary spikelets and nutlets faintly pluristriate with to 15 ribs, rarely with tubers, surface cells thick-walled, square or almost so".

(***F. subaphylla*** Boeckeler) – Included in **F. complanata** (Retz.) Link. See under that species above.

F. triflora (L.) K. Schum. – See above under **Abildgaardia triflora** (L.) Abeyw.

SYNONYMS:

Fimbristylis abortiva Steud. = **Bulbostylis abortiva**
actinoschoenus C. B. Clarke, incl. var. *chinensis* (Benth.) C. B. Clarke and *var. thouarsii* (Kunth) C. B. Clarke = **Actinoschoenus thouarsii**
aestivalis (Retz.) Vahl var. *squarrosa* (Vahl) T. Koyama = **Fimbristylis squarrosa**
africana C. B. Clarke = **Bulbostylis pilosa**
andongensis Ridl, incl. var. *glabra* Ridl. = **B. andongensis**
annua (All.) Roem. & Schult. = **Fimbristylis dichotoma**
annua var. *podocarpa* (Nees) Kük. = **F. dichotoma** subsp. **podocarpa**
aphyllanthoides Welw. ex Ridl. = **Bulbostylis pilosa**
arenaria Nees = **B. humilis**
atacorensis A. Chev. = **B. laniceps**
atrosanguinea (Boeckeler) K. Schum. = **B. atrosanguinea**

autumnalis (L.) Roem. & Schult. var. *complanata* (Retz.) Kük. = **Fimbristylis complanata**
autumnalis var. *microcarya* (F. Muell.) Kük. = **F. microcarya**
barbata (Rottb.) Benth., incl. var. *subtristachya* Ridl. = **Bulbostylis barbata**
barbata var. *subtristachya* sensu Ridl. = **B. trabeculata** subsp. **trabeculata**
barbata sensu Ridl. 1884, non (Rottb.) Benth. = **B. trabeculata** subsp. **trabeculata**
bequaertii De Wild. = **Fimbristylis complanata** subsp. **complanata**
burchellii Ficalho & Hiern = **Bulbostylis burchellii**
cardiocarpa Ridl. 1884, non F.v. Muell. 1859 = **B. filamentosa**
castanea Vahl var. *thonningiana* Boeckeler = **Fimbristylis pilosa**
chevalieri Kük. = **F. barteri**
chinensis (Benth.) Tang & F. T. Wang = **Actinoschoenus thouarsii**
cinnamomea (Boeckeler) K. Schum., incl. var. *longigluma* Kük. = **Bulbostylis cinnamomea**
cioniana Pi. Savi = **B. cioniana**
cioniana var. *microcarpa* Chiov. = **B. somaliensis** subsp. **microcarpa**
clavinux C. B. Clarke = **B. hispidula** subsp. **hispidula**
coleotricha Hochst. ex A. Rich. = **B. coleotricha**
collina Ridl. = **B. scabricaulis**
complanata (Retz.) Link var. *keniaeensis* (Kük.) Lye = **Fimbristylis complanata** subsp. **keniaeensis**
complanata var. *microcarya* (F. Muell.) C. B. Clarke = **F. microcarya**
complanata var. *subaphylla* (Boeckeler) Lye = **F. complanata** subsp. **complanata**
consanguinea Kunth = **F. complanata** subsp. **complanata**
contexta (Nees) Kunth = **Bulbostylis contexta**
cymosa R. Br. subsp. *spathacea* (Roth) T. Koyama = **Fimbristylis cymosa**
densa (Wall.) T. Koyama & T. I. Chuang 1960 = **Bulbostylis densa**
dichotoma sensu auctt., non (L.) Vahl = **Fimbristylis bisumbellata**
dichotoma (L.) Vahl fa. *annua* (All.) Ohwi = **F. dichotoma** subsp. **dichotoma**
dichotoma fa. *diphylla* (Retz.) Ohwi = **F. dichotoma** subsp. **dichotoma**
dichotoma subsp. *bisumbellata* (Forssk.) Luceño = **F. bisumbellata**
dichotoma var. *laxa* (Vahl) Napper = **F. dichotoma** subsp. **dichotoma**
dichotoma var. *pluristriata* (C. B. Clarke) Napper = **F. dichotoma** subsp. **podocarpa**
dichotoma var. *villosa* Vahl = **F. bisumbellata**
diphylla (Retz.) Vahl = **F. dichotoma** subsp. **dichotoma**
diphylla var. *laxa* (Vahl) E. G. Camus = **F. dichotoma** subsp. **dichotoma**
diphylla var. *pluristriata* C. B. Clarke = **F. dichotoma** subsp. **podocarpa**
diphylla var. *podocarpa* (Nees) Kük. = **F. dichotoma** subsp. **podocarpa**
diphylla var. *tomentosa* (Vahl) Benth. = **F. dichotoma** subsp. **podocarpa**
diphylla var. *tuberculata* Peter = **F. madagascariensis**
diphylla var. *tuberculata* Cherm. = **F. alboviridis**
dregeana Kunth = **F. dichotoma** subsp. **dichotoma**
ecklonii Nees = **F. squarrosa** var. **squarrosa**

elongata R. Br. 1810 = **F. dichotoma** subsp. **dichotoma**
elongata Sieber ex C. Presl 1828 = **F. pilosa**
elongata Pires de Lima 1923 = ? **F. complanata**
exigua Boeckeler = **Isolepis sepulcralis**
exilis (Kunth) Roem. & Schult. = **Bulbostylis hispidula** subsp. **hispidula**
exilis var. *brachyphylla* Cherm. = **B. hispidula** subsp. **brachyphylla**
exilis var. *levinux* C. B. Clarke = **B. hensii**
exilis var. *rufescens* Cherm. = **B. viridecarinata**
exilis var. *senegalensis* Cherm. = **B. hispidula** subsp. **senegalensis**
ferruginea sensu auct., non (L.) Vahl = **F. turkestanica** (Regel) B. Fedtsch. (See under **F. ferruginea**)
ferruginea (L.) Vahl var. *sieberiana* (Kunth) Boeckeler = **F. ferruginea** subsp. **sieberiana**
filamentosa (Vahl) K. Schum. = **Bulbostylis filamentosa**
filiformis (Thwaites) Druce = **Actinoschoenus thouarsii**
flexuosa Ridl. = **Bulbostylis abortiva**
hensii C. B. Clarke = **B. hensii**
hildebrandtii (Boeckeler) Ridl. = **B. hispidula** subsp. **hispidula**
hispidula (Vahl) Kunth = **B. hispidula**
hispidula Boeckeler 1871 p.p. = **B. burchellii**
hispidula var. *brachyphylla* (Cherm.) Podl. = **B. hispidula** subsp. **brachyphylla**
hispidula subsp. *brachyphylla* (Cherm.) Napper = **B. hispidula** subsp. **brachyphylla**
hispidula var. *cioniana* (Pi. Savi) Boeckeler = **B. cioniana**
hispidula var. *confertospicata* Kük. = **B. hispidula** subsp. **hispidula**
hispidula var. *glabra* Kük. = **B. hispidula** subsp. **hispidula**
hispidula subsp. *hensii* (C. B Clarke) J. Raynal = **B. hensii**
hispidula subsp. *senegalensis* (Cherm.) Napper = **B. hispidula** subsp. **senegalensis**
huillensis Ridl. = **B. burchellii**
humilis Peter = **B. schimperiana**
hygrophila Gordon-Gray = **Abildgaardia hygrophila**
keniaeensis Kük. = **Fimbristylis complanata** subsp. **keniaeensis**
laniceps K. Schum. = **Bulbostylis laniceps**
lanifera (Boeckeler) K. Schum. = **B. lanifera**
laxa Vahl = **Fimbristylis dichotoma** subsp. **dichotoma**
laxiflora C. B. Clarke = **Actinoschoenus thouarsii**
longiculmis Steud. = **Fimbristylis bivalvis**
macra Ridl. = **Bulbostylis macra**
madagascariensis sensu Vollesen 1980, non Boeckeler = **Fimbristylis pilosa**
magnifica C. B. Clarke = ? = ? **F. splendida**
marrana Miré & Quézel = **Bulbostylis densa** subsp. **afromontana**
mauritiana Tausch in Roem. & Schult. 1924 = **Fimbristylis ferruginea** subsp. **sieberiana**
megastachys Ridl. = **Bulbostylis megastachys**
melanocephala Ridl. = **B. melanocephala**
micheliana (L.) Rchb. = **Cyperus michelianus**
miliacea (L.) Vahl 1805, nom. rej. = **Fimbristylis quinquangularis** subsp. **quinquangularis**
miliacea sensu Vahl et auctt. pl. = **F. littoralis** var. **littoralis**
miliacea subsp. *macroglumis* Lye = **F. quinquangularis** subsp. **macroglumis**
miliacea subsp. *miliacea* = **F. quinquangularis**
miliacea subsp. *pallescens* Lye = **F. quinquangularis** subsp. **pallescens**

miliacea fa. *tenerrima* Valck. Sur. = **F. littoralis** var. **littoralis**
minima Hochst. ex Boeckeler = **Bulbostylis oligostachys**
minutissima Maire = **B. densa** subsp. **afromontana**
monostachya (L.) Hassk. = **Abildgaardia ovata**
mozambicensis Gand. = ? (See above **Fimbristylis** under that species)
mucronata Boeckeler 1871 = **Fimbristylis scabrida**
mucronata Vahl 1805 = **F. quinquangularis** subsp. **quinquangularis**
multispiculata sphalm. for *Scleria multispiculata* sensu Adam 1958: 21 = **Scleria robinsoniana**
muricata Walp. = **Fimbristylis scabrida** (orthographic error for **F. muriculata**)
muricatula Steud. = **F. scabrida** (idem)
muriculata Benth. = **F. scabrida**
obtusifolia (Lam.) Kunth 1837 = **F. cymosa** subsp. **cymosa**
obtusifolia Nees ex C. Presl 1828 = **F. dichotoma** subsp. **dichotoma**
oligostachya (Hochst. ex A. Rich.) K. Schum. = **Bulbostylis oligostachys**
oligostachys Hochst. ex A. Rich. = **B. oligostachys**
oritrephes Ridl. = **B. oritrephes**
ovata (Burm. f.) J. Kern = **Abildgaardia ovata**
pachystachys Cherm. = **Fimbristylis scabrida**
pachystylis Cherm. = **F. scabrida**
parva Ridl. = **Bulbostylis pusilla** subsp. **pusilla**
pilosa (Willd.) K. Schum. 1895, non Vahl 1805 = **B. pilosa**
pluristriata (C. B. Clarke) Berhaut = **Fimbristylis dichotoma** subsp. **podocarpa**
pluristriata var. *tuberculata* (Cherm.) Berhaut = **F. alboviridis**
podocarpa Nees = **F. dichotoma** subsp. **podocarpa**
podocarpa var. *tuberculata* (Cherm.) Berhaut = **F. alboviridis**
purpureoatra (Boeckeler) C. B. Clarke ex Engl. = **Bulbostylis oligostachys**
pusilla Hochst. ex A. Rich. = **B. pusilla**
quadrangularis A. Dietr. ex Steud. var. *crassa* C. B. Clarke = **Fimbristylis aphylla**
quaternella Ridl. = **Bulbostylis quaternella**
quinquangularis (Vahl) Kunth var. *testui* (Cherm.) Robyns & Tournay = **Fimbristylis aphylla**
robusta Lye = **F. gabonica**
rotundata Kük. = **Bulbostylis rotundata**
ruziziensis Germain in sched. = **B. viridecarinata**
"*sambesica*" = **B. macra**
sansibariensis = **Fimbristylis bivalvis**
schimperiana Boeckeler 1858 = **Bulbostylis schimperiana**
schimperiana (Hochst. ex A. Rich.) K. Schum. 1895 = **B. schimperiana**
schoenoides (Kunth) K. Schum. = 1895, non (Retz.) Vahl 1805 = **B. schoenoides**
setifolia A. Rich. = **B. atrosanguinea**
sieberiana Kunth = **Fimbristylis ferruginea** subsp. **sieberiana**
spadicea (L.) Vahl var. *ferruginea* (L.) Alph. Wood = **F. ferruginea**
spathacea Roth = **F. cymosa** subsp. **cymosa**
sphaerocarpa (Boeckeler) K. Schum. = **Bulbostylis sphaerocarpa**
subaphylla Boeckeler = **Fimbristylis complanata** subsp. **complanata**
subpilosa Kük. = **F. pilosa**
subumbellata K. Schum. = **Bulbostylis ugandensis**
taylorii K. Schum. = **B. taylorii**
tenuissima Steud. = **B. barbata** subsp. **barbata**
testui Cherm. = **Fimbristylis aphylla**
thonningiana Boeckeler = **F. microcarya** var. **microcarya**
thouarsii (Kunth) Merr. et auct. = **Actinoschoenus thouarsii**
tisserantii Cherm. = **Bulbostylis viridecarinata**
tomentosa Vahl = **Fimbristylis dichotoma** subsp. **podocarpa**
transiens K. Schum. = **Bulbostylis boeckeleriana** var. **transiens**
trichophora Steud. ex C. B. Clarke = **B. hispidula** subsp. **hispidula**
trifida (Nees) Trin. = **B. densa** subsp. **afromontana**
triflora (L.) K. Schum. = **Abildgaardia triflora**
tristachya (Vahl) Thwaites = **A. triflora**
vanderystii De Wild. = **Fimbristylis aphylla**
vermoesenii De Wild. = **Bulbostylis cioniana**
viridecarinata De Wild. = **B. viridecarinata**
wombaliensis De Wild. = **B. wombaliensis**
zambesica K. Schum. = **B. macra**

(FINTELMANNIA)

Fintelmannia setifera Ridl. = **Coleochloa setifera**

FUIRENA / *23*

Cosmopolitan genus of some 30 species in warm-temperate to tropical areas with centres of diversity in Africa and America. All species grow in seasonally or permanently wet habitats, some species are weeds, especially in rice fields, while others are used for fodder (Muasya 1998: 187).

The plants have a grass-like appearance, leafy nodose stem, ligulate leaves, and a paniculate inflorescence with few to many spikelets. The lower inflorescence bracts are similar to the upper leaves.

"The perianth parts of *Fuirena* have been a subject of controversy for a long time" (Vrijdaghs & al., o.c.). Recent observations confirm a pentacyclic organisation and corroborate the interpretation of the inner scales and outer bristles as perianth parts (Vrijdaghs & al., o.c.: 587).

In our area the ecology is not recorded for one species (*F. bullifera*), and 3 species (= c. 13 %) are known only from the type gathering.

FORBES, P. L. (1980). *A revision of Fuirena Rottb. (Cyperaceae) in southern Africa*. Thesis Doctor of Philosophy, Dept. Botany & Microbiology, Fac. Science, Univ. Witwatersrand, Johannesburg.

FORBES, P. L. (1986). Studies in Cyperaceae in southern Africa: 12. A new specific name in Fuirena Rottb. *S. Afric. J. Bot*. 52: 237–240.

FORBES, P. L. (1997). Studies in Cyperaceae in southern Africa. 34: Fuirena coerulescens, a polymorphic species. *S. African J. Bot*. 63: 514–520.

MUASYA, A. M. (1998). A synopsis of Fuirena (Cyperaceae) for the Flora of Tropical East Africa. *Kew Bull*. 53: 187–202.

VRIJDAGHS, A. & al. (2004). The nature of the perianth in Fuirena (Cyperaceae). *S. Afric. J. Bot*. 70: 587–594.

Fuirena abnormalis C. B. Clarke; Kew Bull. 53: 193, 1988; Fl. Trop. E. Afr., Cyper.: 10–11, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 52, 1983; Vrijdaghs & al., o.c.: 593 (flower).

syn.: *Scirpus abnormalis* (C. B. Clarke) T. Koyama

Annual herb; culm terete 0,11–1,2 m tall, 1–3 mm ∅ but ± 5 mm ∅ across the sheath; leaf sheath and ligule glabrous; blade 5–11 × 0,3–0,9 cm; inflorescence a paniculate cluster of

spikelets each 3−7 × 2−3 mm terete, with fewer than 10 flowers; perianth segments absent.

River and stream edges; seasonally wet grassland; weed of rice fields and abandoned shambas: 900−1850m alt.

Easily recognized by its glabrous glumes and non-hairy culm and leaves.

F. angolensis (C. B. Clarke) Lye; Mitt. Bot. Staatssamml. München 13: 354, 1997; Kew Bull. 53: 198−199, 1998; Clarke & Mannheimer, Cyper. Namibia: 94, 79 (map), 1999; Archer & Craven, Cyper. Namibia: 22, 2004; Fl. Trop. E. Afr., Cyper.: 17, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 47, 1983.

bas.: *F. glomerata* Lam. var. *angolensis* C. B. Clarke

syn.: "*F. ciliaris* (L.) Roxb. var. *angolensis* Schinz ", nom. nud. (C. B. Clarke in Fl. Trop. Afr. 8: 466, 1902).

Annual herb; culm terete, 9−39 cm tall, 1−3 mm ∅, but c. 4 mm in ∅ across the sheath, densely pubescent; leaf sheath and ligule hairy; blade 4−18 cm long, 0,2−0,9 cm wide, densely pubescent; inflorescence a digitate cluster of spikelets, each 3−7 mm long, but extending to 18 mm when mature, 1−4 mm ∅, terete, many-flowered.

Temporary waterholes; ditches; seepage areas; streamsides; seasonally wet grassland; 750−1750 m alt.

Namibia.

Very closely related to *F. claviseta* which has, however, a much shorter excurrent midrib on glumes, and leaves hairy along the margin only.

F. bidgoodiae Hoenselaar & Muasya, Kew Bull. 64: 685, 2010 (ill. p. 686).

Tufted annual herb to 40 cm tall, with 2−7 culms per plant; culms 17−32 cm long, 1,6−1,8 mm ∅, terete, glabrous near to roots and hairy towards apex; leaves to 27 cm long; basal sheaths glabrous to densely hairy, 2−4 cm long; upper sheaths 3,5−5 cm long; blade 13,5−22 cm long, 4,8−6 mm wide, pilose on surface and margins; inflorescence a panicle with 3−5 digitate clusters of spikelets from the uppermost leaf-axils; peduncles to 5,2 cm long, pilose; spikelets ovate, 3,5−5,7 × 2,2−3 mm.

Open *Acacia* bushland on sandy-loamy soil near dried-out waterhole; 725 m alt.

Known from only one specimen, discovered in 2006.

Near *F. claviseta*; also falls within the *F. ciliaris* complex including *F. zambesiaca*, *F. angolensis*, *F. sagittata*; also similar to *F. somaliensis*.

F. boreocoerulescens Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 100, 1995; Candollea 51: 2−3 (nutlet), 1996.

Perennial herb with a horizontally creeping rhizome 2−3 mm ∅ with culms at c. 5 mm intervals, rarely crowded; culms 20−40 cm long, 1−2 mm ∅, triangular, minutely pubescent with mostly appressed hairs; leaves 4−6 and spaced all along the stem, the lowermost with a short triangular limb only, other with well developed blades; largest blade 10−20 cm long, 3−5 mm wide, minutely hairy on margin; sheaths glabrous; inflorescence a terminal cluster of 3−10 crowded spikelets, each 6−10 × 4−5 mm, ovate-elliptic.

Open grassy area on clay and in clay flush; also on clay on limestone with evergreen bushland with *Buxus*, *Cadia*; 1350−1500 m alt.

Near *F. coerulescens* Steud. from Namibia, S. Africa, Zimbabwe.

F. bullifera J. Raynal & Roessler; Clarke & Mannheimer, Cyper. Namibia: 94, 1999; Archer & Craven, Cyper. Namibia: 22, 2004. – Icon.: Mitt. Bot. Staatssamml. München 13: 359, 1977.

Annual pubescent herb; culms several, 20−50 cm tall, slender, trigonous; leaf sheaths tubular, 1−3 cm long; blade linear, 3−11 cm × 3−5 mm; inflorescence of 2−3 corymbose panicles; spikelets densely subcapitate, each 6−10 × 2−3 mm, almost conical. *Only 1 inner hypogynous scale* asymmetrically placed in front of one of the dorsal faces of the nutlet (quite unique in the genus).

Ecology unknown.

Namibia, S. Africa.

"This species must be very rare: though apparently living in a vast territory… it does not seem to have been collected for the last 80 years, unless… still hidden under *F. ciliaris* in several herbaria; in the same way it should be looked for in the field…" (Raynal & Roessler, Mitt. Bot. Staatssamml. München 13: 356, 1977).

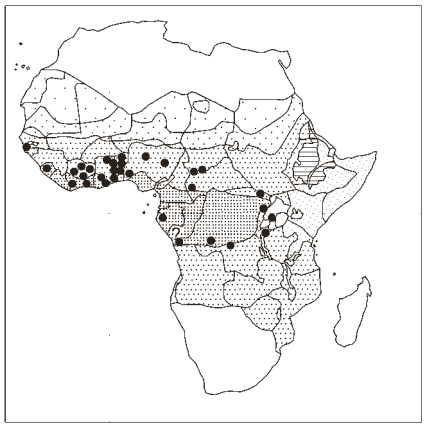
F. ciliaris (L.) Roxb.; Pires de Lima in Bol. Soc. Brot., Sér. 2, 2: 131−132, 1924 (as *F. glomerata*); Webbia 27: 461, 1972; Bot. Not. 130: 319, 1977; Kew Bull. 53: 199−200, 1998; Clarke & Mannheimer, Cyper. Namibia: 94, 79 (map), 1999; Simpson & Inglis in Kew Bull. 56: 319, 2001; Prasad & Singh, Sedges Karnataka (India): 221−223, 2012; Archer & Craven, Cyper. Namibia: 22, 2004; Akoègninou & al., Fl. analyt. Bénin: 102, 2006; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Lisowski, Fl. Rép. Guinée 1: 402, 2009; Dobignard & Chatelain, Index, synon. fl. Afr. N. 1: 121, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 105, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 76, 1974; Haines & Lye, Sedges & rushes E. Afr.: 46, 1983; Berhaut, Fl. ill. Sénégal 9: 249, 1988; Cook, Aquat. pl. book, ed. 2: 77, 1996; Gordon-Gray, Cyper. Natal: 98, 1995 (nutlet); Fl. Eth. & Eritrea 6: 396, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 61, 2002; Cook, Aquat. & wetland pl. south. Afr.: 103, 2004; S. Afric. J. Bot. 70: 590, 2004 (flower ontogeny); Boulos, Fl. Egypt 4: 368, 2005; Fl. Trop. E. Afr., Cyper.: 18, 2010; Fl. China, Ill. 23: 235, 2012; Illustrated Cyperaceae of Korea: 409, 2016; Browning & Goetghebeur, Sedge genera Africa & Madag.: 50, 2017.

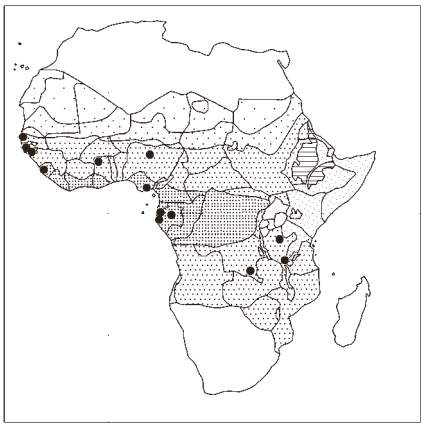
bas.: *Scirpus ciliaris* L.

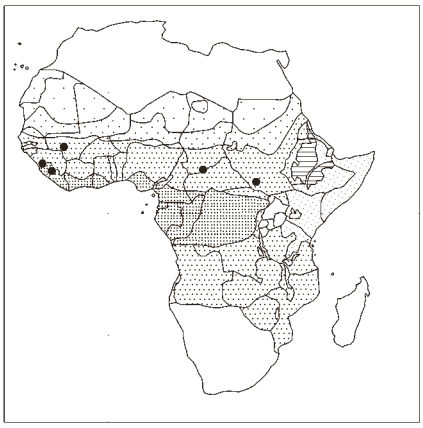
Annual herb with terete culms 11−60 cm long, 2−5 mm ∅, but c. 7 mm in ∅ across the sheath, densely pubescent, or glabrous except just below the inforescence; sometimes forming small clumps or tufts; leaf sheath and ligule hairy; blade 5−14 cm long, 0,3−0,8 cm wide, densely pubescent; inflorescence a digitate cluster of spikelets, each 5−9 × 2−4 mm, terete, many-flowered; perianth segments absent or 6 in 2 whorls.

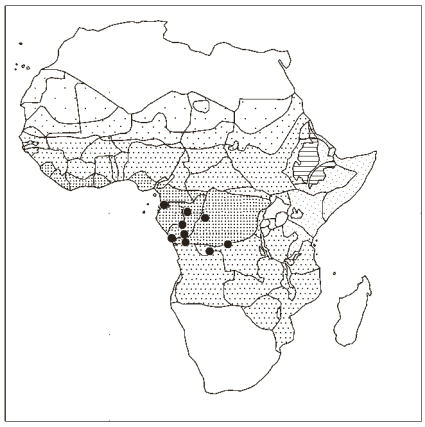
Seasonally wet grassland or sands; gallery; marsh; open wet and swampy places, river banks, roadside ditches, margins of ponds, edges of permanent coastal pools; springs often within *Brachystegia* woodland on black cotton soil; coastal streams; hollows in coastal dunes; moist places in *Combretum*, *Terminalia* woodland; weed in rice fields; coco nut plantations; sometimes growing in mats of floating vegetation; 0−600 m alt.

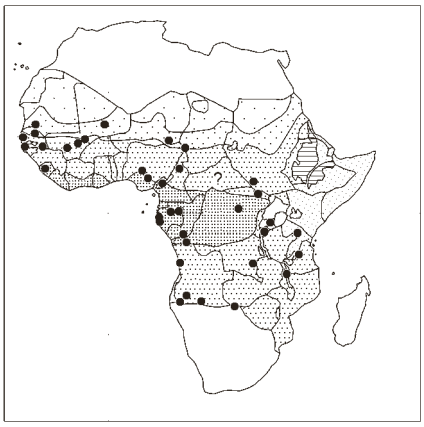
Egypt; Namibia, S. Africa, Botswana, Swaziland; tropical & subtropical Old World: S & SE Asia from Pakistan, Nepal, India, Sri Lanka, Indo-China, Malaya, Korea, China, Indonesia, Japan, Philippines; Australia. – Not yet found in Gabon (fide Fl. Gabon 44, Cyper.: 150, 2012; but stated as present there by Velayos & al., Fl. Guinea Ecuat. 11: 112, 2014).

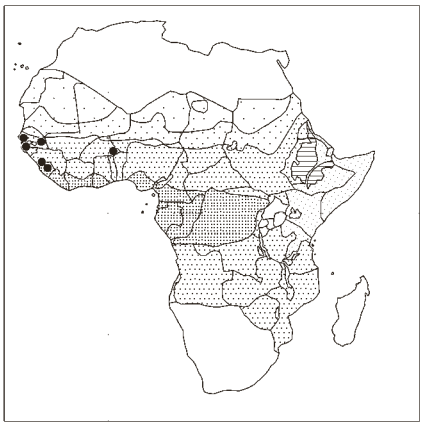

Fimbristylis scabrida

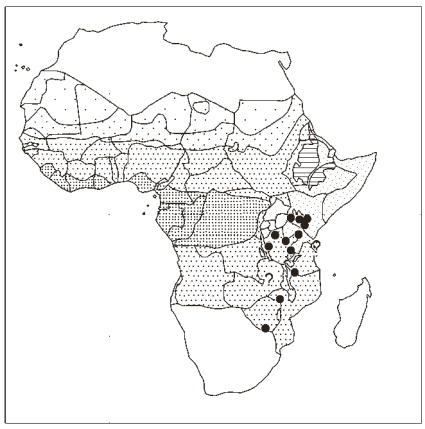

Fimbristylis schoenoides

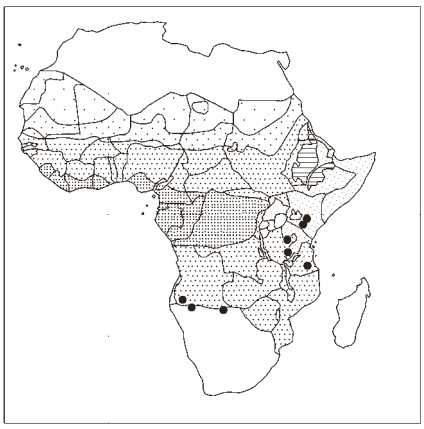

Fimbristylis schweinfurthiana

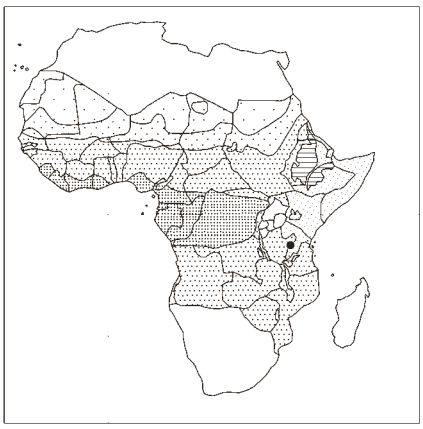

Fimbristylis splendida

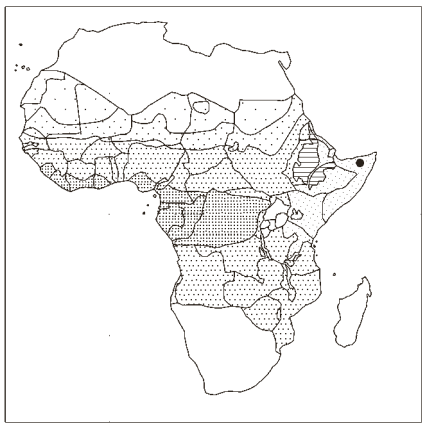

Fimbristylis squarrosa var. squarrosa

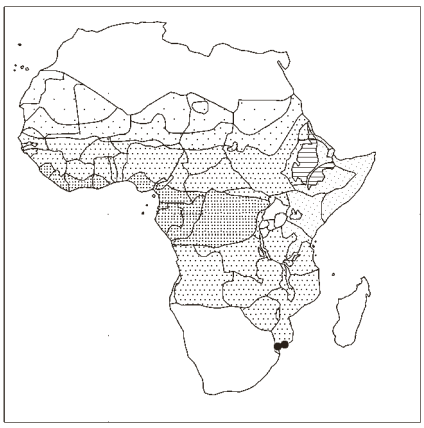

Fimbristylis striolata

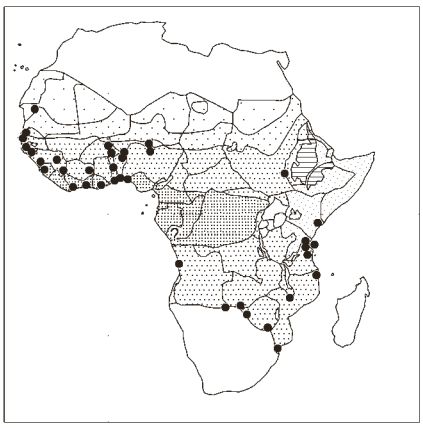

Fuirena abnormalis


Fuirena angolensis


Fuirena bidgoodiae


Fuirena boreocoerulescens


Fuirena bullifera


Fuirena ciliaris

Comprises 2 forms: – fa**. ciliaris** [syn.: *Scirpus ciliatus* Rottb.; *Fuirena glomerata* Lam.; *F. ciliaris* (L.) Roxb. var. *ciliaris* (L.) Gordon-Gray 1995; *F. ciliata* Leprieur ex Steud. 1855; *F. canescens* Pers. 1805], with perianth segments present; – fa. **apetala** (Wingf.) Lye [bas. *F. ciliaris* var. *apetala* Wingf.], with perianth segments present.

F. claviseta Peter; Mitt. Bot. Staatssamml. München 13: 356−357, 1977; Kew Bull. 53: 198, 1998; Fl. Trop. E. Afr., Cyper.: 16−17, 2010. – Icon.: Napper in J. E. Africa Nat. Hist. Soc. 25/1/110: 21, fig. 8, 1965; Haines & Lye, Sedges & rushes E. Afr.: 48, 1983.

syn.: *F. glomerata* Lam. var. *angolensis* sensu Peter, non C. B. Clarke

Annual herb; culm terete, 30−75 cm tall, 2−5 mm ∅, but 6 mm in ∅ across the sheath, glabrous; leaf sheath pubescent or glabrous, ligule hairy; blade 5−18 cm long, 0,4−0,8 cm wide, glabrous, but margins with long translucent hairs; inflorescence a digitate cluster of spikelets, each 0,5−1,6 cm × 2−4 mm, terete, many-flowered.

Elaeis swamp; river and stream banks; drainage ditches; 0−500 m alt.

Very closely related to *F. angolensis* (swollen hypogynous scales).

F. coerulescens Steud., excl. var. *glabrescens* Schönl. (= *F. ecklonii* Nees); Clarke & Mannheimer, Cyper. Namibia: 94, 79 (map), 1999; Archer & Craven, Cyper. Namibia: 22, 2004. – Icon.: C. B. Clarke, Ill. Cyperaceae: pl. 59/3−4, 1909; Gordon-Gray, Cyper. Natal: 98 Fig. 38/B, E, 1995 (nutlet); Forbes in S. Afric. J. Bot. 63: 515−516, 1997.

syn.: *Scirpus coerulescens* (Steud.) Kuntze; *Fuirena gracilis* Kunth 1837, nom. illeg., non Spreng. 1818; *F. mollicula* Kunth; *F. glauca* Boeckeler ex C. B. Clarke; *F. enodis* C. B. Clarke 1898; *F. subdigitata* C. B. Clarke; *F. reticulata* Kük.; *Scirpus enodis* (C. B. Clarke) T. Koyama

Erect perennial herb, 25−98 cm high; rhizome 3−9 mm ∅; culms contiguous or to 2 cm apart on rhizome, 1−3 mm ∅ near base, sharply triangular to trigonous, glabrous throughout or puberulous at apex; leaves cauline, sometimes borne only on lower part of culm; sheath occasionally puberulous; ligule glabrous or puberulous in parts or sometimes puberulous all over; blade 8−31 cm long, 2−5 mm wide, rarely glabrous, usually puberulous in midrib region above, ciliate on margins; inflorescence a terminal or pseudolateral cluster of up to 12 sesssile to shortly stalked spikelets, each 0,6−1,9 cm × 2,5−4 mm, terete or narrowly ellipsoid, or narrowly ovoid.

Ecology not recorded.

Very variable morphologically, especially in flower structure (comprising outer and inner hypogynous whorls; Gordon-Gray, o.c.).

Namibia, S. Africa ("wide distribution in southern sub-Saharan Africa: its northermost limits are not yet fully established"; Forbes, o.c.); Madagascar.

"Identification is difficult, especially if mature achenes are not present" (Gordon-Gray, l.c.).

F. ecklonii Nees, Linnaea 10: 143, 1835; Xanthos & Browning in Scripta Bot. Belg. (AETFAT XX): 472, 2014. – Icon.: C. B. Clarke, Illustrations Cyperaceae: pl. 59 fig. 10, 1909 (detail); P. L. Forbes, A revision of Fuirena Rottb. (Cyperaceae) in southern Africa: figs. 49−50, 1980; Gordon-Gray, Cyper. Natal: 98, 1995 (nutlet).

syn.: *F. coerulescens* Steud. var. *glabrescens* Schönl.; See also Remark below.

(Description taken from the sources cited above). Perennial herb 20−76 cm tall with a woody rhizome 2−3,5 mm ∅, usually excurrent with erect culms at 2−15 mm intervals, scale leaves hirsute(-pubescent); culms triquetrous, 1,5−2 mm ∅ near base, pilose or pilose distally and sparsely pilose-glabrescent proximally, or hairs present mainly or only in distal part of each internode and/or at angles; culms leafy throughout; leaves numerous, (6−15 upper leaves with long blades, lower with blades reduced), sheaths usually covering culms so that internodes are not visible (easiest means of identification); leaf sheaths pilose, hairs sometimes present mainly or only at mouth and/or at angles and/or near nodes; ligule pilose, hairs present over entire surface or in parts only, mouth ciliate; blade sub-erect to spreading, (upper leaves) 8−20 cm long, 4−7 mm wide, lower with blades reduced, pilose, less densely so on upper surface or glabrous except on midrib, midrib projecting on lower surface, apex of blade attenuate; inflorescence usually terminal with spikelets shortly pedicellate in corymbose cluster or sessile in head, or sometimes paniculate, 5−14 cm long with 1(−2) lateral branches at 1(−2) nodes below terminal portion, each lateral branch with 1-few spikelets, peduncles pilose to glabrescent; indumentum of bracts like that of leaves; spikelets ovoid-ellipsoid, squarrose, 6−13 × 3−5 mm; glumes not ranked or occasionally 5-ranked, uniformly pubescent, all fertile or lowest 2 sterile, fertile glumes 4,6−6,2 mm long incl. awn (1,1−3 mm long, usually recurved), the 3 clawed scales (inner) equal or slightly shorter than mature nutlet; outer hypogynous bristles absent or 3, reduced or about as long as scale claw; inner hypogynous scales 3, with claw up to half as long as blade which is ovate, obovate or obtriangular, margins irregularly lobed, rarely with few elongate papillae on lobes, blade apex thickened, awn to blade subterminal, developed from inner adaxial face; nutlet (stalk and beak included) 1,6−2,5 mm long, obovoid, trigonous in cross section, longitudinally ridged at angles, stipitate, with beak 0,5 mm long, slender, conical, papillate; pericarp epidermal cells polygonal, somewhat irregularly arranged, often becoming transversely elongate sub-hexagonal towards beak, anticlinal walls straight. – This complete description of *F. ecklonii* is taken for the most part from P. L. Forbes 1980, a rare publication (fide S. Jansen Van Rensburg in litt. 24 March 2014).

Wetland; seepage areas; permanent water of shallow streamlets; vleis (S. Africa); collection from NW Province of Zambia with no precise locality or ecology; 90−950 m alt. (S. Africa, but at higher altitudes in Zambia).

S. Africa.

Remark: Forbes (1980: 243) cites *F. mollicula* Kunth 1837, var. β incl. syntypes Drège 4340, 2039, and also *F. coerulescens* Steud. p.p., and *F. coerulescens* Steud. var. *glabrescens* Schönl. as synonyms; and so does Gordon-Gray, l.c. According to the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, *F. mollicula* Kunth is a synonym of *F. coerulescens* Steud.

Often confused with *F. coerulescens* which has, however, the leaves in lower part of culm, and glumes with ciliate edge, and mature nutlet 1,3−1,6 mm long; awn to blade (scale) terminal, directly excurrent (cf. Gordon-Gray, l.c.).

F. leptostachya Oliv.; Muasya in Kew Bull. 53: 197, 1998; Clarke & Mannheimer, Cyper. Namibia: 94, 79 (map), 1999; Akoègninou & al., Fl. analyt. Bénin: 102, 2006; Fl. Trop. E. Afr., Cyper.: 14−15, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 50, 2012 (map by Schmidt & al. in Phytotaxa 304: 106, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Oliver, Trans. Linn. Soc. London 29: pl. 108, 1875; Lowe & Stanfield, Fl. Nigeria: sedges: 76, 1974; Haines & Lye, Sedges & rushes E. Afr.: 45, 1983; Nord. J. Bot. 3: 242, 1983; Troupin, Fl. Rwanda

4: 453, 1988; Lowrey & Wright, Fl. Witwatersrand 1, Monocot.: 49, 1987 (glumes); Gordon-Gray, Cyper. Natal: 98, 1995 (nutlet); Fl. Eth. & Eritrea 6: 392, 395, 1997; Vrijdaghs & al. in S. Afric. J. Bot. 70: 592, 2004 (flor. morphol.).

Annual herb; culm terete, 7−43 cm long, 1−2 mm ∅ (but c. 3 mm ∅ across the sheath), densely pubescent; leaf sheath and ligule hairy; blade 6−16 cm long, 0,3−0,7 cm wide, densely pubescent; inflorescence an irregular terminal cluster of spikelets, each 4−12 × 2−4 mm, terete, many-flowered; perianth segments absent or 6 in 2 whorls (outer 3 are smooth bristles).

Seasonally wet (areas in) grassland; wooded grassland and bushland; wet flushes on granite rocks; weed in rice fields; seasonal swamp in *Brachystegia* woodland; swamp and lake edges; swamp with *Cyperus articulatus*; seepage zones on shallow soils; wooded sandy marshes; in masses in rather damp sunny wooded places covered with a dull blood-red *Seytonema* (filamentous cyanobacteria); 70−2050 m alt.

Namibia, S. Africa, Botswana.

Comprises 2 forms: – fa. **leptostachya** [syn.: *F. leptostachya* var. *leptostachya* in Gordon-Gray, Cyper. Natal : 100, 1995], with perianth segments present; – fa. **nudiflora** Lye [syn.: *F. leptostachya* var. *nudiflora* C. B. Clarke 1902, nom. nud.; *F. schweinfurthiana* Boeckeler; *F. pygmaea* Welw. ex Ridl.; *F. moiseri* Turrill; *F. glomerata* Boeckeler in Flora 62: 566, 1879, non Lam.; *F. ciliaris* (L.) Roxb. sensu Podlech 1967: 26 p. min. p.; *Scirpus nudifructus* Kük.], with perianth segments lacking.

Very similar in facies to *F. ciliaris*; the most reliable morphological difference is the number of stamens: 2 per floret in *F. leptostachya*, 3 in *F. ciliaris*. *F. leptostchya* also has narrower spikelets and shorter achenes.

Close to the Indian *F. trilobites* C. B. Clarke.

Gordon-Gray, Cyper. Natal: 100, 1995, considers *F. microcarpa* Lye as a synonym of *F. leptostachya* fa. *nudiflora*.

F. microcarpa Lye; Muasya in Kew Bull. 53: 196−197, 1998; Fl. Trop. E. Afr., Cyper.: 14, 2010; Gordon-Gray, Cyper. Natal: 100, 1995 as a synonym under "*F. leptostachya* var. *nudiflora*". – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 44, 1983.

Annual herb; culm terete, 14−21 cm tall, 1 mm ∅ (but c. 2 mm in ∅ across the sheath), densely pubescent, or glabrous except just below inflorescence; leaves cauline; sheath and ligule hairy; blade 5−8 cm long × 0,5−2 mm wide, densely pubescent; inflorescence a digitate cluster of spikelets, each 2−4 × 1−2 mm, terete, many-flowered.

Seasonally wet grassland; seepage areas in *Brachystegia* woodland; weed in rice fields; 30−200 m alt.

Haines & Lye, l.c., and Muasya in Kew Bull., l.c., refer to collections from coastal Mozambique, but this is not confirmed by the treatment in Fl. Trop. E. Afr., l.c.

F. mutali Muasya & Nordal, Fl. Trop. E. Afr., Cyper.: 16, 2010.

Annual herb; culm 10−30 cm tall; leaf sheath hairy; lowest blades reduced to lobes, upper blades to 12 cm long, hairy; ligule hairy to almost smooth; inflorescence a cluster of 3-many spikelets; spikelets sessile or stalked, 4−7 × 2−3 mm, terete, many-flowered, hairy.

Seasonal seepage; 400−700 m alt.

Closely affiliated to *F. ciliaris*, but differs in perianth morphology: outer perianth bristles have retrorse spines in *F. mutali* but they are smooth or ± scaberulous in *F. ciliaris*; the laminae of the inner segments share the presence of 3 veins, but differ in shape which is sagittate in *F. mutali* (but square in *F. ciliaris*).

(**F. nyasensis** Nelmes) Mem. New York Bot. Gard. 9: 98−99, 1954.

Densely tufted herb; culms 80−90 cm tall, c. 2 mm ∅ at base, prominently but obtusely trigonous, purplish towards base, glabrous above; lower sheaths almost without blades, sparingly hairy, upper ones with long blades 3−5 mm wide; inflorescence of 2 digitate clusters of spikelets; spikelets 5−9 mm long, 3,5−4 mm ∅, many-flowered; glumes oblong-ovate, 2,5−2,75 × 1,75−2 mm, excl. mucro; perianth segments 6.

Marshy ground in *Brachystegia* woodland; 1400 m alt.

Collected in C Malawi, Kota-kota district, Nchisi Mt (13°21'S × 34°01'E) in 1946.

Near *F. stricta* subsp. *chlorocarpa*, but inflorescence with longer spikes (3,5−5 cm long) and larger and paler glumes. – Probably a form of *F. stricta* subsp. *chlorocarpa*. Not mapped.

F. obcordata P. L. Forbes in S. Afric. J. Bot. 52: 238, 1986, nom. nov. inval.; ibid. 53: 185, 1987; Xanthos & Browning in Scripta Bot. Belg. 52 (AETFAT XX, S. Africa): 472, 2014. – Icon.: C. B. Clarke, Ill. Cyper.: pl. 59 fig. 2, 1909 (as *F. microlepis*); Forbes in S. Afric. J. Bot. 52: 239, 1986; Gordon-Gray, Cyper. Natal: 101, 1995 (nutlet).

syn. (according to Forbes, o.c.: 238): *F. microlepis* Kunth, Enum. plant. 2: 182, 1837, quoad specim. Drège 4339, descr. & Drège 4338 excl.; *F. glabra* Eckl. ex Krauss, Pflanzen des Cap- und Natal-Landes (Cyperaceae) in Flora 48: 757, 1845, non Kunth, Enum. plant 2: 182, 1837 (syntypes: Krauss 191, 59); *F. pubescens* (Poir.) Kunth in Boeckeler, Linnaea 37: 104−105, 1871, and Cyper. Herb. Berlin 1: 640−641, 1871, quoad specim. Drège 4339; *F. microlepis* sensu C. B. Clarke in Dur. & Schinz, Consp. fl. Afric. 5: 647, 1894, and Thiselton-Dyer, Fl. Cap. 7: 262, 1898, and C. B. Clarke, Ill. Cyper.: pl. 59 fig. 2, 1909; and sensu Schönland, S. Afric. Cyper., Mem. Bot. Surv. S. Africa 3: 52, 1922, excl. specim. Sim 2712; and sensu Gordon-Gray in Ross, Fl. Natal, Mem. Bot. Surv. S. Africa 39: 108, 1972; non Kunth, Enum. pl. 2: 182, 1837, excl. specim. Drège 4339; *F. coerulescens* Steud. var. *glabrescens* Schönl., S. Afric. Cyper. in Mem. Bot. Surv. S. Africa 3: 51, 1922, quoad specim. Wood 9969.

Perennial herb with strong rhizome 4−6 mm ∅; culms contiguous or up to 1,5 cm apart on rhizome, 0,5−1,4 m tall, 3,5−5,5 mm ∅, 3-sided, glabrous; leaf sheaths usually sparsely to densely hirsute; ligule a tubular membranous collar, 1−1,3 mm long, glabrous or puberulous; blades to 20−29 cm long, 5−8 mm wide, (sub)erect, flat, margins often slightly revolute when dry, sometimes sparsely strigose below and on margins; inflorescence a terminal cluster of 1−8 sessile, subsessile and pedunculate heads of spikelets, sometimes also with a lateral partial inflorescence of 1−3 heads; heads compact, to1−1,5 cm ∅; inflorescence stems glabrous to pubescent; spikelets 5−8 mm long, ovoid, light-brown.

Shallow water; very wet swamps; usually in a sandy organically rich substrate; 50−1000 m alt.

S. Africa, Caprivi Strip. – In Zambia: Mutinondo Wilderness Reserve (Xanthos & Browning, l.c.). Also in Mozambique.

Resembling *F. umbellata* which has, however, 5-angled leaf sheaths and culms, and regularly 5-nerved leaves, never hairy.

F. ochreata Nees ex Kunth; Mitt. Bot. Staatssamml. München 13: 357, 1977; Muasya in Kew Bull. 53: 200, 1998; Fl. Trop. E. Afr., Cyper.: 20, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 48−49, 1983.

syn.: *F. calolepis* K. Schum.; *Scirpus calolepis* (K. Schum.) Kuntze; *Fuirena cinerascens* Ridl. in Trans. Linn. Soc.,

Ser. 2, Bot. 2: 161, 1884, nom. nud., and C. B. Clarke in Durand & Schinz, Consp. fl. Afr. 5: 648, 1895, nom. nud., and K. Schum. in Engler, Pflanzenw. Ost-Afrikas C: 126, 1895, nom. nud., and Bojer ex C. B. Clarke in Fl. Trop. Afr. 8: 467, 1902; *F. cristata* Turrill

Perennial herb; culms arising at 7 mm intervals on horizontal rhizome 8 mm ∅; culm *terete*, 25−69 cm tall, 2−4 mm ∅ (but 6 mm ∅ across the sheath), densely pubescent or glabrous except just below inflorescence; leaf sheath hairy, ligule hairy at rim; blade 5−16 cm long, 0,5−1,2 cm wide, densely pubescent; inflorescence a subdigitate cluster of spikelets, each 7−11 × 2−4 mm, terete, many-flowered.

Seasonally wet grassland; edge of permanent swamp and stream; often growing in water to 30 cm depth; damp wooded meadows; 0−1200 m alt.

Madagascar. – Also in NE Mozambique, Palma (10°48'S × 40°29'E) according to Pires de Lima in Bol. Soc. Brot., Sér. 2, 2: 130−131, 1924 (as *F. cinerascens*).

(***F. oedipus*** C. B. Clarke) = **F. umbellata** Rottb.

F. pachyrrhiza Ridl.; Muasya in Kew Bull. 53: 194, 1998; Fl. Trop. E. Afr., Cyper.: 13, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 51, 1983 (as *F. pubescens* var. *major*); Gordon-Gray, Cyper. Natal: 101, 1995 (nutlet); Pooley, Field guide wild flow. Kwazulu-Natal: 565, 1998.

syn.: *F. pubescens* (Poir.) Kunth var. *major* Lye; *F. macrostachya* Boeckeler

Perennial herb; culms arising at c. 1,4 cm intervals from a horizontal rhizome 2−4 mm ∅; culm trigonous, 20−95 cm tall, 2−4 mm ∅ (but c. 6 mm ∅ across the sheath), *minutely* hairy, or glabrous except just below the inflorescence; leaf sheath glabrous or *minutely* hairy, ligule hairy; blade 0,5−2,6 cm long, 0,5−0,9 mm wide, *minutely* pubescent; inflorescence a subdigitate cluster of spikelets, each 0,7−2,4 cm × 3−7 mm, terete, many-flowered; glumes bluish-grey with mucro 1,5−2,5 mm long.

Seasonally wet grassland; seasonal and permanent swamps and swamp edges; seepage areas; spongy woods; wooded marshy places with *Isoetes*; 15−2250 m alt.

S. Africa, Botswana, Swaziland.

In Flora of Ethiopia & Eritrea 6: 395, 1997, *F. pachyrrhiza* and *F. welwitschii* are treated as synonyms under *F. pubescens*.

F. pubescens (Poir.) Kunth, excl. var. *buchananii* (Boeckeler) C. B. Clarke (= *F. welwitschii*) and var. *major* Lye (= *F. pachyrrhiza*); Lowrey & Wright, Flora Witwatersrand 1, Monocot.: 50, 1987; Muasya in Kew Bull. 53: 193, 1998; Clarke & Mannheimer, Cyper. Namibia: 94, 79 (map), 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Lisowski, Fl. Rép. Guinée 1: 402, 2009; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 121, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 111, 2015. – Icon.: Bot. Not. 127: 111, 1974; Haines & Lye, Sedges & rushes E. Afr.: 50, 1983; Troupin, Fl. Rwanda 4: 453, 1988; Gordon-Gray, Cyper. Natal: 101−102, 1995; Fl. Eth. & Eritrea 6: 396, 1997; Fl. Pakistan 206, Cyper.: 81, 2001; Vrijdaghs & al. in S. Afric. J. Bot. 70: 589, 2004 (flower development); Cook, Aquat. & wetland pl. south. Afr.: 104, 2005; Amini Rad & al. in Iran. J. Bot. 14: 109, 2008; Heath & Heath, Field guide pl. north. Botswana: 555, 2009; Fl. Trop. E. Afr., Cyper.: 12, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 50, 2017.

bas.: *Carex pubescens* Poir.

syn.: *Scirpus pubescens* (Poir.) Lam.; *Isolepis pubescens* (Poir.) Roem. & Schult.; *Fuirena* sp. affinis *pubescens* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 326, 1972.

Perennial tufted herb; culms arising at 1 cm intervals from a well-developed horizontal rhizome 4 mm ∅; culm trigonous, 0,23−1,16 m tall, 2−4 mm ∅ (but c. 6 mm ∅ across the sheath), entirely pubescent, or glabrous except just below inflorescence; leaf sheath glabrous or pubescent, ligule hairy; blade 7−25 cm long, 0,5−0,9 cm wide, glabrous, or only hairy beneath or entirely pubescent; inflorescence a subdigitate cluster of spikelets, each 4−11 × 3−5 mm, terete, many-flowered; perianth segments present or absent; nutlet white.

Seasonally wet grassland; edge of swamps and streams; dry forest; more open parts of *Miscanthus* swamp; *Papyrus* swamp and lake edges; flood zone; temporary swamp; scrambling among tall herbs of marshy meadows on river; rice fields; 850 (? and less) – 2700 m alt.

Namibia, Botswana, S. Africa, Swaziland, Lesotho; Madagascar; Mascarenes; Portugal, S Europe; N Africa from Morocco to Tunesia, Egypt; Turkey, Lebanon, Yemen (Wood, Handbook Yemen flora: 332, 1997), Afghanistan E-wards to Iran, Pakistan, W Himalaya, NW India; not in India, Karnataka: misidentification fide Prasad & Singh, Sedges Karnataka: 228, 2002. – Sometimes anciently introduced: Corsica (Candollea 54: 390−391, 1999). – One collection from Nigeria, Kano (Lowe & Stanfield, Fl. Nigeria: Sedges: 77, 1974). – In India, *F. pubescens* is largely replaced by the related *F. wallichiana* Kunth (Fl. Pakistan, l.c.).

Plants very variable in height, robustness and in extent of tufting, depending upon habitat conditions. Three varieties are (sometimes) recognised, but "difficult to distinguish" (Darbyshire & al., l.c.): – var. **abbreviata** Lye, with mucro to glumes 0,5−0,7 mm long, in Uganda; – var. **pubescens** (syn.: *Sparganium pubescens* Poir. 1789, nom. inval.; *Carex poiretii* J. F. Gmel.; *Scirpus ciliaris* Pers. 1805, nom. illeg., non L.; *S. libanoticus* Post; *Fuirena microlepis* Kunth; *F. annua* Royle); with mucro to glumes 1,2−2 mm long; widespread; – var. **villosula** Kük., in Zambia.

F. pubescens is recognized by: well-developed elongate rhizome; indumentum of uniform short patent hairs limited to small portions of the plant: culms, nodes, midribs and margins of leaf blades, inflorescence.

Gordon-Gray (Cyper. Natal: 102−103, 1995) considers *F. buchananii* and *F. welwitschii* as synonyms.

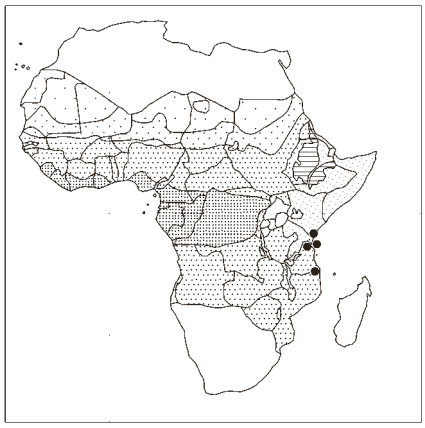
F. sagittata Lye; Muasya in Kew Bull. 53: 197−198, 1998; Fl. Trop. E. Afr., Cyper.: 16, 2010. – Icon.: Bot. Not. 127: 110, 1974; Haines & Lye, Sedges & rushes E. Afr.: 46, 1983.

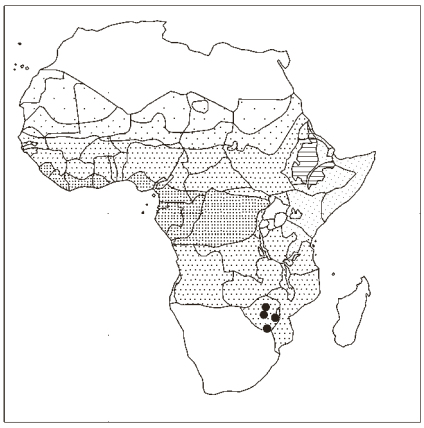
Annual herb; culm terete, 6−45 cm tall, 1−2 mm ∅ (but c. 3 mm ∅ across the sheath), densely pubescent; leaf sheath and ligule hairy; blade 4−11 cm long, 0,5−0,6 cm wide, densely pubescent; inflorescence an irregular terminal cluster of spikelets, each 0,4−1,2 cm × 2−3 mm, terete, many-flowered; glumes 1,7−2,3 mm long with short and long hairs; perianth segments 6, inner ones stalked.

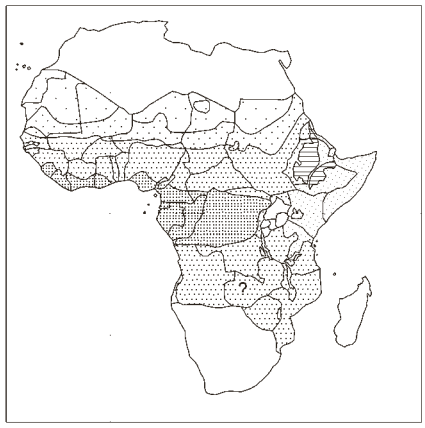
Seasonally wet grassland; streamsides; waterholes; marshy areas in cultivations; 800−1900 m alt.

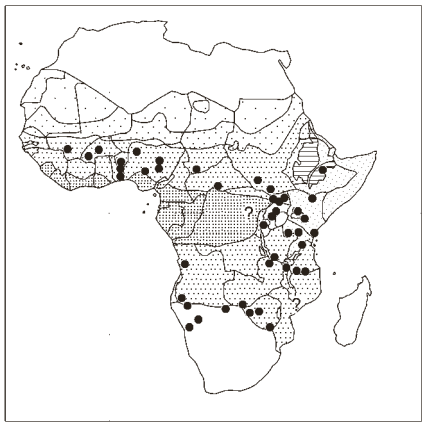
Similar to *F. leptostachya* but the nutlets are larger. It is perhaps a form of *F. leptostachya*. Also very similar to the Indian *F. trilobites*. A revision of this group of annual species is needed to determine the status of these taxa.

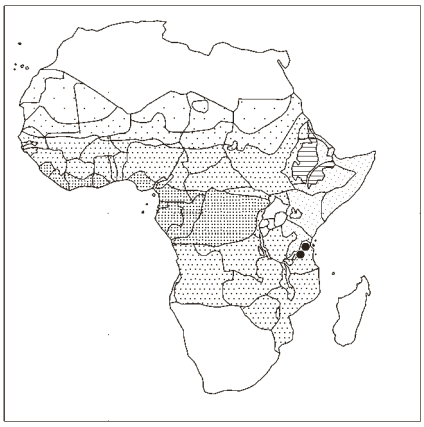
The species epithet, *sagittata*, refers to the form of the inner 3 perianth segments that are arrow-shaped (sagittate).

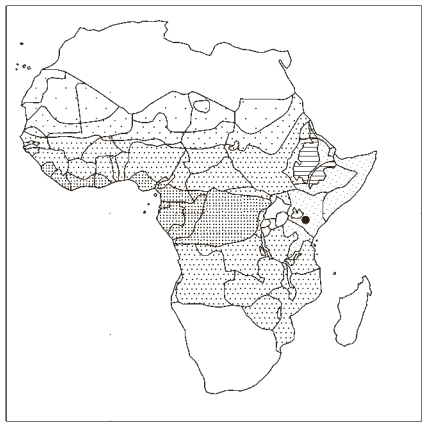

Fuirena claviseta

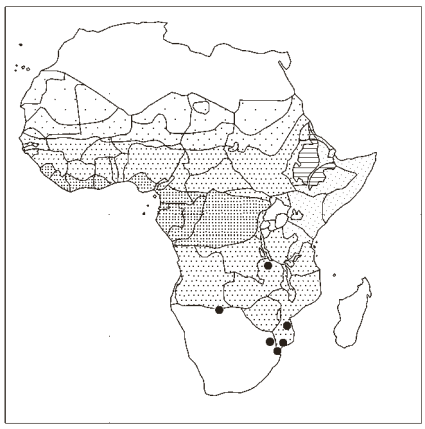

Fuirena coerulescens

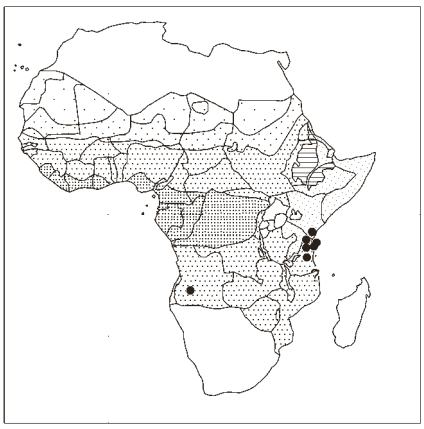

Fuirena ecklonii

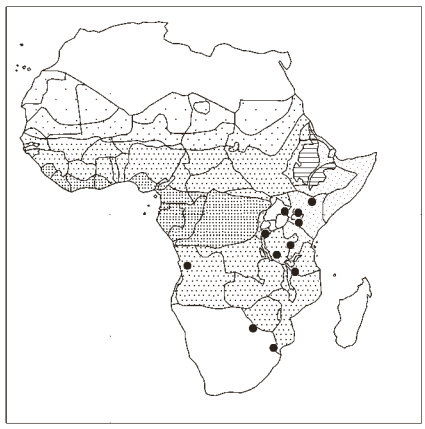

Fuirena leptostachya

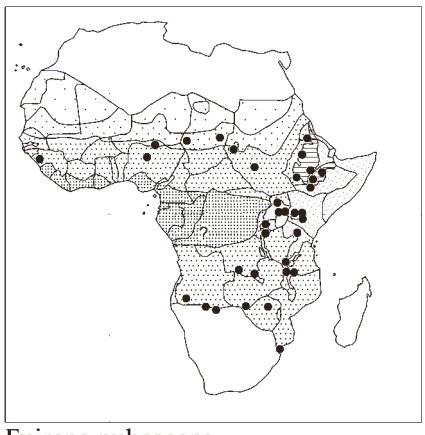

Fuirena microcarpa

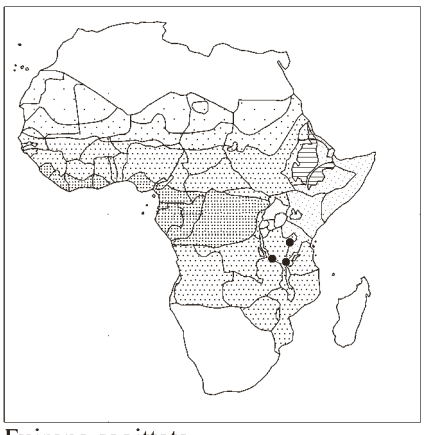

Fuirena mutali

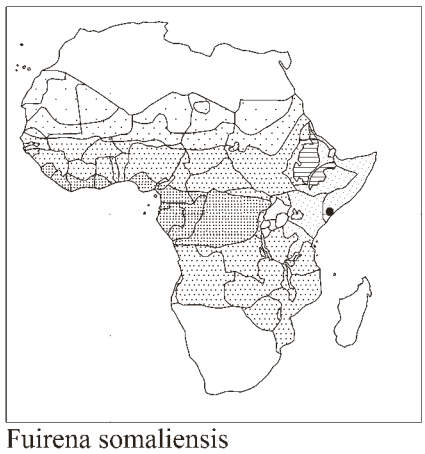

Fuirena obcordata


Fuirena ochreata


Fuirena pachyrrhiza


Fuirena pubescens


Fuirena sagittata


Fuirena somaliensis

F. somaliensis Lye in Thulin, Fl. Somalia 4: 100−101, 1995, nom. inval. (cf. Thulin, Fl. Somalia 3: 585, 2006); Nord. J. Bot. 24: 395, 2007 (validation); Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 102, 1995; Nord. J. Bot. 24: 396−397, 2007.

Tussocky annual herb with a small root system; culms few, clustered, 15−25 cm long, 1−3 mm ∅, angular, short hairy with spreading whitish hairs above, glabrous below; leaves c. 4 per culm, the lower without blade, the upper with flat blade 10 cm long, 4−7 mm wide, densely hairy; ligules and sheaths densely hairy; inflorescence with sessile or stalked clusters of 3-many spikelets, each 4−9 × 3−4 mm, ovate-lanceolate, variegated green and brown, 40−80-flowered, with numerous spirally arranged glumes with hairy mucro 1−1,5 mm long.

Alluvial soil; c. 50 m alt.

Belonging to the *F. ciliaris* complex, "but differs from all species in its unusual inner perianth segments with a very pale somewhat cordate lamina swollen and almost ball-like at the tip increasing buoyancy and thus adapted to dispersal by water" (Lye, 2007: 398).

Morphologically similar to *F. bidgoodiae* – their distribution areas are not overlapping (Hoenselaar & al. in Kew Bull. 64: 687, 2010).

Known only from the type collected in 1984.

F. striatella Lye; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 100, 1995; Candollea 51: 2−3 (nutlet), 1996.

Tussocky annual herb with few to many crowded culms 2−10 cm long, c. 1 mm ∅, often almost terete with longitudinal ridges, glabrous or with a few stiff hairs; leaves 3−5, the lowermost without or with very short blade; sheaths light reddish brown, brownish or green, densely hairy with short spreading hairs but uppermost sheaths usually glabrescent; ligule c. 1 mm tall, densely short-hairy to glabrous; blades probably to 20 cm or more long, 2−5 mm wide, margin and sometimes upper surface hairy; inflorescence a terminal cluster of 3−10 crowded sessile or subsessile spikelets, sometimes with an additional stalked spikelet-cluster from the uppermost sheath; spikelets 4−5 × 2−3 mm, ovate, apex obtuse, with 20−40 densely imbricate glumes.

Clay flush with heavily grazed vegetation; 1350−1400 m alt.

Near *F. wallichiana* Kunth from India.

Known only from the type collected in 1957.

F. stricta Steud.; Muasya in Kew Bull. 53: 192, 1998; Clarke & Mannheimer, Cyper. Namibia: 94, 80 (map), 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Akoègninou & al., Fl. analyt. Bénin: 102, 2006; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Lisowski, Fl. Rép. Guinée 1: 402, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Fl. Trop. E. Afr., Cyper.: 9−10, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 106, 2017); Mesterházy in Lidia 7/5: 108, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 111−112, 2015. – Icon.: R. E. Fries, Wiss. Erg. Schwed. Rhod.-Kongo Exp., Erg.: pl. III fig. 2, 1921; Lowe & Stanfield, Fl. Nigeria: Sedges: 76, 1974 (as var. *stricta*); Haines & Lye, Sedges & rushes E. Afr.: 42−43, 1983; Berhaut, Fl. ill. Sénégal 9: 250, 1988 (details); Gordon-Gray, Cyper. Natal: 103, 1995 (nutlet); Fl. Eth. & Eritrea 6: 395, 1997 (subsp. *chlorocarpa*); Fl. Gabon 44, Cyper.: 149, 2012.

Tufted perennial herb; culms arising closely at intervals of less than 0,5−1 cm on a short or rarely long rhizome 1−2 mm ∅; culm trigonous, 25−90 cm tall, 1−2 mm ∅ (but c. 3 mm ∅ across the sheath), glabrous except just below inflorescence; leaf sheath glabrous, ligule hairy; blade 2−7 cm long, 0,2−0,4 cm wide, glabrous except scabrid margins and the triangular tip, sometimes with longer hairs on margins and midrib; inflorescence a subdigitate or paniculate cluster of spikelets, each 4−12 × 2−4 mm, 5-angled or terete, many-flowered; glumes 2,2−3,1 mm long incl. 0,4 mm long mucro.

Granitic sweating surface in meadow; swampy enclave in forest gallery with *Drosera pilosa*; seepage area in *Hagenia abyssinica* woodland; seasonally wet grassland; edge of permanent swamps; often in shallow standing water; rock outcrops in *Brachystegia* woodland; marshy places on edges of fields; clearings in forest; humid hollows in savanna; swamp with *Sphagnum*; rice fields; sometimes forming floating mats; 100−2900 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar, Comoros.

Variable in ranking, or not, of glumes; comprises 2 subspp., but not always recognised: – subsp. **chlorocarpa** (Ridl.) Lye [bas.: *F. chlorocarpa* Ridl.; syn.: *F. stricta* var. *chlorocarpa* (Ridl.) Kük.], with terete spikelets, and mature nutlets dark green; – subsp. **stricta** [syn.: *Rhynchospora senegalensis* Steud.; *Pentasticha madagascariensis* Turcz.; *Fuirena friesii* Kük.], with 5-angled spikelets, and mature nutlets brown.

F. umbellata Rottb.; M. Renier, Flore du Kwango 1: 73, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 629, 1985; Clarke & Mannheimer, Cyper. Namibia: 94, 80 (map), 1999; Muasya in Kew Bull. 53: 201−202, 1998; Simpson & Inglis in Kew Bull. 56: 319−320, 2001; Naczi & Ford, Sedges: uses…: 8, 48, 75, 95, 2008; Lisowski, Fl. Rép. Guinée 1: 402, 2009; Longhi-Wagner & al. in Kew Bull. 65: 455, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Fl. Trop. E. Afr., Cyper.: 20−21, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 121, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011; Mesterházy in Lidia 7/5: 108, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 106, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015; Poilecot, Guide to Liberian grasses: 80−81, 2015. – Icon.: Clarke, Illustr. Cyper.: pl. 59 fig. 9, 1909 (nutlet); Lowe & Stanfield, Fl. Nigeria: Sedges: 76, 1974; Haines & Lye, Sedges & rushes E. Afr.: 49, 1983; Berhaut, Fl. ill. Sénégal 9: 251, 1988; Gordon-Gray, Cyper. Natal: 103, 1995 (nutlet); Fl. Eth. & Eritrea 6: 392, 396, 1997; Prasad & Singh, Sedges Karnataka (India): 227, 2002; Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 63, 2002; Cook, Aquat. & wetland pl. south. Afr.: 104, 2004; Fedón & Colonnello in Acta Bot. Venez. 27: 20, 2004 (details); Akoègninou & al., Fl. analyt. Bénin: 103, 2006; Fl. Gabon 44, Cyper.: 151, 2012; Fl. China, Ill. 23: 235, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 371, 2014.

syn.: *Scirpus umbellatus* (Rottb.) Kuntze; *Fuirena umbellata* var. *typica* Domin, nom. inval.; *Scirpus fuirena* T. Koyama, nom. nov.; *Fuirena paniculata* L. f.; *F. brachylepis* Peter (cf. Fl. Trop. E. Afr., Cyper.: 21, 2010); *F. brasiliensis* Raddi 1823; *F. brasiliensis* Palla 1908, nom. illeg. (Kew Bull. 65: 455, 2010); *F. capitata* Willd. ex Kunth; *F. seriata* C. B. Clarke; F. *philippinensis* Gand.; *F. appendiculata* Peter; *F. multiflora* Peter; *F. mahouxii* Cherm.; *F. oedipus* C. B. Clarke; further synonyms in World Checklist of Selected Plant Families, Cyper., Royal Bot. Gard., Kew. – *F. brachylepis* Peter from Tanzania, Ujiji, no specimens cited. Description in F.T.E.A., l. c., derived from information given in Peter's key, 1928.

Perennial herb; culms arising at 1,5 cm intervals on horizontal woody rhizome 5 mm ∅, basal parts of culms swollen and bulb-like; culms pentagonous, 0,24−1,16(−1,5) m tall, 3−9 mm ∅ (but c. 11 mm ∅ across the sheath), glabrous except just below inflorescence; leaf sheath minutely hairy or glabrous, ligule densely hairy; blade 6−30 cm long, *0,7−2,5* cm wide, glabrous or minutely

pubescent above, margins with translucent hairs; inflorescence a corymbose cluster of spikelets, each 4−11 × 2−4 mm, terete, many-flowered.

Seasonally wet grassland; swamp forest; stream and lake banks; fallows; gallery forest; mangroves; quaking bog by lake shore; ditches; pools; wet habitats with loose soils; inselbergs; also in brackish water and tidal mud-banks; permanent swamp; grass swamp in *Albizia zygia*, *Combretum* woodland; weed in rice fields (bulbils render the plant difficult to eradicate); 0−1900 m alt.

"Variable morphologically so that it [*F. umbellata*] has been known under many names. Its synonymy is complicated by confusion between *F. umbellata* and *F. ciliaris*… Plants [are] known to respond markedly to habitat conditions, particularly the availability of water. Plants growing in permanent water are robust perennials with woody rhizome bearing contiguous, or almost so, emergent, 5-angled culms. Leaf sheaths also 5-angled; leaf blade with 5 strongly marked veins. These two criteria provide a simple means of identification. However, where water is temporary, or less freely available, plants [are] often slender and small, and 5-angled culms and 5-veined leaf blades difficult to detect" (Gordon-Gray, Cyper. Natal: 104, 1995).

San Tomé (Figueiredo & al. in Bothalia 41: 52, 2011); Namibia, S. Africa, Botswana; Madagascar, Mauritius, Réunion; pantropical: widely distributed in tropical and subtropical countries except in too dry regions; India, Sri Lanka, E-wards through Thailand – China – Indonesia, Japan, Philippines; Australia; Pacific Islands; tropical C. & S. America.

Useful as a mud-binder to reduce coastal erosion; also a soil improver (ploughed in as green manure); tubers edible: "When plants of *F. umbellata* endure an unfavourable drying-out season in the growth cycle, the culm bases may become swollen, hard and corm-like. *F. oedipus* from the bog edge of the Victoria Falls rain forest… was named for this (Gordon-Gray, l. c.).

Smaller specimens often confused with *F. obcordata* [and *F. hirsuta* (P. J. Bergius) P. L. Forbes in S. Africa].

Easily recognised by its large size, 5-angular stem and leaf sheaths. It is the only species of *Fuirena* with scale-like, not clawed, perianth segments.

F. welwitschii Ridl.; Haines & Lye, Sedges & rushes E. Afr.: 51, 1983, (as *F. pubescens* var. *buchananii*); Muasya in Kew Bull. 53: 195−196, 1998; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Fl. Trop. E. Afr., Cyper.: 13−14, 2010. – Icon.: Flora 176: 68, 1985 (as *F. pubescens* var. *buchananii*).

syn.: *F. buchananii* Boeckeler; *F. pubescens* (Poir.) Kunth var. *buchananii* (Boeckeler) C. B. Clarke

Perennial herb; culms arising at 0,4−1,5 cm intervals on horizontal rhizome 2−4 mm ∅; culm trigonous, 17−75 cm tall, 1−3 mm ∅ (but c. 4 mm ∅ across the sheath), glabrous except below inflorescence; leaf sheath glabrous, ligule hairy; blade 0,6−2 cm long, 0,2−0,4 mm wide, glabrous; inflorescence a subdigitate cluster of spikelets, each 0,5−2 cm × 3−5 mm, 5-angled, many-flowered; perianth segments absent.

Seasonally wet grassland; edges of permanent swamps and streams; seepage areas; pools on granite rocks; wooded pastures; rather dry sandy hills; 1150−2300 m alt.

Variable in size and form. "In damp wooded spots it is tall and much drawn up… and [with] larger flower-spikes. In dryer sandy spots… it is short and stunted…" (Ridley, Trans. Linn. Soc. London, Bot. 2: 161, 1884).

Treated as a synonym under *F. pubescens* in Fl. Eth. & Eritrea 6: 395, 1997.

F. zambesiaca Lye; Muasya in Kew Bull. 53: 200, 1998; Fl. Trop. E. Afr., Cyper.: 19−20, 2010. – Icon.: Bot. Not. 127: 110, 1974; Haines & Lye, Sedges & rushes E. Afr.: 44, 1983.

Annual herb; culm terete, 14−46 cm tall, 1−2 mm ∅ (but c. 3 mm ∅ across the sheath), densely pubescent, or glabrous except just below inflorescence; leaf sheath and ligule hairy; blade 7−12 cm long, 0,2−0,5 cm wide, densely pubescent; inflorescence a subdigitate to irregular cluster of spikelets, each 0,3−1,4 cm × 2−4 mm, terete, many-flowered; glumes with short and long hairs; perianth segments 6.

Seasonally wet grassland; pools on sandy ground; in crevices or large rock outcrops in dry woodland; 0−900 m alt.

SYNONYMS:

Fuirena appendiculata Peter = **Fuirena umbellata**
brachylepis Peter = **F. umbellata**
brasiliensis Raddi 1823 = **F. umbellata**
brasiliensis Palla 1908 = **F. umbellata**
buchananii Boeckeler = **F. welwitschii**
calolepis K. Schum. = **F. ochreata**
canescens Pers. 1805, non Vahl 1805 = **F. ciliaris** fa. **ciliaris**
capitata Willd. ex Kunth = **F. umbellata**
chlorocarpa Ridl. = **F. stricta** subsp. **chlorocarpa**
ciliaris (L.) Roxb. sensu Podlech 1967 p. min. p. = **F. leptostachya** fa. **nudiflora**
ciliaris (L.) Roxb. var. *angolensis* Schinz, nom. nud. = **F. angolensis**
ciliaris var. *apetala* Wingf. = **F. ciliaris** fa. **apetala**
ciliaris var. *ciliaris* in Gordon-Gray 1995 = **F. ciliaris** fa. **ciliaris**
ciliata Leprieur ex Steud. 1855 = **F. ciliaris**
cinerascens Bojer ex C. B. Clarke = **F. ochreata**
cinerascens Ridl. 1884 & auctt., nom. nud. = **F. ochreata**
coerulescens Steud. var. *glabrescens* Schönl. 1922, p.p. = **F. ecklonii**, **F. obcordata**
cristata Turrill = **F. ochreata**
enodis C. B. Clarke = **F. coerulescens**
filifolia Rchb. ex Kunth 1837, pro syn. = **Tetraria cuspidata**
friesii Kük. = **Fuirena stricta** subsp. **stricta**
glabra Eckl. ex Krauss 1845, non Kunth 1837 = **F. obcordata**
glabra Kunth = **F. hirsuta**
glauca Boeckeler ex C. B. Clarke = **F. coerulescens**
glomerata Lam. = **F. ciliaris**
glomerata Boeckeler 1879, non Lam. = **F. leptostachya** fa. **nudiflora**
glomerata var. *angolensis* C. B. Clarke = **F. angolensis**
glomerata var. *angolensis* sensu Peter, non C. B. Clarke = **F. claviseta**
gracilis Kunth 1837, non Spreng. 1818 = **F. coerulescens**
leptostachya Oliv. var. *leptostachya* in Gordon-Gray 1995: 100 = **F. leptostachya** fa. **leptostachya**
leptostachya var. *nudiflora* C. B. Clarke = **F. leptostachya** fa. **nudiflora**
macrostachya Boeckeler = **F. pachyrrhiza**
mahouxii Cherm. = **F. umbellata**
microcarpa Lye – treated as a synonym of **F. leptostachya** var. (= fa.) **nudiflora** by Gordon-Gray 1995: 100
microlepis Kunth p.p. = **F. pubescens** var. **pubescens**, **F. obcordata**
microlepis sensu C. B. Clarke 1894, & auctt. = **F. obcordata**
moiseri Turrill = **F. leptostachya** fa. **nudiflora**

mollicula Kunth = **F. coerulescens**
mollicula var. β, incl. syntypes Drège 4340, 2039 = **F. ecklonii**
multiflora Peter = **F. umbellata**
nana A. Rich. = **Lipocarpha nana**
oedipus C. B. Clarke = **Fuirena umbellata**
paniculata L. f. = **F. umbellata**
philippinensis Gand. = **F. umbellata**
pubescens (Poir.) Kunth, excl. Drège 4339 = **F. obcordata**
pubescens var. *buchananii* (Boeckeler) C. B. Clarke = **F. welwitschii**
pubescens var. *major* Lye = **F. pachyrrhiza**
sp. aff. *pubescens* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 326, 1972 = **F. pubescens**
pygmaea Welw. ex Ridl. = **F. leptostachya** fa. **nudiflora**
reticulata Kük. = **F. coerulescens**
schweinfurthiana Boeckeler = **F. leptostachya** fa. **nudiflora**
seriata C. B. Clarke = **F. umbellata**
stricta Steud. var. *chlorocarpa* (Ridl.) Kük. = **F. stricta** subsp. **chlorocarpa**
subdigitata C. B. Clarke = **F. coerulescens**
umbellata Rottb. var. *typica* Domin = **F. umbellata**

(GALILEA)

Galilea mucronata (L.) Parl. = **Cyperus capitatus**

(HALOSCHOENUS)

Haloschoenus contractus Nees = **Rhynchospora contracta**

(HELEOGITON)

Heleogiton fluitans (L.) Link ex Rchb. = **Isolepis fluitans**

(HEMICARPHA)

Hemicarpha isolepis Nees = **Lipocarpha hemisphaerica**
micrantha (Vahl) Pax 1888 = **L. micrantha**
micrantha (Vahl) Britton 1888 = **L. micrantha**
schraderi Kunth = **L. hemisphaerica**
schraderiana Nees = **L. hemisphaerica**
senegalensis Steud. = **L. hemisphaerica**
subsquarrosa (Muhl.) Nees = **L. micrantha**

(HEMICHLAENA)

Hemichlaena bulbosa Hochst. ex A. Rich. = **Cyperus blysmoides**

(HOLOSCHOENUS)

Holoschoenus globifer (L. f.) Rchb. 1830 = **Scirpoides holoschoenus** subsp. **globifera**
globiferus (L. f.) A. Dietr. = **S. holoschoenus** subsp. **globifera**
romanus (L.) Fritsch var. *australis* (L.) Bech., and subsp. *australis* (L.) Greuter = **S. holoschoenus** subsp. **holoschoenus**
thunbergii (Schrad.) A. Dietr. = **S. holoschoenus** subsp. **thunbergii**
vulgaris Link = **S. holoschoenus**

(HYPAELYPTUM)

Hypaelyptum Vahl 1806 p.p. = **Lipocarpha** R. Br.
Hypaelyptum Vahl 1806 p.p. = **Hypolytrum** L. C. Rich.
Hypaelyptum albiceps (Ridl.) K. Schum. = **Lipocarpha albiceps**
albidum Willd. ex Kunth = **L. chinensis**
argenteum Vahl, nom. superfl. = **L. chinensis**
filiforme Vahl = **L. filiformis**
laevigatum (Roxb.) Spreng. = **L. chinensis**
pulcherrimum (Ridl.) K. Schum. = **L. nana**
senegalense (Lam.) K. Schum. = **L. chinensis**

(HYPAELYTRUM)

Hypaelytrum nemorum sensu Palisot de Beauvois 1810, non (Vahl) Spreng. = **Hypolytrum heterophyllum**

HYPOLYTRUM / *18*

syn.: *Hypaelyptum* Vahl 1806 p.p. (cf. **Lipocarpha**)

Genus of some 50 species in the tropics and subtropics, where they live in the underwood of dense forests.

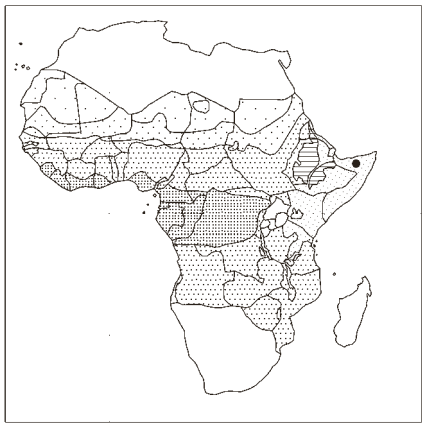
The genus is mostly confused with *Mapania*, as both genera can have large basal strap-like leaves and a globose capitate inflorescence. In both genera the inflorescences have additional structures. Interpretations and terms used for these have varied (Browning & Mesterházy o.c.). *Hypolytrum* is usually distinguished by having 2 floral bracts within the spicoid compared with 4−6 floral bracts in *Mapania* (Xanthos 2013: 45). – The inflorescence in *Hypolytrum* is terminal, paniculate, the ultimate branches subtending small clusters of spikes. The spikes are ellipsoid or narrowly cylindric, composed of tightly imbricate, spirally arranged bracts, each subtending a much reduced pseudanthium (spicoid). The spicoid is composed of a naked terminal pistil and (2−3) floral bracts each subtending a single stamen, and a naked terminal pistil. The floral bracts are free, membranous, boat-shaped, strongly keeled. The nutlet is (compressed-)ellipsoid, the apical portion spongy, triangular, the base shortly stipitate or triangular stipitate; surface with or without longitudinal ridges, lateral costae 0−2 (Fl. Trop. E. Afr., Cyperaceae: 6, 2010).

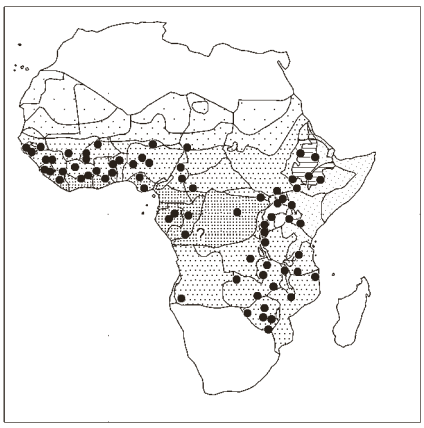
In 2011 (Lidia 7: 85, 2011) Lye included *Hypolytrum* in *Mapania*. He wrote: "The reason… is partly the lack of clear morphological separating characters between the two genera and partly the lack of genetic separation shown in molecular works". Browning & Mesterházy point out that Lye's decision was based on very limited phylogenetic data and that Lye seems to have omitted *Hypolytrum schnellianum*. They do not support Lye's decision and maintain two separate genera. This is followed by Browning & Goetghebeur (Sedge genera of Africa and Madagascar, 2017), and this is also the case in our compilation below.

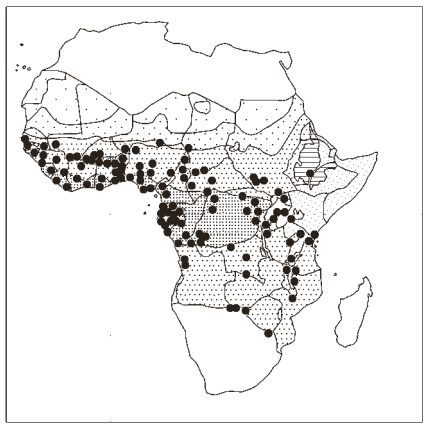
Usually the infloresence is open in *Hypolytrum* and congested in *Mapania*. But there are 3 African monopodial *Hypolytrum* species with capitate inflorescences (*Hypolytrum* "mapanioides" sensu J. Raynal in Adansonia, Sér. 3, 8: 423, 1968). There is also a *Hypolytrum pseudomapanioides* (See Kew Bull. 59: 613, 2004).

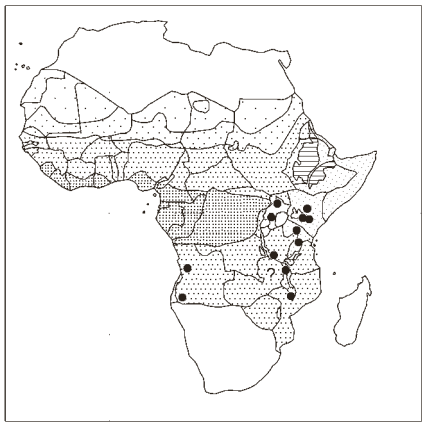
Some species in our area are little known, and rarely collected. *Hypolytrum pahiense* is known only from the type, and *H. unispicatum* from 2 records only. *H. leprieurii* is not a plant from W. Africa, but from French Guyana (S. America). Its identity is uncertain.

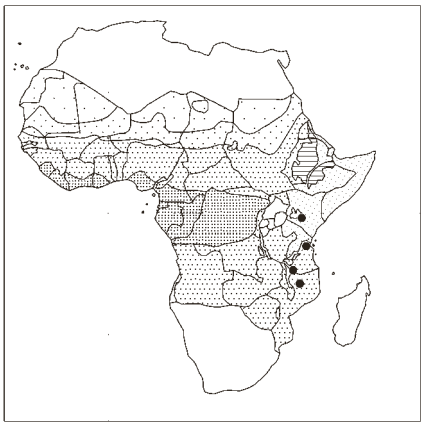
BROWNING, J. & A. MESTERHÁZY (2016). Hypolytrum and Mapania (Cyperaceae) of West Africa. An illustrated guide to species. Version 2. *Kew Herbarium*

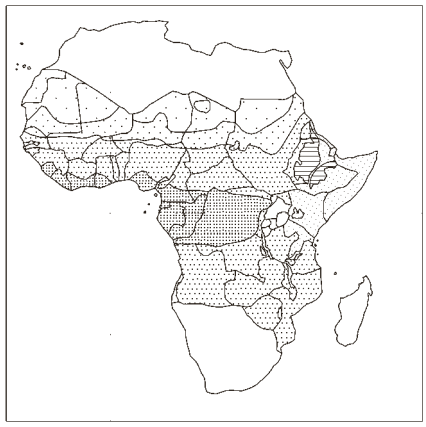

Fuirena striatella

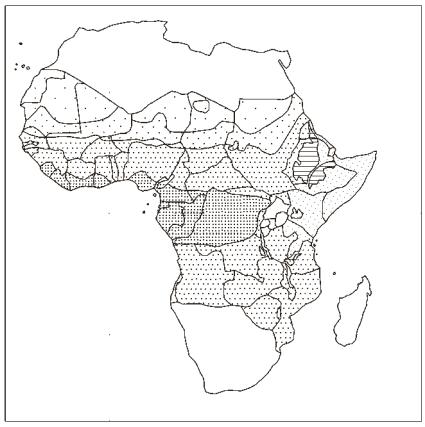

Fuirena stricta

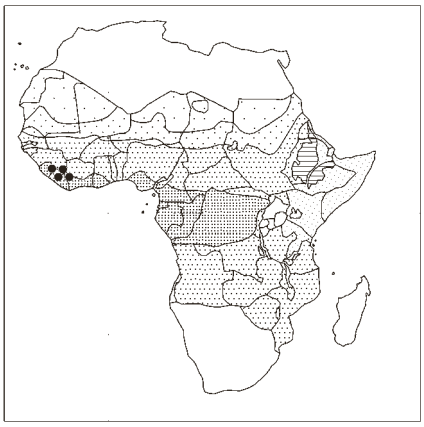

Fuirena umbellata

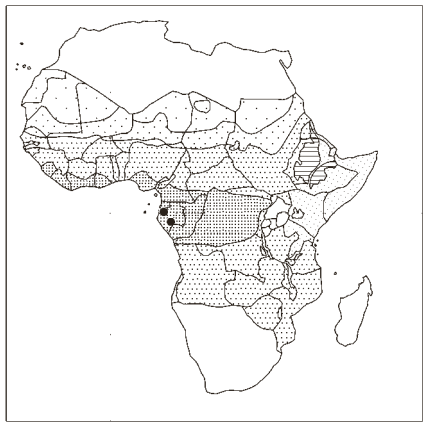

Fuirena welwitschii

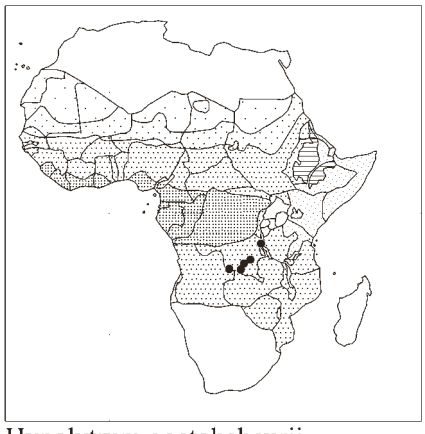

Fuirena zambesiaca

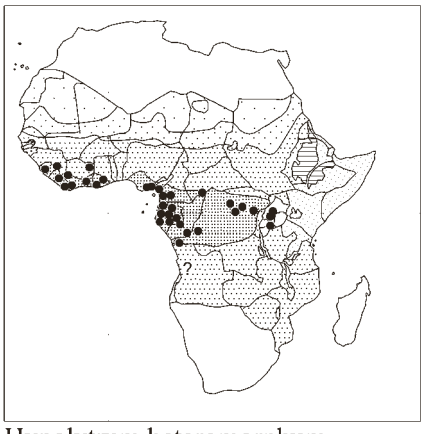


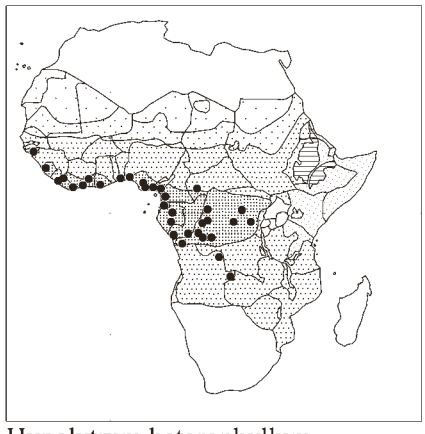



Hypolytrum cacuminum


Hypolytrum chevalieri


Hypolytrum goetghebeurii


Hypolytrum heteromorphum


Hypolytrum heterophyllum
(incl. H. angolense)

Catalogue (2016), Royal Botanic Gardens, Kew, Richmond (http://apps.kew.org/herbcat/navigator.do).

LOROUGNON, G. (1973). Le vecteur pollinique chez les Mapania et les Hypolytrum, Cypéracées du sous-bois des forêts tropicales ombrophiles. *Bull. Jard. Bot. Natl. Belg*. 43: 33−36.

LYE, K. A. (2011). The genus Hypolytrum (Cyperaceae) included in Mapania. *Lidia* 7: 85−95.

(***Hypolytrum africanum*** Nees ex Steud. 1855, non *Mapania africana* Boeckeler 1871) – See below under **H. senegalense** Rich.

(***H. angolense*** Nelmes 1955) – See below under **H. heterophyllum** Boeckeler

H. cacuminum Nelmes; Lisowski, Fl. Rép. Guinée 1: 403, 2009. – Icon.: Browning & Mesterházy 2016: 7; Browning & Goetghebeur, Sedge genera Africa & Madag.: 52, 2017.

syn.: *Mapania cacumina* (Nelmes) Lye; *Hypolytrum heterophyllum* sensu Nelmes & Baldwin in Amer. J. Bot. 39: 371, 1952 p.p. quoad specim. Bequaert 94 (Liberia).

Stems trigonous, 0,65−1,5 m tall, 3−6 mm ∅, smooth below and sometimes above, angles usually somewhat scabrid towards apex; stem base enlarged, woody; leaves numerous, basal and sub-basal and 2−4 widely spaced on the stem above, lower ones shorter than or equalling, upper exceeding the stem, linear-lanceolate, c. 1−1,7 cm wide, usually weakly to strongly plicate, margins often ± revolute, stem leaves longly sheathing; inflorescence corymbose, 5−6 cm long, 6−7 cm wide, with numerous spikes, mostly ellipsoid, 5−9 mm long; spicoid bracts 3−4 mm long.

Meadows; savanna or high savanna; scrub at base of rocky blocks with *Afrotrilepis jaegeri*; mountain bush with *Dissotis leonensis*, *Kotschya ochreata*; thalweg in forest gallery; growing in stands; mountain grassland; 750−1500 m alt.

H. chevalieri Nelmes – Icon.: Fl. Gabon 44, Cyper.: 163, 2012 (nutlet; as *Mapania chevalieri*).

syn.: *Mapania chevalieri* (Nelmes) Lye

Robust herb with short rhizome 4−7 mm ∅; central stem solitary, 0,7−1,2 m tall, 2−5 mm ∅, trigonous, green, scabrous at apex; leaves numerous, mostly basal but a few present along the stem, longer than the stem; sheath long, green; blade flat or slightly folded, margins and main veins strongly scabrid, the largest 50 cm long, 2,5 cm wide, gradually narrowed into a pointed apex; inflorescence a loose terminal panicle 8−12 cm long, 13−15 cm wide, brown, with 5−10 main branches each 0,5−5 cm long with 3−6 secondary branches with sessile and pedunculate spikes each linear-lanceolate to ellipsoid becoming more obovoid at maturity, 9−18 × 2−4 mm, brown, blunt at apex.

Humid forests, often along streams and water courses; < 100 m alt.

Said to be very near (*Mapania afro-orientalis* =) *Hypolytrum testui*. Also resembling (*Mapania polystachya* =) *Hypolytrum polystachyum*.

H. goetghebeurii Thery, Pl. Ecol. Evol. 152: 95, 2019 (figs. p. 94, 96, 97/map).

Perennial herb forming thick tussocks, to 80 cm tall, with a short rhizome; basal leaves many, old sheaths and blades persistent; blade linear, 40−65 × 0,6−1 cm, rigid, margins scabrid and often inrolled; flowering culm central, solitary, with 2−3 leaves, 50−80 cm tall, 2−3 mm ∅, triquetrous, angles scabrid above, base thickened; inflorescence a lax to ± dense panicle, 3−15 cm high, 3−6 cm wide, lowest node sometimes well separated from upper part, lowest panicle branch 0,8−3 cm long; spikes fusiform to ± globose in fruit, 4−8 × 1,7−4,5 mm, reddish- to dark brown.

Shrub and herb savanna; miombo woodland; *Brachystegia* woodland on rocky slope; *Marquesia* woodland on granitic soil; *Uapaca* woodland; *Pseudoberlinia paniculata* woodland, on rocky soil., on ridge, on dry reddish soili 900−1300 m alt.

H. heteromorphum Nelmes; Lorougnon (1973): 35 (pollination); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 630, 1985; Simpson & Inglis in Kew Bull. 56: 321, 2001; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Harvey & al., Pl. Lebialem Highl., Cameroon: 153, 2010; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 337, 1972; Lorougnon, Cypér. forest. Côte d'Ivoire (Mém. ORSTOM 58): 82, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 78, 1974; Haines & Lye, Sedges & rushes E. Afr.: 326, 1983; Cook, Aquat. pl. book: 78, 1990; Lisowski, Fl. Rép. Guinée 2: fig. 486, 2009; Fl. Trop. E. Afr., Cyper.: 7, 2010; Lye in Lidia 7: 91, 2011 (under *Mapania*); Mesterházy in Lidia 7/5: 109, 2012; Fl. Gabon 44, Cyper.: 16, 2012 (under *Mapania*); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 372, 2014; Browning & Mesterházy (2016): 8.

syn.: *H. africanum* sensu Clarke in Fl. Trop. Afr. 8: 488, 1902, non Nees ex Steud. ("a misidentification accepted during a very long time"); *Mapania heteromorpha* (Nelmes) Lye; prob. syn.: *Hypolytrum africanum* sensu Boulvert, Cat. Fl. Centrafr. 1 (rec. 2): 12, 1977.

Perennial herb with short erect rhizome; stems lateral, arising from the axils of the lower leaves, 15−80 cm long, 1−3 mm ∅, compressed-terete, smooth or slightly scabrid in upper part, green or sometimes violaceous at base; leaves all basal, much longer than stems, numerous, coriaceous, linear, flat or slightly folded, 30−90 cm long, 1−2 cm wide, gradually narrowed to a sharp tip; sheath 6,5−8 cm long, c. 1 cm ∅; inflorescence stiffly erect, terminal, brown, paniculate, 2−6 cm long, 2,5−7 cm wide, of up to 4 primary branches 1−3,2 cm long, each subtending 2−7 subsessile spikes; spikes linear-lanceolate becoming cylindric, 0,8−1,3−2,5 cm × 1−4 mm.

Swampy forests; shaded river bank, above waterfall; mangrove edges; in permanently waterlogged situations; sandy banks; loamy soil; shaded rocky hillside; on river in fairly thick bush; sandstone cliff, very wet, beneath high forest, by small tributary stream; secondary forest near a stream; sometimes very common; 0−1200 m alt.

S. Tomé, Príncipe.

"Differs from all other species [of *Hypolytrum*] in the flowering spikes being several times longer than broad" (Fl. W. Trop. Afr., ed. 2, 3/2: 336, 1972).

H. heterophyllum Boeckeler – Often figuring in floras and flora lists as *H. purpurascens*. – Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973 (pollination); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 630, 1985 (as *H. purpurascens*); Simpson & Inglis in Kew Bull. 56: 321, 2001 (idem); Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 227, 2002; Cabezas & al. in Belg. J. Bot. 137: 12−13, 2004; Akoègninou & al., Fl. analyt. Bénin: 103, 2006 (as *H. purpurascens*); Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223 (as *H. purpurascens*), 224 (as *H. testui*), 2011; Mesterházy in Lidia 7/5: 111, 2012. – Icon.: Lorougnon, Cypér. Forest. Côte d'Ivoire (Mém. ORSTOM 58): 83 (as *H. testui*), 85, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 4, 78, 1974 (as *H. purpurascens*); Berhaut, Fl. ill. Sénégal 9: 253, 1988 (idem); Fl.

Gabon 44, Cyper.: 63 (as *Mapania heterophylla*, 171 (as *M. purpurascens*), 2012; Velayos & al., Fl. Guinea Ecuat. 11: Cyper.: 373, 2014; Browning & Mesterházy (2016): 9; Browning & Goetghebeur, Sedge genera Africa & Madag.: 52, 2017.

syn.: *H. buchholzianum* Boeckeler; *H. congense* C. B. Clarke ex De Wild. & T. Durand; *H. nemorum* var. *minus* Cherm.; *H. purpurascens* Cherm.; *H. africanum* sensu Nelmes & Baldwin in Amer. J. Bot. 39: 371, 1952 p.p. quoad specim. Dinklage 2584, 2653 et Harley 796; *H. angolense* Nelmes; *H. testui* Cherm. sensu Fl. W. Trop. Afr.; *Mapania angolensis* (Nelmes) Lye; *M. afroorientalis* Lye p.p., quoad specim. Côte d'Ivoire; *M. purpurascens* (Cherm.) Lye; ? *Hypaelytrum nemorum* in Palisot de Beauvois, Fl. Oware 2: 13, pl. 67, 1810 (See note below).

Perennial herb with creeping rhizome producing tufts with numerous basal leaves and a central stem; stem 0,3−1,2 m tall, 1−4 mm ∅, trigonous, smooth at base, very scabrous above, green to brownish; leaves 3−10, mostly basal, the lowest may be very short, showing a transition from the scale leaves on the rhizome, flowering stems bearing 1−3 leaves on its length; sheath green to reddish brown; blade 20−100 cm long, 1−3 cm wide, flat or slightly folded, 3-nerved, gradually narrowed to a sharp apex, margins scabrous to finely toothed; inflorescence a terminal loose panicle, hemispherical, 2−18 cm high, 2−15 cm wide, brown, with 1−15 primary branches 0,5−5 cm long, each with short secondary branches or spikes; spikes linear-lanceolate to obovoid or ± globose (at maturity), 3,5−8 × 1,5−5 mm, brown; nutlet small, 1,5−2 × 1,5 mm, (reddish) brown.

Humid forests; sometimes along streams; edge of water-hole in savanna; sandy places on river banks; marshy places; path on edge of forest periodically flooded; roadside; damp places in forest; mangrove forest; 0−710 m alt.

Bioko/Fernando Poo.

Note: In Palisot de Beauvois, Flore d'Oware 2: p. 13, pl. 67, 1810, the plate picturing *Hypaelytrum nemorum* seems to represent *Hypolytrum heterophyllum*, although the differences between this species and *H. testui* (mainly E. African) seem difficult to perceive.

H. lancifolium C. B. Clarke – Icon.: Fl. Gabon 44, Cyper.: 161, 165, 2012 (under *Mapania*); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 374, 2014.

syn.: *Mapania lancifolia* (C. B. Clarke) Lye

Perennial herb with rather slender rhizome; stem central, solitary, 0,6−1,45 m tall, 3−6 mm ∅, trigonous, smooth, green to brownish, *base covered with cataphylls*; leaves 5−10, widely spaced on stem, but often 2−3 arising close together in middle of stem; sheath green; blade oblong-lanceolate to oblong-elliptic, flat or slightly folded, the largest 25−40 cm long, 2−4,5 cm wide, margins scabrid, at least near the progressively narrowing pointed apex; inflorescence a terminal loose panicle 2,5−6 cm high, 4−12 cm wide, light or dark brown; spikes numerous, shortly cylindric, obovoid at maturity, 5−10 × 1,5−4 mm, reddish brown, apex blunt.

Humid shady forests; river banks; also on top of inselberg between big rocks; 100−1000 m alt.

(***H. leprieurii*** Nees ex Steud., Synopsis plantarum glumacearum II, Cyperaceae: 133, 1855). – Country mistake, See below.

"Species imperfecte cognitae, an heterogoneae", at end of species list.

Leaves narrow above base of plant nearly forming a petiole, 8−10 mm (4−5 lineae) wide, c. 45 cm (1 1/2 feet) long, apex narrow, acute, margins and midrib scabrous; scapes axillary, shorter than leaves, trigonous, few-flowered; flowers incomplete.

"A plant belonging to another genus ?"

Collected by Leprieur in *French Guiana* (where he collected in the years 1830−1850 according to Chaudhri & al., Index herbariorum 2/3, Collectors, I-L: 433, 1972).

The description in Steudel, Synopsis plantarum etc., indicates that the plant was collected in **French Guyana** (S. America), not in French Guinea (Africa).

Hypolytrum leprieurii is listed in Index Kewensis 2: 1198, 1893, as referring to *Mapania africana* Boeckeler in Linnaea 37: 137, 1871−1873 (Index Kewensis 3, 1894). Under *Mapania africana* Boeckeler the only collection cited is G. Mann. n. 1873, "Africa occid. tropica". As the plant was described on a specimen from French Guyana, we checked G. Cremers & M. Hoff, Inventaire taxonomique des plantes de la Guyane française III – Les Cyperaceae et les Poaceae (Paris 1993). There is no mention of the plant under *Hypolytrum* (p. 33) nor under *Mapania* (p. 36−37). It seems that the origin of *Hypolytrum leprieurii* was misinterpreted from the very beginning.

There is no herbarium specimen deposited at Geneva, Switzerland (G, G-DC). We gratefully acknowledge the research in herbarium and literature made by Mr. N. Fumeaux, Geneva.

H. pahiense Xanthos, Phytotaxa 79: 45, 2013; Kew Bull. 10: 74, 1955 (as *H. costatum*). – Icon.: Browning & Mesterházy (2016): 10.

syn.: *H. costatum* Nelmes 1955, nom. illeg., non Hochst. ex Steud. 1855 [= *H. amplum* Kunth, tropical America] nec Thwaites 1864 [= *Scirpodendron ghaeri* (Gaertn.) Merr. (E India, Sri Lanka, to W Pacific)]; *Mapania costata* (Nelmes) Lye (comb. nov., basionym illeg.).

Perennial herb with horizontal rhizome; stems several, trigonous, 56 cm tall, 1,5−2 mm ∅, thick below, smooth except for scabrid angles on the rachis; basal leaves reduced to brown-edged sheaths; cauline leaves several, spaced apart on the stem but more frequent towards the apex, elliptical, somewhat glaucous, mostly shorter but few upper longer than stem, 1−1,5 cm wide, longly to shortly sheathing; inflorescence paniculate, few-spiked, 6 cm high, 4,5 cm wide; spikes 20−30, lanceolate to cylindric, 5−8 mm long; *nutlet* ± spherical, biconvex, shining dark reddish-brown, with 2−4 longitudinal strongly raised lines on each face, densely transversely very finely lineolate between them ("remarkable for the surface markings… wholly unlike those of any other species", Nelmes in Kew Bull. 10: 74, 1955).

Rainforest on top of a hill.

Known only from the type collected in 1947.

H. poecilolepis Nelmes; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 630, 1985; Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973 (pollination); Simpson & Inglis in Kew Bull. 56: 321, 2001; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011. – Icon.: Lorougnon, Cypér. forest. Côte d'Ivoire (Mém. ORSTOM 58): 80, 1972; Browning & Mesterházy (2016): 11; Browning & Goetghebeur, Sedge genera Africa & Madag.: 52, 2017.

syn.: *Mapania poecilolepis* (Nelmes) Lye; *Hypolytrum africanum* sensu Nelmes & Baldwin in Amer. J. Bot. 39: 371, 1952, quoad specim. Baldwin 10720, Whyte s. n.; *H. senegalense*, l.c., quoad specim. Baldwin 10277.

Stoutly rhizomatous perennial herb; stems 30−50 cm tall, 1−2 mm ∅, distinctly trigonous, often fuscous or purplish, smooth below or only at base, rough to very rough above, clothed in the basal area with semi-sheathing brown or ferrugineous scales or bladeless sheaths; leaves rather numerous about equalling to much longer than stem (to c. 1 m), 1,3−5 cm wide, basal part

short, conduplicate, often slenderly septate-nodulose in places; sheaths open, margins brown; inflorescence a terminal corymbiform panicle, pale whitish, 3−6 cm long, 7−12 cm wide; spikes numerous, ellipsoid, fusiform or cylindric-ellipsoid, 4−9 mm long; spicoid bracts c. 3 mm long, mottled; nutlet biconvex, base strongly wrinkled, c. 2 × 1,5 mm.

Sometimes rather common in high forest; very humid forest in large tufts; wet places in high forest; primary forest along river; secondary forest; 56−533 m alt.

"Variable species and rich in different forms" (Mesterházy in Lidia 7/5: 111, 2012).

Flowering stem often dull purple; flowering spikes with mottled appearance.

H. polystachyum Cherm., incl. var. *depauperatum* Cherm. – Icon.: Fl. Gabon 44, Cyper.: 169, 2012 (nutlet; under *Mapania*).

syn.: *Mapania polystachya* (Cherm.) Lye

Herb with short erect rhizome to 2 mm ∅; stem central, solitary, 0,6−1,3 m tall, 0,2−1 cm ∅, trigonous, green to brownish, smooth at base, clearly scabrous above; leaves numerous, mostly basal, but some along the stem; sheath green, glabrous; blade flat or slightly folded, to 0,6−1,5 m long, 3−4,5 cm wide gradually narrowed into a sharp apex, margins scabrous; inflorescence terminal, a loose panicle, 12−40 cm long, 12−20 cm wide, light brown, with 6−15 primary branches 2−10 cm long; spikes cylindric, 6−8 × 1,5−2 mm, brown *mottled* with light brown, apex obtuse.

Humid forests; sometimes along rivers; occasionally rather common; c. 250 m alt.

The type of var. *depauperatum* Cherm. was not seen by Nelmes (Thollon 45, Congo-Brazzaville, Middle Congo, banks of the Congo, 1883). It is probably a depauperate specimen of *H. polystachyum*.

H. pseudomapanioides D. A. Simpson & Lye; Onana & Cheek, Red Data Book flow. pl. Cameroon: 366, 2011. – Icon.: Kew Bull. 59: 614, 2004.

syn.: *Mapania pseudomapanioides* (D. A. Simpson & Lye) Lye

Tussocky perennial herb; rhizome branching, erect, short, 2−4 mm ∅; culm single, erect, central, 60−70 cm long, 2−3 mm ∅, trigonous, ± smooth, green; leaves mostly basal, many, and one cauline; blade to 1 m long, 1,3−1,6 cm wide, apex gradually narrowed, base gradually narrowed into sheath, coriaceous, green, flat, margins prominently serrate, midrib most prominent and raised above, the 2 major lateral nerves most prominent beneath; inflorescence an irregular subspherical brownish-white head, 2,5−3,5 × 3−3,5 cm, comprising numerous crowded, fairly distinct spikes; spikes ovoid to lanceolate, 1−1,4 cm × 3−5 mm, pale brown.

Forest undergrowth; 1470−1500 m alt.

Similar to *H. subcompositum*, but with 1 central culm per plant, not several arising from lower leaf axils; involucral bracts to 50 cm long (not to 8 cm).

H. pseudomapanioides is similar to many African *Mapania* species. However, the presence of 2 floral bracts and 2 stigma branches identifies it as *Hypolytrum* (fide Simpson and Lye, Kew Bull. 59: 613, 2004). *Mapania* has 4−6 floral bracts and 3 stigma branches.

(***H. purpurascens*** Cherm.) See above under **H. heterophyllum**.

H. pynaertii (De Wild.) Nelmes, incl. var. *plicatum* (Cherm.) Nelmes; Raynal in Adansonia, Sér. 2, 8: 427, 1968; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011.

– Icon.: Ann. Mus. Congo Belge, Bot., Sér. 5, 3: pl. 28/12−17, 1910; Raynal, o.c.: 426; Fl. Gabon 44, Cyper.: 173 (nutlet), 175, 2012 (under *Mapania*).

bas.: *Mapania pynaertii* De Wild.

syn.: *Hypolytrum gabonicum* Cherm., incl. var. *plicatum* Cherm.

Perennial herb with thick woody erect or oblique rhizome 0,5−2 cm ∅; stems 1−5, erect to ± curved, lateral, often arising from beneath the lowermost leaves, 10−75 cm long, trigonous-rounded, green, sometimes becoming brownish with age, smooth, clothed in basal part with 3−5 almost bladeless tubular sheaths; leaves numerous, all basal; sheaths open, scarcely distinct, with membranous margins; blades linear, flat or folded, to 0,3−1,2 m long, 0,5−3 cm wide, green, gradually narrowing to a pointed apex, lateral nerves prominent, margins clearly scabrous; inflorescence terminal, composed of numerous (10−60) spikes aggregated into a dense hemispherical head 1−2 cm high, 1−3 cm wide; spikes ovoid to cylindric, 0,6−1 cm × 3−4 mm, (light) brown, usually made up of 20−30 dense spikoids, the whole looking globose in fruit.

Swamp forest; sometimes along streams; edges of pools; forest strip in savanna; 300−700 m alt.

H. scaberrimum Boeckeler; Raynal in Adansonia, Sér. 2, 8: 429, 1968. – Icon.: Raynal, o.c.: 426; Fl. Gabon 44, Cyper.: 175, 177, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 375, 2014.

syn.: *H. rhizomatanthum* Cherm. var. *elatum* Cherm.; *H. elatum* (Cherm.) Nelmes; *Mapania scaberrima* (Boeckeler) C. B. Clarke

Perennial herb with woody erect or oblique rhizome 1−2 cm ∅; stems 1−10, lateral, arising from the axils of old basal leaves, 10−75 cm tall, 1−5 mm ∅, trigonous-rounded to compressed, green, very scabrous at least below inflorescence, often with longitudinal scabrous ridges, bases covered with 5 ± tubular greenish sheaths; leaves numerous, basal; sheaths little distinct, open, green to orange or brown; blades linear, flat or folded, to 0,5−1,2 m long, 2−4 cm wide, gradually narrowed to a sharp apex, pseudo-petiole absent; inflorescence terminal, composed of 1 to several shortly or very shortly peduncled subglobose ebracteate heads 1,5−2,5 cm ∅, of numerous (up to 100) sessile radiant spikes, "the whole when composed of several heads forming a large dense or slightly interrupted globose to pyramidal ebracteate head 2−4 cm long, 3−5 cm broad"; "spikes distinguishable but not very clearly from another, about 15−25 in each secondary head, ellipsoid… or cylindric-lanceoloid, about 8−10 mm long and 4−5 mm thick in fruit"; inflorescence brown to pale brown.

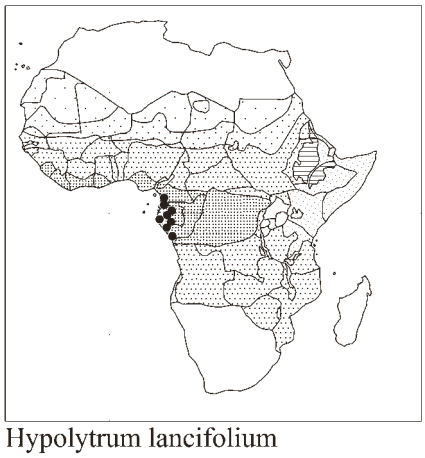
Swamp forest; steep sloping river bank; sometimes along rivers; 0−600 m alt.

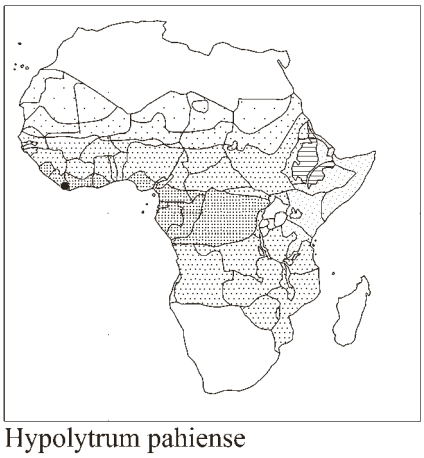
H. schnellianum Lorougnon; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 223, 2011. – Icon.: Lorougnon in Bull. Jard. Bot. Natl. Belg. 45: 183, 1975; Mesterházy in Lidia 7/5: 110, 2012; Browning & Mesterházy (2016): 12.

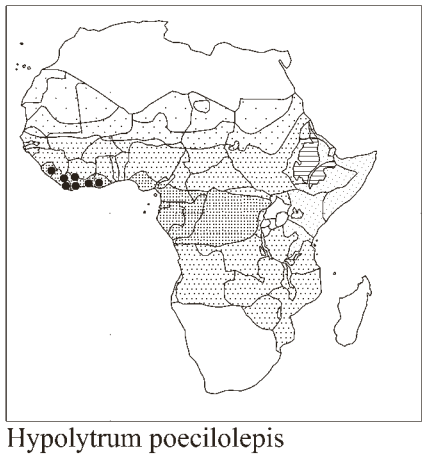
Perennial herb with woody rhizome; leaves tristichous, linear, 0,55−1,3 m long, 2−5 cm wide, ± conduplicate, base narrowed into a pseudo-petiole 25−36 cm long; stems single from leaf axils, 35−80 cm long; "inflorescence capitate, a bracteated contracted panicle of many sessile and pedicelled spikes", subglobose, 1,5−3 cm ∅.

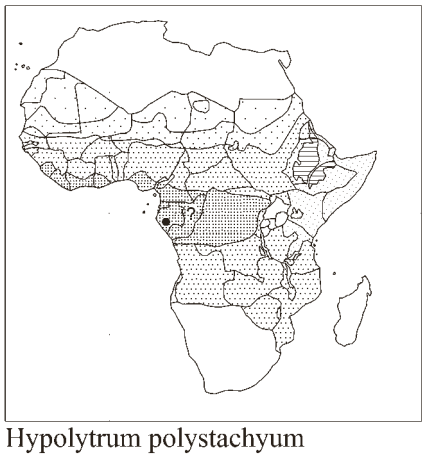
Primary forest, along stream; low ground or swamp with, i. a., *Mapania* and *Gilbertiodendron robynsianum, G. splendidum* (and 85 other species); c. 126 m alt.

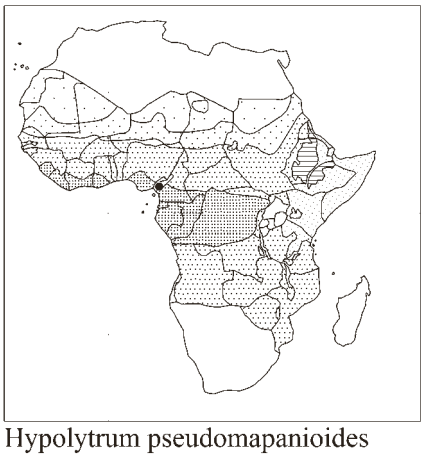
Resembling *H. secans* but plant more vigorous and stems longer (35−80 cm, not 5−40), leaves larger (0,55−1,3 m × 2−5 cm, not

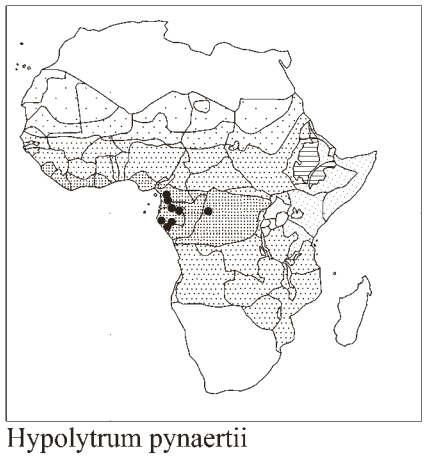

Hypolytrum lancifolium

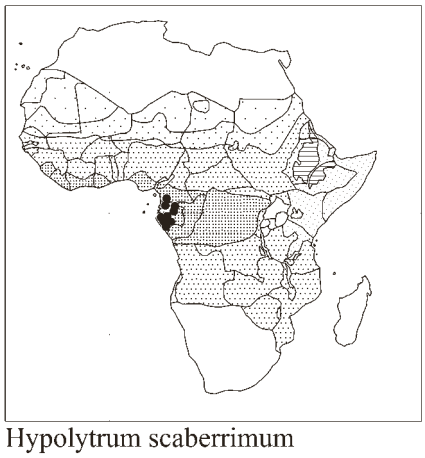

Hypolytrum pahiense

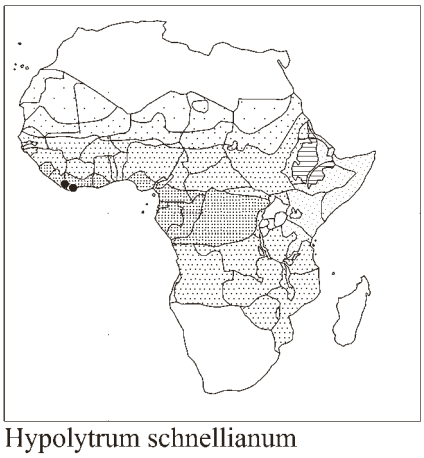

Hypolytrum poecilolepis

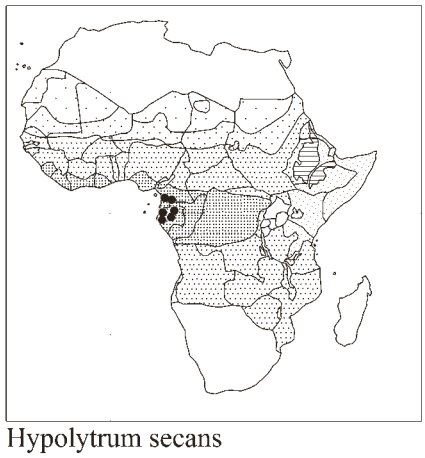

Hypolytrum polystachyum

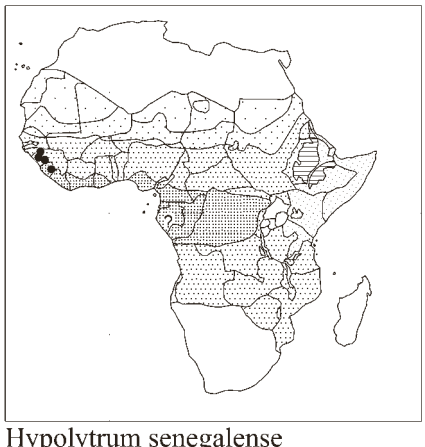

Hypolytrum pseudomapanioides

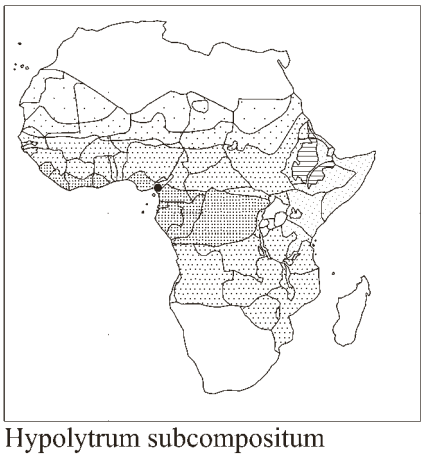

Hypolytrum pynaertii

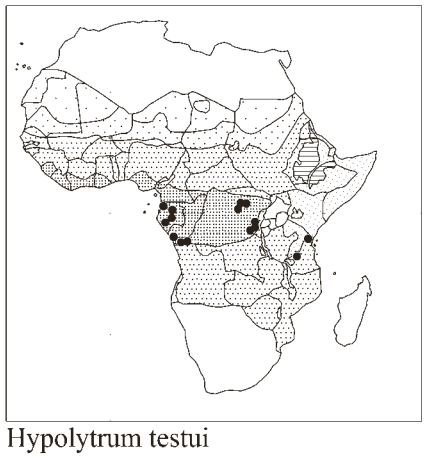

Hypolytrum scaberrimum


Hypolytrum schnellianum


Hypolytrum secans


Hypolytrum senegalense
(incl. H. africanum)


Hypolytrum subcompositum


Hypolytrum testui

0,5−0,9 × 1−2,5 cm), and young stems and inflorescences rosy to dark brown. Perhaps doubtfully distinct from *H. secans* present in Cameroon, Gabon, Congo-Brazzaville; but occurring in Liberia – SW Ivory Coast, a region rich in endemic species.

Not enumerated by Lye in Lidia 7: 95−98, 2011.

H. secans (K. Schum.) J. Raynal; Onana & Cheek, Red Data Book flow. pl. Cameroon: 366−367, 2011. – Icon.: Raynal in Adansonia, Sér. 2, 8: 428, 1968; Bot. Not. 129: 65, 1976 (partly); Fl. Gabon 44, Cyper.: 65, 2012.

bas.: *Mapania secans* K. Schum.

syn.: *Hypolytrum rhizomatanthum* Cherm., excl. var. *elatum* Cherm. (= *H. scaberrimum*).

Perennial herb with woody rhizome c. 1 cm ∅; stems 1−10, lateral, arising from lower old leaf axils, 5−40 cm long, 0,5−1,5 mm ∅, trigonous to cylindric, green, smooth to slightly scabrous below inflorescence, base covered with 5−15 brown or violet sheaths; leaves basal, numerous, strap-like; sheath little distinct, 15 cm long, margins sometimes reddish brown; blade to 50−90 cm long, 1−2,5 cm wide, green, smooth, 3-nerved, gradually narrowing to a pointed apex, margin toothed; inflorescence terminal, globose, 1−2 cm ∅, pale brown, with 10−50 sessile spikes, rarely an irregular head with short lateral branchlets then to 3 cm wide; spikes ovoid, 5−8 × 2−3 mm, (pale) brown, generally composed of 10−20 dense spikoids.

Evergreen forest; swamp forest; sometimes along streams, edges of pools; saxicolous on vertical sandstone rocks in gallery forest; epiphyte on old trunk above bank of torrent; 0−1100 m alt. (Mt. Iboudji, Gabon).

Close to *H. schnellianum*.

H. senegalense L. C. Rich. 1805, incl. *H. africanum* Nees ex Steud. – Lisowski, Fl. Rép. Guinée 2: 401−402, 2009; Fl. Gabon 44, Cyper.: 178, 2012 (as *Mapania senegalensis*). – Icon.: Cook, Aquat. pl. book, ed. 2: 78, 1996 (*Hypolytrum africanum*; detail); Lisowski, o.c. 2: fig. 486 (idem); Browning & Mesterházy (2016): 13.

syn.: *H. africanum* Nees ex Steud. 1855, non *Mapania africana* Boeckeler 1871; *H. senegalense* C. B. Clarke 1902, nom. illeg.; *H. longiscaposum* C. B. Clarke; *H. attiense* A. Chev., Explor. bot. Afrique occ. franç. 1: 707, 1920, nom. nud.; *H. attiense* A. Chev. ex Hutch. & Dalziel, pro. syn.; *Mapania longiscaposa* (C. B. Clarke) Lye; *M. senegalensis* (L. C. Rich.) Lye; *Hypolytrum nemorum* sensu Henriq., Bol. Soc. Brot. 5: 209, 1887, non (Vahl) Spreng. (in trop. Asia to W Pacific).

Perennial herb with erect woody rhizome c. 1 cm ∅; stems 1−4, lateral, arising from axils of old basal leaves, 0,35−1,2 m tall, 0,8−2 mm ∅, green to purple, trigonous, smooth below, rough towards apex, with large ferrugineous bracteate semi-sheathing bladeless sheaths at base; leaves basal, to 15−20, from about as long as to much longer than stems, 1−2 cm wide, ± conduplicate in basal part, very slenderly septate-nodulose, often greyish green beneath, sheaths with spadiceous membranous margins; inflorescence a terminal corymbiform panicle 0,5−4,5(−8) cm high, 0,8−4,5(−15) cm wide; spikes numerous, ellipsoid or obovoid in flower, ± subglobose in fruit, 4−6 mm long, 20−25-flowered, light to dark brown, often white at apex.

Riverine forest; open forest with *Gilbertiodendron*; (in rich soil) of virgin forest; swamps; by streams in forest; river in running water; waterfalls; c. 350−1350 m alt.

Sometimes viviparous.

Two collections known from Gabon (Minkébé, Woleu-Ntem).

H. subcompositum Lye & D. A. Simpson, non *Mapania subcomposita* C. B. Clarke; Onana & Cheek, Red Data Book flow. pl. Cameroon: 367, 2011. – Icon.: Nord. J. Bot. 24: 266−267, 2006; Lidia 7: 89, 2011 (as *Mapania camerunensis*).

syn.: *Mapania camerunensis* Lye

Perennial herb; rhizome 7−9 mm ∅, covered by old leaf sheaths; stems 1 to several, erect, lateral, 40−50 cm long, 1,8 mm ∅, trigonous, developed from the rhizome below leaves; basal 6−8 cm of stem covered by 5−10 leaf sheaths, higher part of stem with 1−2 nodes, each carrying a 6−10 cm long sheath; leaves basal; sheath green with easily disintegrating reddish brown margin; blade linear, flat, mid-green, 0,6−1,2 m long, 1,3−2 cm wide, apex gradually narrowed, acuminate, base gradually narrowed into sheath, margin sharply toothed at least in upper 1/3, midrib prominent; inflorescence a congested terminal subhemispherical pale-whitish corymb with up to 20 spikes and a few major branches still visible, 1,5−3 × 2,5−3,5 cm; spikes remaining fairly distinct, 8−12 × 4−5 mm, ovate, whitish with a cinnamon tinge.

Forest; 1500 m alt.

Near *H. poecilolepis* but that species has a corymbiform panicle 3−6 × 7−12 cm; and much smaller spikes, 4−9 mm long.

H. testui Cherm., p.p. excl. specim. ex Africa occid. (= *H. heterophyllum*), non *Mapania testui* Cherm. – Fl. Trop. E. Afr., Cyper.: 6, 8, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Browning & Mesterházy (2016): 3. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 326, 1983; Lye in Lidia 7: 87, 2011 (as *Mapania afroorientalis*); Fl. Gabon 44, Cyper.: 159, 162, 2012 (idem).

syn.: *Mapania afroorientalis* Lye; *Hypolytrum nemorum* sensu C. B. Clarke in Fl. Trop. Afr. 8: 487, 1902, p.p., excl. specim. Afr. occid., non (Vahl) Spreng. (a plant from Taiwan, tropical Asia through to W Pacific); *H. leucandrum* Nelmes, nom. (See below).

Perennial herb with short rhizome; stem single, central, 0,5−2 m tall, 2−7 mm ∅, trigonous, smooth to scabrid in upper part; leaves numerous, mostly basal but also 1−3 cauline, linear, 0,5−1,5 m long, 1,4−3 cm wide, gradually narrowed, flat or slightly folded, margins entire to serrulate; sheath 6,5−11 cm long, 1,4−2 cm wide, margins membranous, pale to mid-brown; inflorescence a terminal panicle, loose to rather dense, 3−15 cm high and wide, composed of 7−13 primary branches 0,6−5 cm long, each subtending 7−10 secondary branches 0,5−1,3 mm long, in turn subtending 1−5 spikes; spikes ellipsoid to obovoid, becoming globose in fruit, 3−6 × 1,5−2 mm, brown, apex blunt.

Evergreen rain-forest; forest margins; wooded river banks; moist forest in open places; swamp in forest; raised mud-bank; sloped clearing in *Piptadenia-Cephalosphaera-Allanblackia* rain-forest; sometimes frequent, and in tufts; 0−1300 m alt.

Very close to *H. heterophyllum* (cf. above under that species), but nutlet constricted, and perhaps by the absence of stolons. Also near *H. chevalieri* that has, however, larger spikes (9−18 mm long), and wrinkled nutlet without constriction.

Nelmes in Kew Bull. 10: 73, 1955, does not cite specimens from W. Africa, only from Gabon S- and E-wards.

According to Fl. Trop. E. Afr., Cyper.: 8, 2010, "some specimens [at K] were determined as *H. leucandrum* Nelmes, although this name was never published; and there appears to be no difference between these specimens and others assigned to *M. testui*".

HYPOLYTRUM

H. unispicatum Sosef & D. A. Simpson, Blumea 50: 523, 2005; Onana & Cheek, Red Data Book flow. pl. Cameroon: 367, 2011. – Icon.: Blumea 50: 524, 2005.

Perennial herb; rhizome horizontal, at least 8 cm long, 1−2 cm ∅ including old sheath bases; cataphylls all at base of and clasping the stem, ovate-lanceolate, *3−5 × 1−3 mm*, acute, reddish brown; leaves basal, linear, 0,63−1,25 m long, 0,8−1,5 cm wide, apex acute, base merging into sheath gradually, green, slightly plicate, without pseudopetiole, margin scabrid; sheath oblong, 6−12 × 1,2−1,8 cm; stems many, lateral, erect to recurved, arising from the rhizome, 3−20 cm long, c. 0,5 mm ∅, trigonous, pale greenish brown, smooth; inflorescence terminal, of *a single spike*, ellipsoid to obovoid, becoming ± globose in fruit, 3−5 × 1,5−4 mm, acute to rounded, reddish brown.

"Primary evergreen rain-forest, on a shaded, almost vertical rock face along which water seeps down"; growing with *Begonia montis-elephantis*; 200 m alt.

Seems closely related to *H. secans* from which it differs by the numerous setaceous to filiform stems with a single spike. Superficial resemblance to *Mapania africana* var. (subsp.) *filipes* because of the numerous stems with a single spike, which is, however, larger and with 4 floral bracts (not 2) per spikoid.

Known from only 2 records (in 2001 and 2002).

SYNONYMS:

Hypolytrum africanum Nees ex Steud. 1855
= **Hypolytrum senegalense**
africanum sensu C. B. Clarke in Fl. Trop. Afr. 8: 488, 1902
= **H. heteromorphum**
africanum sensu Boulvert 1977 = **H.** ? **heteromorphum**
africanum sensu Nelmes & Baldwin 1952 p.p.
= **H. heterophyllum**, **H. poecilolepis**
angolense Nelmes = **H. heterophyllum**
argenteum Kunth 1816 = **Lipocarpha chinensis**
aschersonianum Boeckeler = **Mapania soyauxii**
attiense A. Chev. 1920, nom. nud., and A. Chev. ex Hutch. & Dalziel = **Hypolytrum senegalense**
buchholzianum Boeckeler = **H. heterophyllum**
congense C. B. Clarke ex De Wild. & T. Durand
= **H. heterophyllum**
costatum Nelmes 1955, non Hochst. ex Steud. nec Thwaites 1864 = **H. pahiense**
elatum (Cherm.) Nelmes = **H. scaberrimum**
gabonicum Cherm., incl. var. *plicatum* Cherm.
= **H. pynaertii**
grande (Uittien) T. Koyama = **Principina grandis**
heterophyllum sensu Nelmes & Baldwin 1952, p.p., non Boeckeler = **Hypolytrum cacuminum**
kuntzeanum Boeckeler = **Cladium mariscus** subsp. **jamaicense**
laevigatum (Roxb.) Spreng. = **Lipocarpha chinensis**
leprieurii Nees ex Steud. = ?; plant from French Guyana (S. America)
leucandrum Nelmes, nom. = **Hypolytrum testui**
longiscaposum C. B. Clarke = **H. senegalense**
macranthum Boeckeler = **Mapania macrantha**
nemorum var. *minus* Cherm. = **Hypolytrum heterophyllum**
nemorum sensu C. B. Clarke 1902, p.p. = **H. testui**
nemorum sensu Henriq. 1887 = **H. nemorum** (Asiatic species)
purpurascens Cherm. = **H. heterophyllum**
rhizomatanthum Cherm. = **H. secans**
rhizomatanthum var. *elatum* Cherm. = **H. scaberrimum**

HYPOLYTRUM

senegalense C. B. Clarke 1902, nom. illeg.
= **H. senegalense** L. C. Rich. 1805
senegalense (Lam.) Rich. = **Lipocarpha chinensis**
senegalense sensu Nelmes & Baldwin 1952 p.p.
= **Hypolytrum poecilolepis**
soyauxii Boeckeler = **Mapania soyauxii**
testui Cherm., p.p., sensu Fl. W. Trop. Afr., ed. 2, 3/2 1972
= **Hypolytrum heterophyllum**

(HYPOPORUM)

Hypoporum distans (Poir.) Nees = **Scleria distans**
hirtellum (Sw.) Nees = **S. hirtella**
humile Nees, nom. nud. = **S. distans** var. **distans**
interruptum (L. C. Rich.) Nees = **S. interrupta** (American sp.)
lithospermum (L.) Ness = **S. lithosperma**
pergracile Nees = **S. pergracilis**

(INDOCOURTOISIA)

Indocourtoisia assimilis (Steud.) Bennet & Raizada
= **Courtoisina assimilis**
cyperoides (Roxb.) Bennet & Raizada = **C. cyperoides**

(IRIA)

Iria barbata (Rottb.) Kuntze = **Bulbostylis barbata**
barteri (Boeckeler) Kuntze = **Fimbristylis barteri**
bisumbellata (Forssk.) Kuntze = **F. bisumbellata**
consanguinea (Kunth) Kuntze = **F. complanata** subsp. **complanata**
cymosa (R. Br.) Kuntze = **F. cymosa**
falcifolia (Boeckeler) Kuntze = **F. falcifolia**
ferruginea (L.) Kuntze = **F. ferruginea**
microcarya (F. Muell.) Kuntze = **F. microcarya**
mucronata Kuntze = **F. scabrida**
pilosa (Vahl) Kuntze = **F. pilosa**
polytrichoides (Retz.) Kuntze = **F. polytrichoides**
quinquangularis (Vahl) Kuntze = **F. quinquangularis**
schoenoides (Retz.) Kuntze = **F. schoenoides**
squarrosa (Vahl) Kuntze = **F. squarrosa**
thonningiana (Boeckeler) Kuntze = **F. microcarya** var. **microcarya**
triflora (L.) Kuntze = **Abildgaardia triflora**

ISOLEPIS / *12*

Genus of c. 76 species, annual or perennial herbs occurring mostly in cool tropical and temperate regions of the southern hemisphere, particularly in Africa and Australia (Muasya & al., 2001: 342). In southern Africa, the genus has its highest species diversity in the winter rainfall area. It is recognized by having terete spikelets, bisexual flowers that lack perianth segments and the absence of a gynophore (Muasya & Simpson, 2002: 257).

"There has been much disagreement over the taxonomic position of *Isolepis*. For many years it was considered to be part of *Scirpus* s.l. and closely related to other groups in the latter on account of its spirally arranged glumes. However, this is a misinterpretation" (Goetghebeur & Simpson in Kew Bull. 46: 173, 1991).

"Boeckeler (1870; in Linnaea 36: 271−512, 691−768) rejected the genus as being an artificial group, and placed all the names applied to *Isolepis* species known to him in other genera,

particularly *Scirpus* L. Subsequently, the majority of workers followed Boeckeler, and by the early 20th century the genus was wholly discarded. An example of such a treatment is Clarke (1908; in Kew Bull. Misc. Inf., Add. Ser. 8: 1−196) who recognized *Isolepis* at the sectional level within *Scirpus*" (Muasya & al., 2001: 342).

Two species in our area are known only from the type gathering.

GARCÍA-MADRID, A. S. & al. (2015). Towards resolving phylogenetic relationships in the Ficinia clade and description of the new genus Afroscirpoides (Cyperaceae: Cypereae). *Taxon* 64: 688−702 [p. 696−697].

MUASYA, A. M. & D. A. SIMPSON (2002). A monograph of the genus Isolepis R. Br. (Cyperaceae). *Kew Bull.* 57: 257−362.

MUASYA, A. M. & al. (2000). Phylogenetic relationships within the heterogeneous Scirpus s. lat. (Cyperaceae) inferred from RBcL and TRNL-F sequence data. *In*: WILSON, K. L. & D. A. MORRISON, eds., *Monocots: Systematics and Evolution*: 610−614. CSIRO: Melbourne.

MUASYA, A. M. & al. (2001). A phylogeny of Isolepis (Cyperaceae) inferred using plastid rbcL and trnL-F sequence data. *Syst. Bot.* 26: 342−353.

MUASYA, A. M. & al. (2009). What is a genus in Cyperaceae: Phylogeny, character homology assessment and generic circumscription in Cyperaceae. *Bot. Rev*. 75: 52−66 [62−63].

REUTEMANN, A. & al. (2012). Structure of the Cyperaceae inflorescence. *Bot. Rev*. 78: 184−204 [199].

Isolepis cernua (Vahl) Roem. & Schult.; Simpson & Inglis in Kew Bull. 56: 321, 2001; Muasya & Simpson (2002): 294−301 (with full synonymy); Naczi & Ford, Sedges: uses…: 27, 48, 2008; Fl. Trop. E. Afr., Cyper.: 125, 2010 (var. *meruensis*); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 121, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 141, 1983 (*I. cernua* var. *meruensis*, as *I. meruensis*); Gordon-Gray, Cyper. Natal: 106, 1995 (nutlet); Cook, Aquat. pl. book, ed. 2: 79, 1996; Iran. J. Bot. 9: 109, 2001 (new record for Iran, with map).

bas.: *Scirpus cernuus* Vahl

syn.: *Eleogiton cernua* (Vahl) A. Dietr.; *Schoenoplectus cernuus* (Vahl) Hayek

Tufted annual or short-lived perennial herb; rhizome 1−19 × 0,3−1,5 mm, ascending, whitish; culms 1−30 cm tall, 0,2−1 mm ∅, without nodes; leaf sheaths 4−30 mm long, 0,3−1,8 mm ∅, brown or green; blades 0,1−22,2 cm long, 0,1−0,7 mm wide; inflorescence pseudolateral, not proliferating; spikelets 1−4, spherical, 1,4−9 × 1−2,4 mm, with 4−27 glumes; style bifid or trifid.

Wet areas.

N. Africa; S. Africa, Lesotho, SW-most Namibia [Clarke & Mannheimer, Cyper. Namibia: 94, 80 (map), 1999; Archer & Craven, Cyper Namibia: 22, 2004]; temperate areas of the world: Eurasia (absent from SE Asia), Australia, New Zealand, temperate S. America, N. America (a recent arrival in USA & Canada, found primarily on the Pacific coast). – An almost cosmopolitan distribution and thus has many synonyms.

"Allied species in the *Isolepis cernua* complex are reduced to varieties as there are no discrete characters to separate them" (Muasya & Simpson, o.c.: 299). Two varieties are present in tropical Africa, viz.: – var. **cernua**: A few specimens collected in E. Africa (Ethiopia, Kenya, Zimbabwe) in seasonally wet areas; widespread in the N and S hemispheres but absent from most tropical areas; – var. **meruensis** (R. W. Haines & Lye) Muasya [bas.: *I. meruensis* R. W. Haines & Lye], a tufted plant with ascending rhizome and 1(−2) spikelets; endemic to Mt Meru (Tanzania); alpine seepage; edge of spring; 2100−2800 m alt. – Three other varieties are recognized, viz.: – var. **setiformis** (Benth.) Muasya [bas.: *Scirpus arenarius* var. *setiformis* Benth.; syn.: *S. verrucosulus* Steud.; *Isolepis verrucosula* (Steud.) Nees; *I. eckloniana* Schrad., etc.] a tufted plant with ascending rhizome and 1−3 spikelets, bifid style in S. Africa, Tristan da Cunha, Australia; – var. **andina** Muasya, a tufted to mat-forming plant with horizontal rhizome in S. America: Bolivia-Ecuador in alpine habitats; – var. **platycarpa** (S. T. Blake) Muasya, a tufted plant, in Australia.

Ornamental; commonly grown in conservatories as a decorative pot-plant, in hanging baskets, or for edging (Europ. gard. flora, ed. 2, 1, Monocot.: 414, 2011).

Note: In Flora of West Tropical Africa, ed. 2, 3/2: 311, 1972, S. S. Hooper cites "*Scirpus verruculosus*" (Nees) Steud., with a note relating to the herbarium specimens Leprieur (P) and Berhaut 340. " The two records… in the flora area are doubtful; Leprieur's specimen in the Paris herbarium does not… bear an original label and Berhaut's specimen is not present in Paris."

I. costata Hochst. ex A. Rich.; Clarke & Mannheimer, Cyper. Namibia: 94, 81 (map), 1999; Muasya & Simpson (2002): 316−317; Archer & Craven, Cyper. Namibia 22, 2004; Puff & Sileshi, Pl. Simen: 242, 2005; Fl. Trop. E. Afr., Cyper.: 123, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 136, 1983; Gordon-Gray, Cyper. Natal: 106, 1995 (nutlet); Fl. Eth. & Eritrea 6: 424, 1997.

syn.: *I. setacea* (L.) R. Br. var. *abyssinica* Boeckeler; *I. costata* var. *macra* (Boeckeler) B. L. Burtt; *Scirpus macer* Boeckeler; *S. costatus* (Hochst. ex A. Rich.) Boeckeler var. *macer* (Boeckeler) Cherm.; *S. multicostatus* Baker; *Ficinia costata* (Hochst. ex A. Rich.) H. Pfeiff.

Tufted annual or short-lived perennial herb; rhizome 1−22 × 0,7−2 mm, ascending, whitish; culms 7−81 cm tall, 0,3−1,3 mm ∅; leaf sheath brown 0,8−10 cm long, 0,5−1,8 mm ∅; blade *1−9 × 0,1−0,8* mm; inflorescence pseudolateral, *proliferating*; spikelets 1−25, each 1,4−5,5 × 0,7−2,1 mm, with 4−31 glumes.

Seepage areas; stream banks (in grassland); forests; swamps; forest with *Podocarpus latifolius*, *Olea capensis*, *Syzygium guineense* at small brook, with open glades and patches of bamboo and *Hagenia abyssinica*, *Hypericum revolutum* woodland, at small stream; 1700−4000 m alt.

Namibia, S. Africa, Botswana, Lesotho, Swaziland; Madagascar.

Recognized by the reduced leaf blade, proliferating inflorescence (Gordon-Gray & al. in S. Afric. J. Bot. 75: 166, 2009), and longitudinally striate nutlets.

I. fluitans (L.) R. Br.; Muasya & Simpson (2002): 278−282 (with full synonymy); Puff & Sileshi, Pl. Simen: 242, 2005; Strugnell & al., Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Figueiredo & Smith, Pl. Angola: 180, 2008; Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Lye in Bot. Not. 127: 523, 1974 (*I. fluitans* var. *major*); Haines & Lye, Sedges & rushes E. Afr.: 139, 1983; Troupin, Fl. Rwanda 4: 449, 1988 (under *Eleogiton*); Lisowski & Malaisse, Groupements végétaux des mares et des anses calmes des rivières du plateau des Kundelungu/Plant communities of pools and backwaters of the Kundelungu Plateau, in Symoens, Résultats scientifiques, Exploration hydrobiologique du bassin du Lac Bangweolo et du Luapula, Cercle hydrobiologique de Bruxelles, Bruxelles 1989: 34; Gordon-Gray, Cyper. Natal: 106, 1995 (nutlet); Fl. Eth. & Eritrea 6: 392, 424−425, 1997 (incl. var. *major*); Cook, Aquat. & wetland pl. south. Afr.: 106, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 299, 2005; Fl. Trop. E. Afr., Cyper.: 122, 2010; Browning & Goetghebeur, Sedge genera Africa & Madag.: 53, 2017.

bas.: *Scirpus fluitans* L.

syn.: *Heleogiton fluitans* (L.) Link ex Rchb.; *Eleogiton fluitans* (L.) Link; *Cyperus fluitans* (L.) Missbach & E. H. L. Krause; *Schoenoplectus fluitans* (L.) Palla; *Scirpidiella fluitans* (L.) Rauschert; *Scirpus fluitans* L. var. *terrester* Kük. 1925, nom. nud.

Mat-forming annual or short-lived perennial herb; rhizome horizontal, green and above ground, 0,4−3 cm long, 0,3−1,2 mm ∅; culms floating or trailing, 1−80 cm long, 0,2−1,1 mm ∅; peduncle *1−19 cm* tall, 0,2−0,9 mm ∅; leaf sheath green or brown, 0,3−2,5 cm × 0,3−1,7 mm; blade 0,2−8 cm long, 0,2−1,1 mm wide; inflorescence terminal; bract shorter than inflorescence; spikelet 1, 2,4−9,4 × 0,7−2,7 mm, with 4−28 glumes.

Rain-forest with *Podocarpus latifolius*, *Olea capensis* subsp. *hochstetteri*, *Syzygium guineense* subsp. *afromontanum*, *Dombeya torrida*; floating in shallow water or terrestrial in seepage and bogs, also semiaquatic; swampy grassland; wet sloping, grassy ground; edges of pools; seasonally waterlogged habitats; humid hollows; along roads; swamps; 1200 (and less) – 3850 m alt.

Throughout the Old World; Europe, Azores; N Africa; S. Africa, Lesotho, Swaziland (not in Namibia, fide Archer & Craven, Cyper. Namibia: 22, 2004); Comoros, Madagascar, Réunion; S Asia from India, Sri Lanka, E-wards to Australia, Tasmania, New Zealand. Not in China. Absent from the Americas.

The West African specimens are without fruit, and the glumes and anthers are shorter (Fl. W. Trop. Afr., ed; 2, 3/2: 309, 1972).

Comprises 2 vars. in Africa: – var. **fluitans** [syn.: *Scirpus stolonifer* Roth; *Scirpus fluitans* L. var. *terrester* Kük. 1925, nom. nud.; *Isolepis fluitans* var. *terrestris* Hook. f.; *I. fluitans* var. *major* Lye; *I. fascicularis* (Nees) Kunth; *Eleogiton fascicularis* Nees; *Scirpus fluitans* var. *fascicularis* (Nees) Boeckeler; etc.]; the morphological variation between populations is great, and much of this is phenotypic and often depends on whether plants are growing in aquatic or terrestrial habitats; – var. **nervosa** (Hochst. ex A. Rich.) Lye [bas.: *I. nervosa* Hochst. ex A. Rich.; syn.: *I. fuscescens* Steud.; *Scirpus ramosus* Boeckeler], distinguished by the tufted habit, and culms consisting of an elongated peduncle; in Ethiopia. – A third variety, viz. var. **lenticularis** (R. Br.) Muasya, was recently "revisited" by Yu Ito & al. (Pl. Syst. Evol. 302: 231−238, 2016) who "resurrected" the name *Isolepis lenticularis* R. Br., a plant from Australia and New Zealand.

I. graminoides (R. W. Haines & Lye) Lye; Muasya & Simpson (2002): 282; Fl. Trop. E. Afr., Cyper.: 123, 2010. – Icon.: Haines & Lye in Bot. Not. 123: 431, 1970; idem, Sedges & rushes E. Afric.: 137, 1983.

bas.: *Scirpus graminoides* R. W. Haines & Lye

syn.: *Scirpidiella graminoides* (R. W. Haines & Lye) Rauschert

Mat-forming annual or short-lived perennial herb; rhizome 0,3−1,2 cm × 0,3−0,8 mm, horizontal, green, and above ground; culms 0,5−3,2 cm tall, 0,2−0,6 mm ∅; peduncle *0,2−0,5 cm* long, 0,2−0,4 mm ∅; leaf sheath green, 0,3−1,4 cm × 0,4−1 mm, *covering peduncle* and part of spikelet; blade 1,2−3,5 cm long, 0,3−1,2 mm wide; inflorescence terminal; spikelet 1, 3−7,1 × 0,9−2 mm, with 5−18 glumes.

Bogs; 3200−3500 m alt.

I. inyangensis Muasya & Goetgh. – Icon.: Muasya & Simpson (2002): 283.

syn.: *Eleogiton variegata* Goetgh., nom. invalid. (never formally published).

Mat-forming annual or short-lived perennial herb; rhizome 0,4−3,2 cm × 0,4−1,7 mm, horizontal, green, and above ground; culms 5−37 cm tall, 0,3−1,6 mm ∅, base woody; peduncle 5−36 tall, 0,3−1,1 mm ∅; leaf sheath 0,6−2,4 cm × 0,4−1,9 mm, green or brown; blade 1−61 cm long, 0,3−0,8 mm wide; inflorescence terminal; spikelet 1, 4,7−9,3 × 1,5−3 mm, with 19−59 glumes.

Seepages; seasonally flooded grassland; 1500−2300 m alt.

S. Africa, Swaziland.

Near *I. fluitans* but: culm base woody; 19−59 glumes per spikelet (not 4−28).

I. keniaensis Lye; Lye in Biol. Skr. 54: 204, 2001; Muasya & Simpson (2002): 291−292; Fl. Trop. E. Afr., Cyper.: 124, 2010. – Icon.: Lye in Nord. J. Bot. 2: 566, 1983 (nutlet); Haines & Lye, Sedges & rushes E. Afr.: 136, 1983 (nutlet).

Tufted annual or short-lived perennial herb; rhizome whitish, ascending, 0,5−1,3 cm × 0,7−1 mm; culms 3−4,8 cm tall, 0,4−0,6 mm ∅; leaf sheath brown, 1,3−2,3 cm × 0,8−1,7 mm; blade 4,5−10,7 cm long, 0,6−1 mm wide; inflorescence pseudolateral; spikelets 1−3, each *6−8,5* × 2,1−2,6 mm, with 18−27 glumes.

Bog; 3650−3850 m alt.

Superficially similar to the annual species of *Schoenoplectus* due to its erect culm-like involucral bract.

I. kilimanjarica R. W. Haines & Lye; Muasya & Simpson (2002): 292−293; Fl. Trop. E. Afr., Cyper.: 125, 2010. – Icon.: Bot. Not. 127: 523, 1974; Haines & Lye, Sedges & rushes E. Afr.: 137, 1983.

syn.: *Scirpidiella kilimanjarica* (R. W. Haines & Lye) Rauschert

Tufted annual or short-lived perennial herb; rhizome whitish, horizontal, to 1−5 × 1−1,5 mm; culms 1−3 cm tall, 0,3−0,4 mm ∅; leaf sheath brown, 4−10 × 0,4−0,8 mm; blade 3−7 cm long, 0,6−1,5 mm wide; inflorescence pseudolateral; spikelet 1, 4−5 × 2−2,5 mm.

Bog; 4350 m alt.

Known only from the type collected in 1979.

Closely related to *I. keniaensis* and *I. ruwenzoriensis*, all with striate nutlets, and well-developed leaves. Haines & Lye (1983) suggested a hybrid origin with *I. setacea* and *I. fluitans* as parents.

I. natans (Thunb.) A. Dietr.; Muasya & Simpson (2002): 339. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 141, 1983; Gordon-Gray, Cyper. Natal: 106, 1995 (nutlet); Cook, Aquat. & wetland pl. south. Afr.: 106, 2004.

bas.: *Scirpus natans* Thunb.

syn.: *Isolepis palustris* Schrad.; *I. rivularis* Schrad.; *I. pallida* Nees; *Scirpus rivularis* (Schrad.) Boeckeler

Tufted annual or short-perennial herb; rhizome whitish, weakly developed, ascending, 1−3 × 1−2 mm; culms 4,5−10 cm tall, 0,3−2,2 mm ∅; leaf sheath brown, 0,8−1,4 cm × 0,6−1 mm; blade 0,5−1,8 cm long, 0,2−1,5 mm wide; inflorescence pseudolateral, occasionally proliferating; spikelets ovate, 1−3, each 2,1−4,7 × 1,3−2 mm, with 8−45 glumes.

Swampy grassland; in pools among rocks; streams; often growing partly submerged in water, but the leaves are self-supporting; terrestrial plants develop into compact tufts (Cook, l.c.); springs; often rooting on aquatic plants; 100−2300 m alt.

S. Africa.

I. omissa J. Raynal; Muasya & Simpson (2002): 315; Puff & Sileshi, Pl. Simen: 242, 2005. – Icon.: Raynal in Adansonia, Sér. 2, 17: 55, 1977; Fl. Eth. & Eritrea 6: 420, 1997.

Tufted annual herb forming *dwarf tussocks*; culms 0,8−1 cm tall, 0,3−0,4 mm ∅; leaf sheath 3 × 0,6 mm, green; blade 0,5−1,4 cm

long, 0,3 mm wide; inflorescence pseudolateral; spikelet 1, 2,5−2,7 × 1,4−1,5 mm, with 8−10 glumes.

Grassland; 3300−3900 m alt.

Near *I. sepulcralis*.

I. ruwenzoriensis R. W. Haines & Lye; Lye in Biol. Skr. 54: 204, 2001; Muasya & Simpson (2002): 292; Fl. Trop. E. Afr., Cyper.: 124, 2010. – Icon.: Bot. Not. 127: 524, 1974; Haines & Lye, Sedges & rushes E. Afr.: 138, 1983.

syn.: *Scirpidiella ruwenzoriensis* (R. W. Haines & Lye) Rauschert

Tufted annual or short-lived perennial herb; rhizome 0,5−1,5 cm × 0,5−0,7 mm, ascending, white; culms 2,8−5 cm tall, 0,3−0,5 mm ∅; leaf sheath 1−1,6 cm × 0,4−0,7 mm, brown; blade 2,7−4,2 cm long, 0,5−0,6 mm wide; inflorescence pseudolateral; spikelets 1−2, each 3,5−4,2 × 1,2−1,6 mm, with 6−9 glumes.

Bog; 3850 m alt.

Only known from the type collected in 1951.

Closely related to *I. setacea*.

I. sepulcralis Steud. (takes its name from the locality in St Helena, Napoleon's grave); Muasya & Simpson (2002): 337−339 (See Note below referring to synonyms); Fl. Trop. E. Afr., Cyper.: 125, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 140, 1983; Gordon-Gray, Cyper. Natal: 111, 1995 (nutlet); Browning & Goetghebeur, Sedge genera Africa & Madag.: 53, 2017.

syn.: *Fimbristylis exigua* Boeckeler; *Scirpus griquensium* C. B. Clarke 1894 (name only), 1897/98; *S. antipodus* V. J. Cook; See also note below.

Tufted annual or short-lived perennial herb; rhizome whitish, ascending, 0,1−1,2 cm × 0,3−1 mm; culms 2−26 cm tall, 0,1−0,6 mm ∅; leaf sheath 0,1−2,3 cm × 0,2−0,7 mm, brown; blade 0,1−4,3 cm long, 0,1−0,4 mm wide; inflorescence pseudolateral, occasionally proliferating; spikelets 1−5, each 1,3−4,9 × 0,7−2 mm, with 7−32 glumes.

Seepage; wet grassland; 1800−2300 m alt.

S. Africa, Botswana, Lesotho; Madagascar; Atlantic Islands: St Helena, Tristan da Cunha; introduced in Australia, New Zealand, Lesser Antilles (Martinique; Cat. seed plants West Indies: 279, 2012).

Note: Muasya & Simpson cite the following synonyms not mentioned above: *Isolepis subtilis* Kunth (S. Africa), *Scirpus cernuus* Vahl var. *subtilis* (Kunth) C. B. Clarke, and *S. chlorostachyus* Levyns (S. Africa), *Isolepis chlorostachya* (Levyns) Soják. These names figure as synonyms of **Isolepis tenuissima** (Nees) Kunth in the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (already in the version published by Govaerts & Simpson in 2007). – Gordon-Gray, Cyperaceae in Natal: 109, 1995, cited as synonyms under *I. sepulcralis*: *Scirpus chlorostachyus* auct. non Levyns 1950, and *S. cernuus* auct. non Vahl, and also gave a summary of the differences between *Isolepis sepulcralis* and *I. cernua*.

I. setacea (L.) R. Br., incl. var. *aberdarica* R. W. Haines & Lye, and subsp. *gracillima* Nyman, but *excl*. var. *abyssinica* Boeckeler (= *I. costata*); Clarke & Mannheimer, Cyper. Namibia: 94, 81 (map), 1999; Muasya & Simpson (2002): 289−291; Archer & Craven, Cyper. Namibia : 22−23, 2004; Fl. Trop. E. Afr., Cyper.: 123−124, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 121, 2010. – Icon.: Haines & Lye in Bot. Not. 130: 312, 1977 (var. *aberdarica*); idem, Sedges & rushes E. Afr.: 135, 1983; Troupin, Fl. Rwanda 4: 449, 1988; Gordon-Gray, Cyper. Natal: 111, 1995 (nutlet); Fl. Eth. & Eritrea 6: 423, 1997; Fl. Pakistan 206, Cyper.: 39, 2001; Boulos, Fl. Egypt 4: 360, 2005; Fl. China, Ill. 23: 234/19−23, 296, 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 376, 2014; Bot. Not. 151/4: cover/page, p. 29−32, 2018 (rediscovered in Scania, south. Sweden).

bas.: *Scirpus setaceus* L.

syn.: *Mariscus setaceus* (L.) Moench; *Cyperus setaceus* (L.) Missbach & E. H. L. Krause; *Schoenoplectus setaceus* (L.) Palla; *Scirpus gracillimus* Kohts 1869, nom. illeg.; *Scirpus setaceus* var. *gracillimus* (Nyman) A. Terracc., var. *digynus* Boeckeler, var. *minimus* Gaud., and var. *major* Lej.; *Isolepis sororia* sensu Podlech 1967, non Kunth; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Tufted annual or short-lived perennial herb; rhizome ascending, sometimes horizontal, whitish, 0,1−1,8 cm × 0,3−1 mm; culms 1,2−25 cm tall, 0,2−0,8 mm ∅; leaf sheath 0,2−3,3 cm × 0,3−1 mm; blade 0,1−9,8 cm long, 0,1−0,7 mm wide; inflorescence pseudolateral; spikelets 1−4, each 1,7−6,5 × 0,5−2,5 mm, with 4−35 glumes.

Moorland, soil newly laid bare; seepage; wet grassland; wet soil in swamps; along paths; streams and rivers; 2300−4100 m alt.

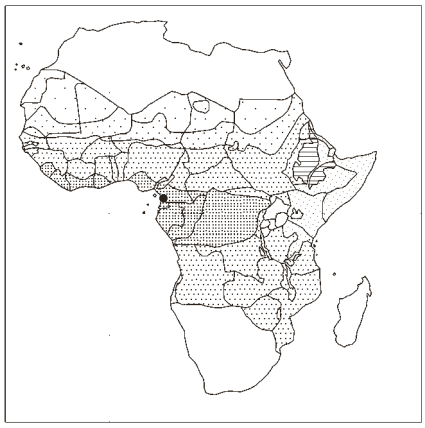
Very variable plant. Gordon-Gray, l.c., writes: "They may be slender, glabrous, sparsely tufted, with hair-like culms, supported by water or lodged on damp substrate [appearing similar to slender plants of *I. cernua*…]; or they may be shorter and more branched and creeping with a slender rhizome that roots at intervals (not easily observed amongst slender branches). At highest altitudes often diminutive (±10 mm), with only tips of leaves and short culms bearing solitary spikelets exposed above wet mud. Occasionally such diminutive specimens float in shallow pools in rock depressions. Superficially there is resemblance to *I. angelica* …, but trabeculations on that achene surface finer and that achene slightly longer in relation to its width and more markedly beaked. *I. setacea* differs from *I. cernua* and *I. sepulcralis*… in the sculpturing of the achene (trabeculate in the first; minutely papillate in the other two)… Dissection of individual plants is essential if identification is to be accurate".

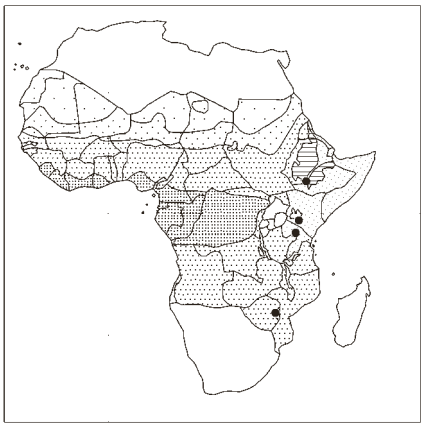
Morocco, Algeria, Egypt; Madeira; Bioko/Fernando Poo; Namibia, S. Africa, Lesotho; widespread in alpine and subalpine regions in Europe; Saudi Arabia, Yemen (Wood, Handbook Yemen flora: 332, 1997), Syria, Lebanon, Turkey, Iran, Pakistan, Caucasus, Russian Middle Asia, India E-wards to W China, Sikkim. Introduced in Australia, Tasmania, New Zealand, W N. America (USA, California), Costa Rica, Bolivia.

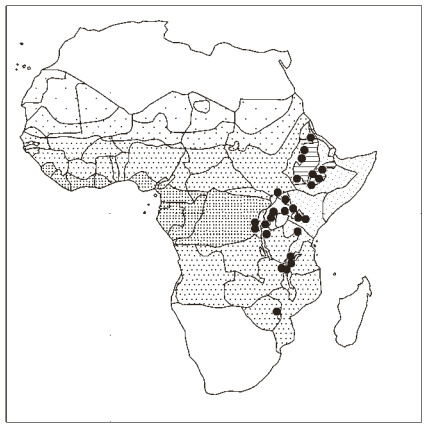
An ornamental plant (Simpson & Inglis in Kew Bull. 56: 321, 2001).

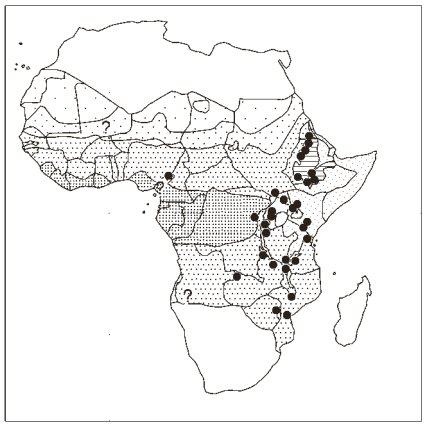
SYNONYMS:

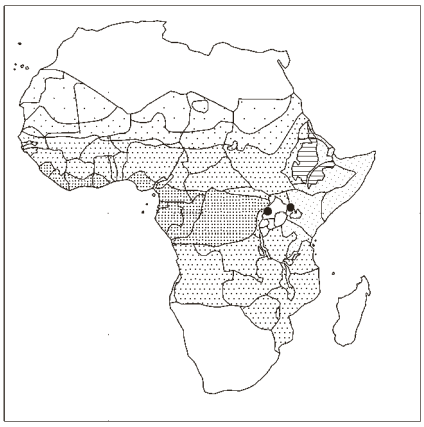
Isolepis abyssinica Hochst. ex C. B. Clarke
= **Bulbostylis hispidula**
ambigua Zoll. = **Schoenoplectiella lateriflora**
articulata (L.) Nees = **S. articulata**
ascolepis A. Rich. = **Ascolepis eriocauloides**
atropurpurea (Retz.) Roem. & Schult. = **Eleocharis atropurpurea**
barbata (Rottb.) R. Br. = **Bulbostylis barbata**
bellula Steud. = **Lipocarpha hemisphaerica**
bivalvis (Lam.) Steud. = **Fimbristylis bivalvis**
boeckeleri Oliv.= **Mariscus dubius** subsp. **dubius**
breviculmis Kunth = **Bulbostylis humilis**
chlorostachya (Levyns) Soják = **Isolepis sepulcralis** or **I. tenuissima ?**
collina Kunth = **Bulbostylis contexta**
commutata Nees = **Ficinia gracilis**

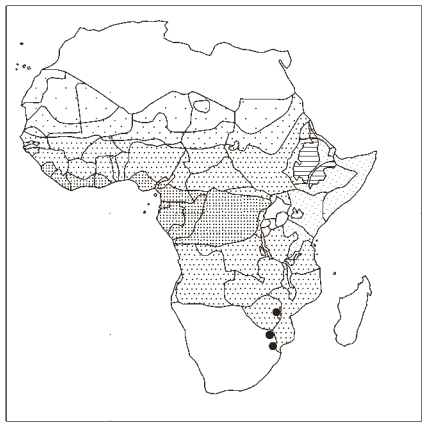

Hypolytrum unispicatum

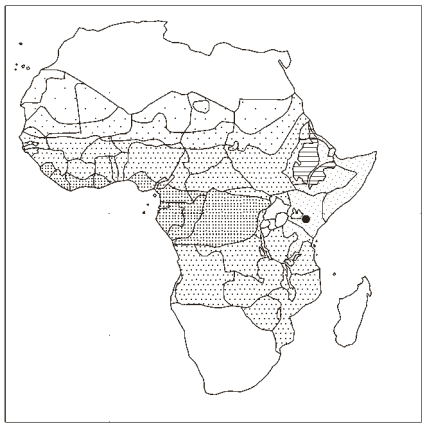

Isolepis cernua

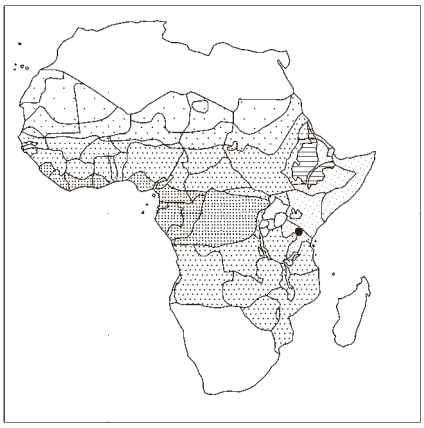

Isolepis costata

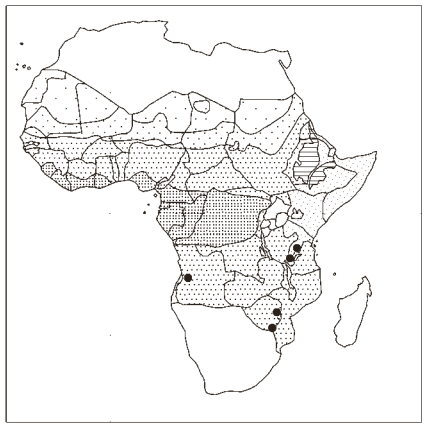

Isolepis fluitans

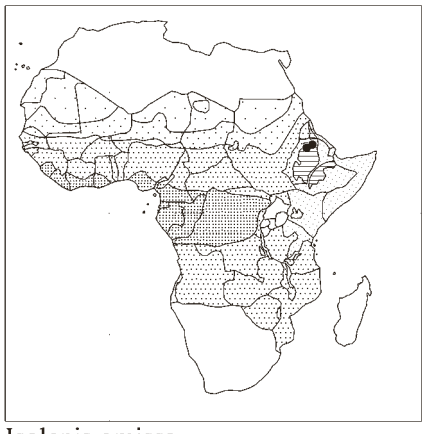

Isolepis graminoides

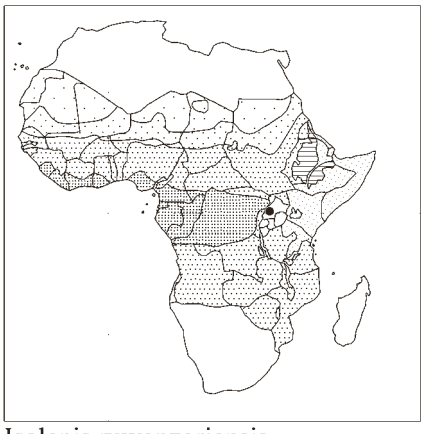

Isolepis inyangensis

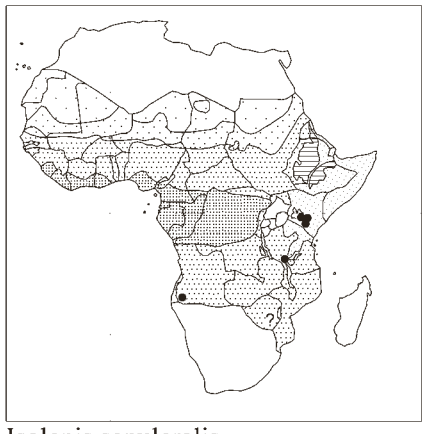

Isolepis keniaensis


Isolepis kilimanjarica


Isolepis natans


Isolepis omissa


Isolepis ruwenzoriensis


Isolepis sepulcralis

complanata (Retz.) Roem. & Schult. = **Fimbristylis complanata**
consocialis Steud. = **Bulbostylis hispidula** subsp. **hispidula**
coronaria (Vahl) Roem. & Schult. = **Cyperus leucocephalus**
corymbosa Roth ex Roem. & Schult. = **Schoenoplectus corymbosus**
corymbosa auct. non Roth ex Roem. & Schult. = **Sch. heptangularis**
costata Hochst. ex A. Rich. var. *macra* (Boeckeler) B. L. Burtt = **Isolepis costata**
densa (Wall.) Schult. = **Bulbostylis densa**
dichotoma (L.) Kunth = **Fimbristylis dichotoma**
dichroa Steud. = **Eleocharis atropurpurea**
dipsacea (Rottb.) Roem. & Schult. = **Fimbristylis dipsacea**
echinocephala Oliv. = **Oxycaryum cubense**
eckloniana Schrad. = **Isolepis cernua** var. **setiformis**
elachista Schult. = **Fimbristylis dipsacea** var. **dipsacea**
exilis Kunth = **Bulbostylis hispidula**
fascicularis Sieber ex Kunth = **B. barbata**
fascicularis (Nees) Kunth = **Isolepis fluitans** var. **fluitans**
ferruginea (L.) Schltdl. = **Fimbristylis ferruginea**
fibrosa Nees 1834 = **Ficinia filiformis**
ficinoides Steud. 1855 = **Ficinia filiformis**
filamentosa (Vahl) Roem. & Schult. = **Bulbostylis filamentosa**
filamentosa auct., non (Vahl) Roem. & Schult. = **Ficinia filiformis**
fistulosa (Forssk.) Delile = **Schoenoplectiella articulata**
fluitans (L.) R. Br. var. *major* Lye and var. *terrestris* Hook. f. = **Isolepis fluitans** var. **fluitans**
foenicularis Schrad. ex Boeckeler = **Bulbostylis barbata**
fuscescens Steud. = **Isolepis fluitans** var. **nervosa**
globulifera Steud. = **Scirpoides holoschoenus** subsp. **globifera**
glomerata Schrad. = **Fimbristylis cymosa** subsp. **cymosa**
grandispica Steud. = **Bolboschoenus grandispicus**
hamulosa (M. Bieb.) Kunth = **Mariscus hamulosus**
hemisphaerica (Roth) A. Dietr. = **Lipocarpha hemisphaerica**
holoschoenus (L.) Roem. & Schult. = **Scirpoides holoschoenus**
humilis Kunth = **Bulbostylis humilis**
humillima Hochst. ex C. B. Clarke = **B. humilis**
inclinata Delile ex Barbey = **Schoenoplectus corymbosus**
juncoides Miq.= **Schoenoplectiella lateriflora**
kernii (Raymond) Lye = **Lipocarpha kernii**
kyllingioides A. Rich. = **Kyllingiella microcephala**
lineata Nees 1835, non (Michx.) Roem. & Schult. 1817 = **Ficinia gracilis**
macrocephala (Steud.) Lye = **Kyllingiella macrocephala**
martii Roem. & Schult. = **Cladium mariscus**
meruensis R. W. Haines & Lye = **Isolepis cernua** var. **meruensis**
micheliana (L.) Roem. & Schult. = **Cyperus michelianus**
micrantha (Vahl) Roem. & Schult. = **Lipocarpha micrantha**
microcephala (Steud.) Lye = **Kyllingiella microcephala**
minima Schrad. = **Lipocarpha hemisphaerica**
mucronata (L.) Fourr. = **Schoenoplectiella mucronata**
nervosa Hochst. ex A. Rich. = **Isolepis fluitans** var. **nervosa**
nigrescens (Nees) Steud. = **Eleocharis nigrescens**

obtusifolia (Lam.) Roem. & Schult. = **Fimbristylis cymosa** subsp. **cymosa**
oryzetorum Steud. = **Schoenoplectiella lateriflora**
pallida Nees = **Isolepis natans**
palustris Schrad. = **I. natans**
perrottetii Steud. = **Bulbostylis hispidula** subsp. **hispidula**
pilosa (Willd.) Steud. = **B. pilosa**
polyphylla A. Rich. = **Kyllingiella polyphylla**
prolongata Nees = **Schoenoplectiella articulata**
proxima Steud. = **Schoenoplectiella proxima**
puberula Kunth = **Bulbostylis thouarsii**
pubescens (Poir.) Roem. & Schult. = **Fuirena pubescens**
pubiculmis Boeckeler = **Bulbostylis hispidula** subsp. **hispidula**
rehmannii (Ridl.) Lye = **Lipocarpha rehmannii**
rivularis Schrad. = **Isolepis natans**
roylei Nees = **Schoenoplectiella roylei**
schimperiana Hochst. ex A. Rich. = **Bulbostylis schimperiana** (Hochst. ex A. Rich.) C. B. Clarke, non **Bulbophyllum schimperianum** Kraenzl. (Orchidaceae) in Sosef & al., Check-list pl. vascul. Gabon: 307, 2006 (sphalm.)
schoenoides Kunth = **Bulbostylis schoenoides**
schweinfurthiana (Boeckeler) Oliv. = **B. abortiva**
senegalensis Hochst. ex Steud. = **Schoenoplectiella senegalensis**
setacea (L.) R. Br. var. *abyssinica* Boeckeler = **Isolepis costata**
setifolia A. Rich. = **Eleocharis setifolia**
sieberi Schrad. = **Bulbostylis thouarsii**
simillima Steud. = **Schoenoplectiella supina**
sororia sensu Podlech 1967, non Kunth = **Isolepis setacea**
squarrosa auct., non (L.) Kunth = **Lipocarpha micrantha**
subsquarrosa (Muhl.) Schrad.= **L. micrantha**
subtilis Kunth = **Isolepis sepulcralis** or **I. tenuissima** ?
subtristachya Schweinf. = **Bulbostylis barbata**
supina (L.) R. Br. = **Schoenoplectiella supina**
tenuissima D. Don 1825 = **Bulbostylis densa**
thouarsii (Roem. & Schult.) Nees 1834, non *I. thouarsii* A. Dietr. 1803 = **B. thouarsii**
thunbergii Schrad. = **Scirpoides holoschoenus** subsp. **thunbergii**
trifida Nees = **Bulbostylis densa** subsp. **afromontana**
trollii (Kük.) Lye = **Ficinia trollii**
uninodis Del. = **Schoenoplectiella erecta** subsp. **erecta**
verrucosula (Steud.) Nees = **Isolepis cernua** var. **setiformis**
verruculosa (Steud.) Steud. – See **Scirpus verruculosus**
wallichiana Schult. = **Bulbostylis barbata** subsp. **barbata**
willdenowii Steud. 1855 = **B. barbata** subsp. **barbata**

(JUNCELLUS)

"The genus was created to include *Cyperus* species with dorsiventrally flattened pistils"…[however such] "are found in a vast array of species and originated within many different *Cyperaceae* genera… making the character unreliable to define generic delimitations…" (Reynders & al. in Taxon 60: 887, 2011).

The authors of Flora of China 23: 164, 2010, do not treat *Juncellus* as a genus apart, although it is stated (p. 165) that "one of us (Dai) believes that is *Kyllinga* and *Pycreus* are treated as separate genera from *Cyperus*, as they are in this treatment, then *Juncellus* and *Mariscus* should also be separated from *Cyperus* on account of their distinct morphological characters".

Browning & Goetghebeur in their "Sedge genera of Africa and Madagascar" (2017), maintain *Juncellus* as a separate genus. We have not followed this treatment. – See Synonyms below.

SYNONYMS:

Juncellus alopecuroides (Rottb.) C. B. Clarke
= **Cyperus alopecuroides**
altus Turrill = **Pycreus altus**
ater C. B. Clarke = **P. melas**
calanthus Peter = **Cyperus laevigatus** subsp. **distachyos**
distachyos (All.) Turrill = **Cyp. laevigatus** subsp. **distachyos**
laevigatus (L.) C. B. Clarke = **Cyp. laevigatus**
laevigatus subsp. *distachyos* (All.) P. H. Davis = **Cyp. laevigatus** subsp. **distachyos**
laevigatus var. *junciformis* C. B. Clarke = **Cyp. laevigatus** subsp. **laevigatus**
lateralis (Forssk.) M. R. Almeida = **Cyp. laevigatus** subsp. **laevigatus**
michelianus (L.) Blatt. & McCann = **Cyp. michelianus**
minutus C. B. Clarke = **Cyp. minutus**
pumilus Peter = **Pycreus pumilus**
pustulatus (Vahl) C. B. Clarke = **Cyperus pustulatus**
pygmaeus (Rottb.) C. B. Clarke = **Cyp. michelianus** subsp. **pygmaeus**

(KOBRESIA)

The genus *Schoenoxiphium* Nees, with a few species also named under **Kobresia**, were transferred to *Carex* by the Global Carex Group (Bot. J. Linn. Soc. 179: 1–42, vide p. 26–28, 2015).

SYNONYMS:

Kobresia dregeana (Kunth) T. Koyama
= **Schoenoxiphium rufum**
kunthiana (Kük.) T. Koyama = **S. sparteum**
lehmannii (Nees) T. Koyama = **S. lehmannii**
rufa(Nees) T. Koyama = **S. rufum**
spartea (Wahlenb.) T. Koyama = **S. sparteum**

KYLLINGA / c. *61*

Kyllinga Rottb. 1773, nom. conserv. (occasionally spelled *Kyllingia*)

syn.: *Cyperus* L. subgen. *Kyllinga* (Rottb.) J. V. Suringar 1898 (for synonyms see also Kükenthal in Engler, Pflanzenreich IV. 20/101: 566–614, 1936). Names of subdivisions of *Kyllinga* were published by Reynders & al. in Taxon 60: 885–889, 2011. The genus in named after the Danish botanist Peder Lauridsen Kylling (c. 1640–1696) whose best known work is *Viridarium Danicum* published in 1688; an alphabetic list of c. 1100 plant species occurring in the crown lands of the Danish king.

A genus of c. 74 species; a small number of which have a nearly cosmopolitan distribution (also in southern Asia and the Americas), while the majority (75 %) have a more restricted area: over 75 % of the species occur in tropical eastern and southern Africa (Muasya & al. in J. E. Afric. Nat. Hist. 99: 70, 2010).

"Diagnostic characters for … *Kyllinga* include capitate inflorescences; spikelets with distichous glume arrangement which are shed intact; bifid style and lenticular nutlets; and laterally flattened nutlets … *Kyllinga* is either recognised as a distinct genus … or ranked as a subgenus of *Cyperus*" (Muasya & al., o.c.: 65). The

spherical or cylindrical heads of numerous crowded spikelets are subtended by involucral bracts similar to leaves.

Although *Kyllinga* is now often treated under *Cyperus* (e.g. World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, 2018), some authors maintain *Kyllinga* as a separate genus. This is the case in our treatment below; and we follow Govaerts & Simpson, World Checklist of Cyperaceae: 537–549, 2007; Goetghebeur in Kubitzki, Families and genera of vascular plants IV: 172, 1998; Flora of China 23: 246–249, 2010 (with Illustrations: 321, 333–334, 2012); Flora of Tropical East Africa, Cyperaceae: 310–346, 2010 (by Beentje), and Browning & Goetghebeur, Sedge genera of Africa and Madagascar: 55, 2017. We also propose a few new combinations in *Kyllinga*.

This in spite of the fact that "Although the genus *Kyllinga* Rottb. was incorporated in *Cyperus* more than 100 years ago … it was not until 100 years later … that it was proven beyond doubt that this is actually correct" (Lye & Cheek in Nord. J. Bot. 24: 276, 2006).

As to Flora of Tropical East Africa, l.c., the author of *Kyllinga* notes: "Many of the Kew types have been on loan for several years. Despite polite requests for access I was unable to study these types. This is combined with a shortage of time … have made this treatment less good than I would have wished, as well as incomplete in parts – including a number of indeterminates".

The present check-list comprises c. 61 species, many of which are poorly known: for 5 species the nutlet is immature; the ecology is not recorded for 2 species; and 15 species are known only from the type (c. 24 %).

HUYGH, W. & al. (2010). Easy to see but hard to name ! *Scripta Bot. Belg*. 46 (AETFAT XIX, Madagascar, 2010): 218 [about *Kyllinga*].

LARRIDON, I. & al. (2014). Taxonomic changes in C_4 Cyperus (Cypereae, Cyperoideae, Cyperaceae): combining the sedge genera Ascolepis, Kyllinga and Pycreus into Cyperus s. l. *Phytotaxa* 166: 33–48.

MUASYA, A. M. & al. (2002). Phylogenetic relationships in Cyperus L. s. l. (Cyperaceae) inferred from plastid DNA sequence data. *Bot. J. Linn. Soc*. 138: 145–153.

REID, C. S. & al. (2017). Molecular systematics of targeted flat sedges (Cyperus, Cyperaceae) of the Americas. *Plant Ecol. Evol*. 150: 343–357.

REYNDERS, M. & al. (2011). Nomenclature and typification of names of genera and subdivisions of genera in the Cypereae (Cyperaceae): 3. Names in segregate genera of Cyperus. *Taxon* 60: 885–895.

UBERTI, N. & al. (2016). Spikelet structure in cypereae (Cyperoideae-Cyperaceae). *Bot. Rev*. 82: 239–257.

Kyllinga afro-occidentalis Lye, Nord. J. Bot. 1: 744–745, 1982.

syn.: ***Cyperus afro-occidentalis*** (Lye) Huygh

Robust perennial herb growing in small clumps; *rhizome erect or ascending*, c. 2 mm ∅, stolon-like; culms 15–40 cm long, 0,6–1 mm ∅, trigonous; leaves from the lower 3–6 cm only; the upper 3–5 sheaths producing blades; blades coriaceous, flat, scabrous on margins and main nerves, to 10–15cm long, 2,5–4 mm wide; inflorescence a terminal hemispherical to globose head 6–8 mm ∅, consisting of a single spike with at least 50–80 crowded spikelets, these 1-flowered, obliquely lanceolate, 3–4 × 1,2–1,4 mm, glumes (2) ovate, white, 3–3,5 mm long.

Border of gallery forest, along road; c. 300 m alt.

Most similar to *K. nemoralis* (J. R. Forster & G. Forster) Dandy with, however, horizontal or creeping rhizome and much smaller spikelets (2–2,5 × 0,6–1 mm) and glumes (2–3,5 mm long).

Known only from the type collected in 1967.

K. afropumila Lye; Lye in Biol. Skr. 54: 204, 2001 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 327, 2010. – Icon.: Nord. J.

Bot. 1: 742, 1982; Haines & Lye, Sedges & rushes E. Afr.: 244, 1983 (under *Cyperus*).

syn.: ***Cyperus afropumilus*** (Lye) Lye

Perennial herb to 26 cm tall; base swollen, coated with fibrous remains of old leaf sheaths; culms *solitary*, 10−25 cm tall, 0,5−1 mm ∅, trigonous, glabrous; leaf sheath straw-coloured to brownish; blade linear, to 10 cm long, 1−2,5 mm wide, margins scabrid; inflorescence capitate, 5−8 × 3−4 mm, of a single large central spike, usually with 2 smaller lateral spikes; spikelets many per head, ellipsoid, 1,5−1,8 × 0,6−0,7 mm, 1-flowered.

Short grassland at track-side; c. 2440 m alt.

Known only from the type collected in 1970.

K. alba Nees (incl. *K. alata* Nees, *K. asclepidioides* Cherm., and *K. nigritana* C. B. Clarke), excl. var. *laevissima* Cherm. (= *K. cartilaginea*); non *Cyperus albus* J. Presl and C. Presl; Lye in Lidia 3: 171−172, 1995 [The *Kyllinga alata* Nees complex (Cyperaceae)]; Thulin, Fl. Somalia 4: 143, 1995 (*Cyperus alatus, C. aureoalatus*); Lye in Candollea 51: 425, 1996; Fl. Eth. & Eritrea 6: 477 (*Cyp. alatus*), 478 (*Cyp. aureoalatus*), 1997; Clarke & Mannheimer, Cyper. Namibia: 93, 78 (map), 1999 (*K. alba, K. alata*); Cabezas & al. in Belg. J. Bot. 137, 13, 2004 (Equat. Guinea); Figueiredo & Smith, Pl. Angola: 180, 2008; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Fl. Gabon 44, Cyper.: 91, 2012 (*Cyp. nigritanus*); Velayos & al., Fl. Guinea Ecuat. 11: 117, 2014 (*K. nigritana*); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 605 fig. 64/G-H, 1936 (spikelet); Lowe & Stanfield, Fl. Nigeria: Sedges : 82, 1974 (*K. nigritana*); Haines & Lye, Sedges & rushes E. Afr.: 248, 1983 (*Cyp. ascolepidioides*); Gordon-Gray, Cyper. Natal: 114, 1995 (nutlet; *K. alata, K. alba*); Fl. Eth. & Eritrea 6: 477, 1997 (*Cyp. alatus* subsp. *albus*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 302, 2005; Archer & Craven, Cyper. Namibia : 23, 2004 (*K. alba*); Pickering & Roe, Wildflowers Victoria Falls area: 58, 2009; Fl. Trop. E. Afr., Cyper.: 332, 2010 (*K. alba*); Velayos & al., Fl. Guinea Ecuat. 11: 377, 2014 (*K. alata*); Browning & Goetghebeur, Sedge genera Africa & Madag.: 55, 2017.

syn.: *Cyperus alatus* (Nees) F. Mueller subsp. *albus* (Nees) Lye (See also below under the subspecies).

Perennial (densely tufted) herb, base surrounded by strong fibres from old leaf bases; rhizome short, aromatic; culms 10−70 cm tall, 0,4−0,2 mm ∅, trigonous, glabrous or with a few hairs just below inflorescence, spaced or in dense tussocks, culm base swollen; leaf sheath pale brown to reddish, 1−14 cm long; blade 5−40 cm long, 2−7 mm wide, flat or channelled, margins and midrib scabrid; inflorescence a single sessile whitish, yellow green or pale yellow, globose head 1−2 × 0,5−2 cm with numerous sessile, 2-flowered spikelets, ovoid, 3,3−6 × 1−3 mm; glumes golden brown with conspicuously winged keel.

Grassland on sandy soil; open or dense bushland on sand; thin soil over rock; dry bushland or woodland; seasonally damp grassland; often around rock outcrops and seasonally wet sand; beside a water-furrow in cultivated ground; *Acacia-Commiphora* scrub on coarse gravelly soil; 0−2250 m alt.

Namibia, S. Africa, Botswana, Swaziland; Seychelles.

Three subspecies are distinguished: – subsp. **alata**, as var. **alata** (Nees) C. B. Clarke [bas.: *Kyllinga alata* Nees; syn.: ***Cyperus alatus*** (Nees) F. Muell. with var. *serratus* Peter & Kük.; *Kyllinga aurea* Hochst., nom. nud.; possibly *Cyp. aureoalatus* Lye, fide Fl. Trop. E. Afr., Cyper.: 334, 2010] with golden glumes often winged and with recurved mucro, and culms pubescent below inflorescence; widespread in Africa; – subsp. **alba** [syn.: ***Cyperus alatus*** (Nees) F. Muell. subsp. ***albus*** (Nees) Lye; *Kyllinga cristata* Kunth, incl. var. *exalata* Merxm.; *Cyp. cristatus* (Kunth) Mattf. & Kük., incl. var. *exalatus* Merxm.; *Kyllinga alba* Nees var. *exalata* (Merxm.) Podlech; *K. nigritana* C. B. Clarke; *Cyperus cristatus* var. *nigritanus* (C. B. Clarke) Kük.; *C. nigritanus* (C. B. Clarke) Lye: *Kyllinga alba* Nees var. *nigritana* (C. B. Clarke) Podlech; *K. alba* Nees subsp. *nigritana* (C. B. Clarke) J.-P. Lebrun & Stork; *K. alba* Nees var. *diminuta* Kük., and var. *laevissima* Cherm.; *Cyperus cartilagineus* (K. Schum.) Mattf. & Kük. var. *laevissimus* (Cherm.) Kük.; *Cyp. nigripes* (C. B. Clarke) Kük. var *grandiceps* Kük.; *Kyllinga buchananii* C. B. Clarke (See below under that species), non *Cyperus buchananii* Boeckeler, may represent an extreme state of *Kyllinga alba*, fide Gordon-Gray, Cyper. Natal: 113, 1995]; with glabrous culms, and pale glumes with straight mucro; widespread in Africa, and also in the Seychelles; – subsp. **ascolepidioides** (Cherm.) Lye [bas.: *Kyllinga ascolepidioides* Cherm.; syn.: *Cyperus ascolepidioides* (Cherm.) Kük.; *Cyp. cristatus* (Kunth) Mattf. & Kük. subsp. *ascolepidioides* (Cherm.) Lye; ***Cyp. alatus*** (Nees) F. Muell. subsp. ***ascolepidioides*** (Cherm.) Lye]; a tall plant (60−80 cm) with pale reddish brown glumes with straight mucro and serrate-ciliate margins; occurring in WC tropical Africa (type from Central African Rep., not Congo).

K. alba-purpurea Lye; Lye in Biol. Skr. 54: 204, 2001 (as *Cyperus alba-purpureus*); Fl. Trop. E. Afr., Cyper.: 334, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 248, 1983 (as *Cyperus alba-purpureus*).

syn.: *Cyperus alba-purpureus* (Lye) Lye 1982, nom. illeg., non *Cyperus albo-purpureus* Cherm. 1920; ***Cyp. rukwanus*** Huygh

Perennial herb to c. 30 cm tall; rhizome curving, 2−6 mm ∅; culms solitary per rhizome node, 25−30 cm long, 1−2 mm ∅, trigonous, glabrous; leaves to 12 cm long; sheaths (reddish) brown, the upper greenish; blades linear, flat, 8−12 cm long, c. 4 mm wide, midrib and margins scabrid; inflorescence a solitary globose head, 10−12 mm ∅, white with reddish tinge, turning straw-coloured or purplish, of a single spike; spikelets to 100 per spike, narrowly ovoid, c. 5 × 2 mm, 1−2-flowered.

Seasonally damp ground at foot of rocky outcrop; c. 2000 m alt.

Known only from the type (Robinson 4863) collected in 1962.

Also in Zambia ? (Phiri, A checklist of Zambian vascular plants: 111, 2005) (confusion with *K. albogracilis* ?). Related to *K. alba*.

K. albiceps (Ridl.) Rendle, Cat. Welwitsch's Afric. pl. 2/1: 106, 1899; Clarke & Mannheimer, Cyper. Namibia: 93, 78 (map), 1999; Archer & Craven, Cyper. Namibia 23, 2004; Fl. Trop. E. Afr., Cyper.: 335−336, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 231, 1983 (as *Cyperus merxmuelleri*).

bas.: ***Cyperus albiceps*** Ridl.

syn.: *Cyp. merxmuelleri* (Podlech) Lye; *Kyllinga merxmuelleri* Podlech

Perennial herb, to 42 cm tall, with bulbous culm base emitting *long slender* stolons; culms *solitary*, 20−40 cm long, trigonous, smooth; leaves few with blade linear, *0,5−1 mm wide*, shorter than culm; inflorescence capitate: a single rounded to ovoid head, 0,4−1 cm ∅; spikelets lanceolate-ellipsoid, c. 3,5 mm long, 2−4-flowered, straw-coloured to greenish.

Shallow pools; damp meadows; dambo (Namibia); ? – 1300−2100 m alt.

Namibia, Botswana. Distribution in other tropical-African countries needs further study (confusion with *K. bulbosa*; *K. albiceps* is treated as a synonym of *K. bulbosa* in Fl. W. Trop. Afr., ed. 2, 3/2: 304, 1972).

Our map (p. 213) is tentative.

K. albogracilis Lye; Fl. Trop. E. Afr., Cyper.: 334, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 231, 1983.

syn.: ***Cyperus albogracilis*** (Lye) Lye

Perennial herb to 42 cm tall, with short rhizomes and 2 mm thick scale-covered *stolons*; culms *solitary*, arising from the end of rhizomes and stolons, 5−40 cm long, 0,5−0,8 mm ∅, trigonous, glabrous; leaves to 20 cm long; sheath greyish green to pale reddish-brown, 6 cm long; blade linear, flat or folded, 2−20 cm long, *1−2 mm* wide, margin and primary vein scabrid; inflorescence capitate, spherical, 0,5−1 cm ∅, with a single spike; spikelets lanceolate, 2,5−4,3 × 1−1,8 mm, flattened, 2-flowered.

Dry sandy ground at base of termite mounds; open sunny woodland; grassland; 1300−1800 m alt.

Fairly widespread in Zambia.

Has been confused with *K. albiceps*.

K. aureovillosa Lye, Nord. J. Bot. 1: 743, 1982. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 245, 1983.

syn.: ***Cyperus aureovillosus*** (Lye) Lye

Tussocky perennial herb with short creeping rhizome 2−3 mm ∅; culms 15−30 cm long, 0,8−1 mm ∅, trigonous, glabrous or with scattered hairs below, densely hairy below the inflorescence; leaves from the lower 4−7 cm only; blade 2−5 cm long, 3−5 mm wide, tomentose on both surfaces; sheath greenish, densely tomentose on the side of its blade, pale reddish-brown, almost glabrous on the side of its throat, old basal sheaths slightly splitting up into fibres; *inflorescence* a globose *golden* or *amber-green* head 0,7−1 cm ∅; spikelets 4−5 × 1−1,5 mm, lanceolate, 2−3-flowered; glumes with hairy midrib; nut known only immature.

Open grassland; 2300 m alt.

Only known from the type collected in 1959 (Robinson 3054).

K. beninensis Samain, Reynders & Goetgh., Novon 16: 516, 2006; and in Akoègninou & al., Flore analytique Bénin: 104, 2006 (nom. invalid., French description only); Neuenschwander & al., Protection de la nature en Afrique de l'Ouest: liste rouge Bénin: 36, 2011. – Icon.: Novon 16: 517−518, 2006.

syn.: ***Cyperus beninensis*** (Samain, Reynders & Goetgh.) Huygh

Perennial herb with a *swollen stem base* 2−3 mm ∅, covered by persistent red-brown scales; culms few together, loosely connected, 10−20 × 0,2−0,04 cm, angular with rounded ribs, glabrous; leaves basal; blades 1,5−6 cm long, linear, enrolled when dry, scabrid on edges near tip; inflorescence capitate, of a *single white*, ovoid to globose spike, 2−5 mm, with many spirally placed spikelets, each *1−1,3 mm* long with *2 glumes* and 1 flower.

Wooded savanna.

Near *K. microbulbosa* (E. Africa) but: spikelet 1−1,3 mm long (not 2−3 mm); glume length 1−1,3 mm (not 2−2,5); 1 flower per spikelet (not 1−3).

"Identification of the specimen [Sinsin 3038] with the Flora of West Tropical Africa key(s) [out as] *K. echinata* S. S. Hooper" (Hooper 1972: 305).

K. brevifolia Rottb., excl. var. *robusta* (Boeckeler) H. Pfeiff. (= *K. pumila*). – For Flora of Tropical East Africa, Cyperaceae: 313−316 (2010), Beentje proposed a subdivision of *K. brevifolia* for the area into 2 varieties, viz. var. *brevifolia* in a wide sense, and var. *lurida* (Kük) Beentje. He was "unable to separate material [studied] on whether the involucral bracts are 'shaped like a cross' (with one erect and two spreading, as *intricata*) or 'more flaccid' (as in *brevifolia*); The colour differences between these two also seem more gradual than abrupt: 'paler' greenish or straw-coloured and golden yellow … subsp. *brevifolia* and *intricata* were distinguished on, respectively, greenish to straw-coloured and golden yellow inflorescences".

For our treatment below we have followed Beentje, who also pointed out that a "final decision … needs to be made on a worldwide basis". On the other hand, Gordon-Gray (Cyperaceae in Natal: 113−115, 1995) concluded that: "it is possible that Natal examples referred to *K. intricata* are no more than edaphic variants of the widespread *K. erecta*". And continued: "Robinson (1959) considered *K. erecta* var. *intricata* differed only in rhizome colour from [*K. brevifolia* (sub *K. colorata* (L.) Druce)] and this relationship has been substantiated by Haines & Lye (1983) who record *Cyperus brevifolius* subsp. *intricatus* for East Africa".

References: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 258, 1955 (as *Cyperus erectus* var. *intricatus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 83, 1974; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 630−631, 1985; Simpson & Inglis in Kew Bull. 56: 322−323, 2001; Clarke & Mannheimer, Cyper. Namibia: 93, 78 (map), 1999 (as *K. intricata*); Archer & Craven, Cyper. Namibia 23, 2004 (given as *K. intricata* Cherm. = *K. erecta* var. *erecta*); Cabezas & al., Cyper. Equat. Guinea in Belg. J. Bot. 137: 13, 2004; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010; Gereau & al., Lake Nyassa florist. checklist: 47, 2012 (*K. brevifolia* var. *lurida*); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015 (*K. brevifolia* var. *brevifolia*). – Icon.: J. S. Afric. Bot. 49: 290, 1983; Gordon-Gray, Cyper. Natal: 114 (*K. brevifolia*), 116 (*K. intricata*), 1995 (nutlets); Fl. Eth. & Eritrea 6: 474, 1997 (*Cyperus brevifolius* subsp. *intricatus*); Fl. Pakistan 206, Cyper.: 156, 2001; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 67, 2002; Fl. Trop. E. Afr., Cyper.: 314, 2010; Fl. China, Ill. 23: 321, 333−334, 2012; Fl. Gabon 44, Cyper.: 81, 2012 (*Cyperus brevifolius*); Verloove in Webbia 69: 213, 2014 (idem); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 379, 2014; Barker & al. in Veld & Flora 101/3: 118, 2015 (S Angola); Illustrated Cyperaceae of Korea: 489, 2016.

syn.: ***Cyperus brevifolius*** (Rottb.) Endl. ex Hassk.

Perennial herb with thin creeping rhizome to 15 cm long, 1−2 mm ∅, covered by brown scales; culms solitary, spaced along the rhizome, 5−55 cm long, 0,5−1,2 mm ∅, trigonous, glabrous, base not swollen; leaf sheath reddish to purplish, 1−7 cm long; blade linear, grooved along midrib, 3−23 cm long, 1−3 mm wide, margins and midrib scabrous; inflorescence a small globose or ovoid head, 4−10 × 4−8 mm, yellowish to dark brown or blackish; spikelets (5−10) in a single spike, many and dense, narrowly ovoid, 2,2−4,2 × 0,6−1,3 mm; glumes yellow-green with green keel (var. **brevifolia**) or dark golden brown to blackish (var. **lurida**).

Seasonally swampy grassland; secondary grassland; forest margins; forest clearing; swamp margins; stream- and lake-sides; open woodland; fallows; damp places; as weed in a wide range of (mostly) disturbed damp habitats, agricultural fields, roadsides, palm plantations, paddy fields, frequent in lawns, and may form almost pure stands, but does not seem to escape into undisturbed natural vegetation (Gordon-Gray, o.c.); – 0−2900 m alt.

Namibia, Botswana, S. Africa; Madagascar, Mauritius, Réunion and other Indian Ocean islands; S. Asia, Afghanistan, India, Sri Lanka, Pakistan, China, SE Asia, New Guinea, Philippines, Australia; often introduced, e.g. Caucasus, Azores (Verloove in Webbia 69: 214, 2014, under *Cyperus*), Gran Canaria (Verloove in Webbia 67: 97, 2012), Tenerife (Siverio & al. in Bot. Macaron. 28: 170, 2013), Portugal, S Spain; N., C. & S. America, West Indies. Tropical and subtropical regions of the Old and New Worlds. In the past decades it was able to spread to warm-temperate areas as well (Verloove, Webbbia 67: 97, 2012). A weed introduced

into the U.S.A. more than a century ago, and continues to spread northward and westward as weed of turf, pastures and roadways. It flowers 10−12 weeks after germination and produces mature seeds 3 weeks after flowering. Seeds are disseminated by wind and water and germinate without aging. A combination of frequent irrigation and mowing without removal of clippings, especially around golf course greens, enhances vegetative growth. *K. brevifolia* produces culms that produce fruit below most turfgrass mowing heights (Naczi & Ford, Sedges: uses… 48−48, 2008).

Two varieties are recognised in tropical Africa: – var. **brevifolia** [syn.: *Cyperus brevifolius* subsp. *brevifolius* (Rottb.) Hassk.; *Cyp. erectus* (Schumach.) Mattf. & Kük. var. *intricatus* (Cherm.) Kük. and var. *auratus* (Nees) Kük; *Kyllinga intricata* Cherm.; *Cyperus brevifolius* subsp. *intricatus* (Cherm.) Lye 1983; *Kyllinga brevifolia* Rottb. subsp. *intricata* (Cherm.) Lye 1982 !, and (Cherm.) J.-P. Lebrun & Stork 1995; *K. erecta* Schumach. var. *intricata* (Cherm.) Kük.; *K. aurata* Nees; *K. erecta* var. *aurata* (Nees) Kük.; *Cyperus auratus* (Nees) Huygh; *Cyp. erectus* sensu Andrews, Flow. pl. Sudan 3: 357, 1956, non (Schumach.) Mattf. & Kük.; *Kyllinga colorata* (L.) Druce var. *aurata* (Cherm.) Lye]; – var. **lurida** (Kük.) Beentje [bas.: *K. erecta* Schumach. var. *lurida* Kük.; syn.: *Cyperus erectus* (Schumach.) Mattf. & Kük. var. *luridus* (Kük.) Kük.; *Kyllinga aurata* Nees var. *lurida* (Kük.) Napper; *K. colorata* (L.) Druce (See Note below) var. *lurida* (Kük.) Lye; *Cyp. brevifolius* subsp. *luridus* (Kük.) Lye; *Cyp. nigriceps* Huygh] in Kenya – Tanzania. – Two other varieties are reported from temperate and E tropical Asia, respectively, viz,. var. **leiolepis** (Franch. & Sav.) Karthik., often considered as a synonym of **K. gracillima** Miq., and var. **stellulata** (J. V. Suringar) Hooper ex Ohwi (bas.: *Cyperus brevifolius* var. *stellulatus* J. V. Suringar).

Cyperus brevifolia var. *stellulatus* Suringar [syn.: *Kyllinga brevifolia* var. *intermedia* (R. Br.) Kük.; *K. intermedia* R. Br.] is cited by Kükenthal in Engler, Pflanzenreich IV. 20/101: 603, 1936, from the southern end of Lake Kivu, Zaire, at 1700 m alt., specimen R. E. Fries 1515 (Fries, Wiss. Ergebn. Schwed. Rhodesia-Kongo-Exped. 1911−1912, 1: Bot. Untersuchungen, Ergängzungsheft: 1, 1921). The identity of this plant is uncertain, as the true var. *stellulatus* (*Kyllinga brevifolia* var. *stellulata*) occurs in S India, S China, Indonesia, New Guinea, Philippines.

The World Checklist of Selected Plant Families, Cyperaceae (Roy. Bot. Gard., Kew) consulted in 2017, recognises the following species as separate entities under **Cyperus**; they are included by us as synonyms listed above: ***Cyp. auratus*** (Nees) Huygh [based on *Kyllinga erecta* var. *aurata* (Nees) Kük.], and ***Cyp. nigriceps*** Huygh [based on *Kyllinga erecta* var. *lurida* Kük. = *K. brevifolia* var. *lurida* (Kük.) Beentje].

Note ref. to *Kyllinga colorata* (L.) Druce: it is a species of *Rhynchospora*, **R. colorata** (L.) H. Pfeiff., a plant occurring in an area from SE U.S.A. (N. America) to N S. America.

K. brunneoalata Cherm.; Fl. Gabon 44, Cyper.: 82−83, 2012.

syn.: ***Cyperus brunneoalatus*** (Cherm.) Huygh

Perennial herb with horizontal rhizome > 10 cm long, 3−4 mm ∅; culms numerous, 40−90 cm tall, 1−2 mm ∅, trigonous, smooth, slightly swollen at base; leaves in lower part of culm; lower sheaths with blades 1−3 cm long; upper sheaths with blades 10−30 cm long, 2−3 mm wide, flat, margins scabrid; inflorescence a globose head, dense, 0,6−1 cm wide; spikelet 4−5 mm long, flattened, 1−2-flowered, normally producing only 1 nutlet.

Rocky outcrops, probably on seasonally humid, thin soils; 400−700 m alt.

Differs from *K. alba* (syn.: *Cyp. cristatus*) by its long creeping rhizome, longer culms and smaller inflorescence, and reddish keeled glumes.

K. brunneoalba Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 329, 2010. – Icon.: Nord. J. Bot. 1: 742, 1982; Haines & Lye, Sedges & rushes E. Afr.: 228, 1983.

syn.: ***Cyperus brunneoalbus*** (Lye) Lye

Perennial herb to 27 cm tall with swollen culm-bases *surrounded by blackish leaf-sheath fibres*; culms crowded, 12−25 cm long, 0,5−0,8 mm ∅, trigonous, glabrous; leaves only from basal part of culm; sheath reddish-brown, the upper more straw-coloured; blade linear, 5−15 cm long, 1−2 mm wide, margin and midrib scabrid; inflorescence a terminal, ovoid to globose *brownish white* spike 0,7−1 cm long, 0,6−1 cm wide, with 1 large central spike and usually 1−3 smaller ones at base; spikelets ovoid, 2,5−3 × 1 mm, usually 3-flowered.

Shallow soil over limestone rocks; c. 420 m alt.

Only known from the type collected in 1978.

K. brunneofibrosa (Lye) J.-P. Lebrun & Stork, **comb. nov**.; Fl. Eth. & Eritrea 6: 471, 1997 (under *Cyperus*). – Icon.: Thulin, Fl. Somalia 4: 141, 1995 (idem); Candollea 51: 427, 431 (map), 1996 (idem).

bas.: ***Cyperus brunneofibrosus*** Lye in Thulin, Flora of Somalia 4: 140, 1995, English description only; Candollea 51: 423, 1996. – Type: Somalia, Bakool Province, 17 km E of Wojid (Uegit) on road to Oddur, 3°51'N & 43°23'E, 22 May 1983, J. B. Gillett & C. F. Hemming 24356 (K holotype).

Densely tussocky perennial herb with short woody rhizome; culm bases densely covered by numerous old sheaths splitting up into dense "socks" of brownish fibres; culms 5−15 cm long, 0,5−0,8 mm ∅, angular to terete, glabrous; leaves 5−8 from within the fibrous "socks", and usually 1 from lower part of culm with a light reddish-brown, membranous sheath; blades to 10 cm long, 1−2 mm wide, flat, densely short-hairy on margin and midrib; inflorescence a terminal hemispheric head 0,5−1 cm ∅, consisting of numerous crowded sessile spikes; spikelets 3−4 × 1−2 mm, ovate, brownish, 1−3-flowered.

Shallow soil over limestone rocks; in sand or loam in bushland; 150−2500 m alt.

K. buchananii C. B. Clarke, non *Cyperus buchananii* Boeckeler (= *Cyp. esculentus*); Clarke in Fl. Trop. Afr. 8: 285, 1901; Gordon-Gray, Cyper. Natal: 113, 1995 (note to *K. alba*); Figueiredo & Smith, Pl. Angola: 181, 2008.

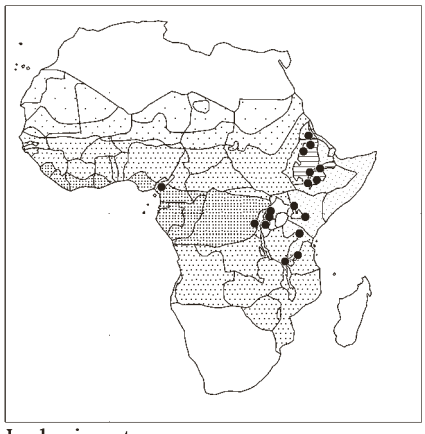
syn.: ***Cyperus sublaevicarinatus*** Mattf. & Kük.

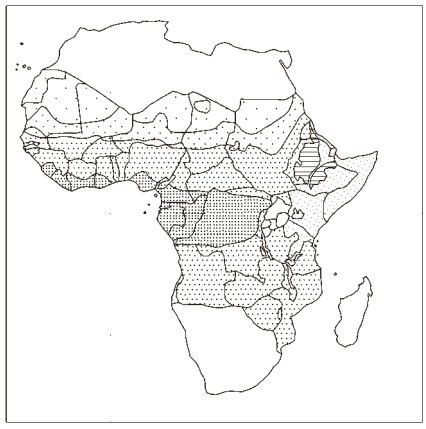
Perennial herb with tufted culms 12−30 cm tall, trigonous, not thickened at base; basal leaf sheaths brownish purple; leaves ± 2/3 of culm length, flat, 2,5−3 mm wide, long-attenuate; inflorescence a head of 1 globose or globose-cylindric dense straw-coloured spike 7−10 mm long; spikelets numerous, ovate-oblong, flat, 3,5 mm long, each giving rise to 2 nutlets, glumes wingless.

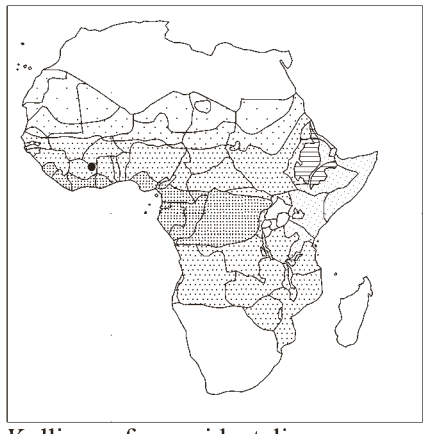
Ecology not recorded; 800−1050 m alt.

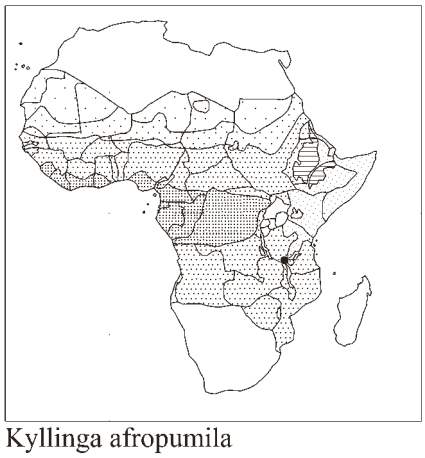
S. Africa (Natal).

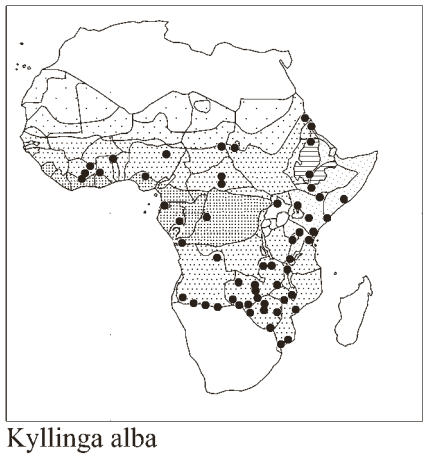
K. buchananii was established by Clarke on a specimen from Natal, segregating it from *K. alba* on the wingless glume. To Gordon-Gray (l.c.) "it seems probable Clarke's species represents … an extreme state of *K. alba*, as Clarke himself suggested". The Natal specimen (Mudd) was probably collected on the Lebombo Mts where *K. alba* occurs.

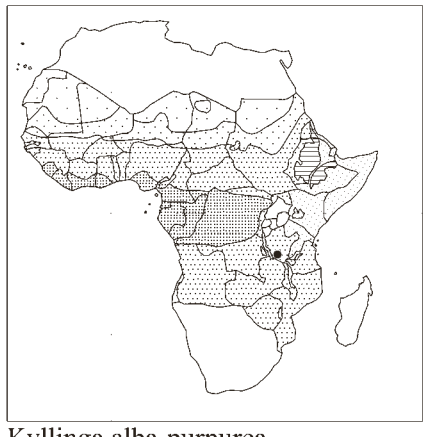

Isolepis setacea

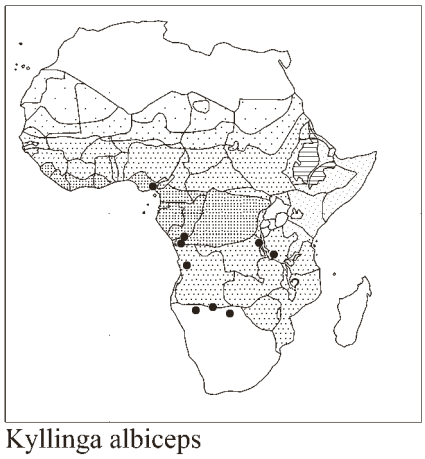


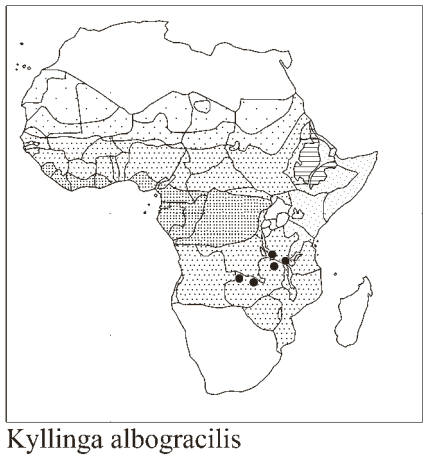

Kyllinga afro-occidentalis

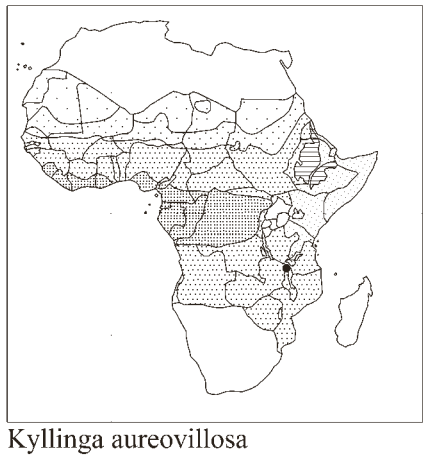

Kyllinga afropumila

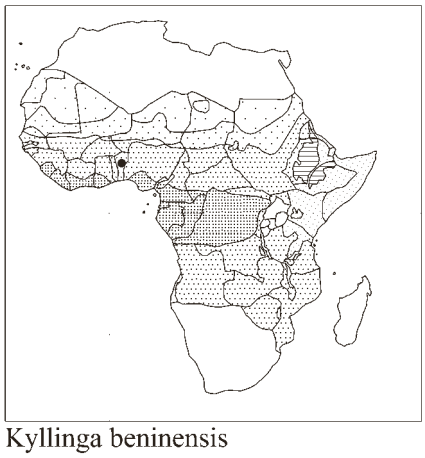

Kyllinga alba

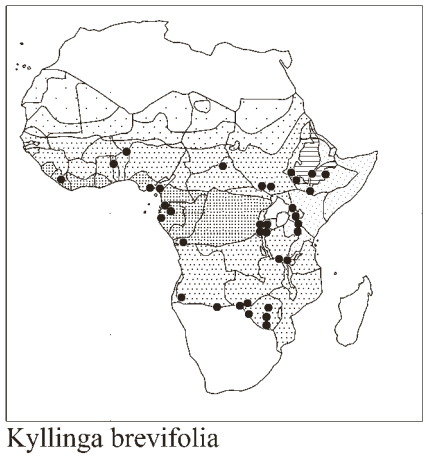

Kyllinga alba-purpurea
(Cyperus rukwanus)

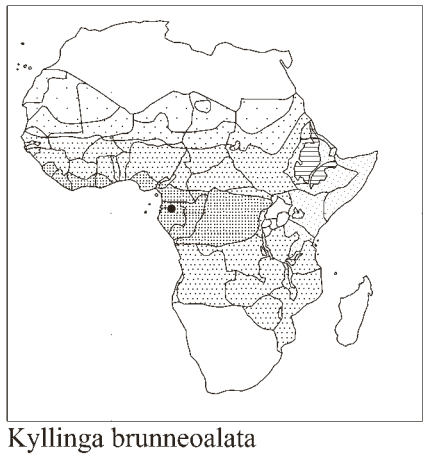

Kyllinga albiceps


Kyllinga albogracilis


Kyllinga aureovillosa


Kyllinga beninensis


Kyllinga brevifolia


Kyllinga brunneoalata

K. bulbosa P. Beauv., non *Cyperus bulbosus* Vahl – Our compilation follows the circumscription proposed in Flora of Tropical East Africa, Cyperaceae: 336−337, 2010, and by Darbyshire & al., Plants of the Sudan and S. Sudan: 112, 2015. – Lye & Thery in Flore du Gabon 44, Cyperaceae: 94, 2012, do not agree with this interpretation, and consider *K. sphaerocephala* Boeckeler as a distinct species. – Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 254−255, 1955 (as *Cyperus richardii*, incl. var. *oliganthus*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 631, 1985; Thulin, Fl. Somalia 4: 140, 1995 (as *Cyp. purpureoglandulosus*; identification of specimen Senni 103 from "Ali Javio", is "most probably an error"); Porembski & Brown in Candollea 50: 358, 1995; Prasad & Singh, Sedges Karnataka (India): 236−238, 2002; Lisowski, Fl. Rép. Guinée 1: 403, 2009; Fl. Trop. E. Afr., Cyper.: 336−337, 2010; Fl. China 23: 247, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire : 224, 2011; Thiambiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012; Masharabu & al. in Adansonia, Sér. 3, 34: 159, 2012 (Burundi); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: P. Beauvois, Fl. Oware 1: pl. 8, 1805; Engler, Pflanzenreich IV. 20/101: 569, 1936 (as *Cyperus richardii*); Lowe & Stanfield, Fl. Nigeria: Sedges: 84, 1974; Haines & Lye, Sedges & rushes E. Afr.: 227, 1983 (as *Cyp. purpureo-glandulosus*); Troupin, Fl. Rwanda 4: 459, 1988; Fl. Eth. & Eritrea 6: 470, 1997 (as *Cyp. richardii*); Fl. China 23, Ill.: 333, 2012; Fl. Gabon 44, Cyper.: 92, 2012 (as *Cyp. richardii*); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 380, 2014; Carter & al. in J. Bot. Res. Inst. Texas 10: 194−197, 2016; Kumar & al. in Nelumbo 59: 166, 2017.

syn.: ***Cyperus richardii*** Steud. 1854; *Kyllinga monocephala* Nees 1834, nom. illeg., non Rottb. 1773 (= *K. nemoralis*), nec Stokes 1812 (idem) non Muhl. 1817 (= *K. odorata*) et non Sieber ex Steud. 1840 (= *K. pumila*); *K. nana* Nees; *K. pumila* Steud. 1842, nom. illeg., non Sieber ex C. Presl 1828 (= *K. odorata* subsp. *odorata*), nec *K. pumilio* Steud. 1854 (= *K. brevifolia* subsp. *brevifolia*); *K. macrocephala* A. Rich. 1850, non *Cyperus macrocephalus* Liebm. 1851; *K. geminiflora* Steud.; *Cyperus geminiflorus* (Steud.) Wickens; *Kyllinga leucantha* Boeckeler, non *Cyperus leucanthus* Schrad.; *K. sphaerocephala* Boeckeler, incl. var. *glandulosa* C. B. Clarke; *Cyp. purpureoglandulosus* Mattf. & Kük.; *Kyllinga schimperi* Hochst. ex Engl., pro syn.; *K. macrocephala* A. Rich. (non Hook. f.) var. *angustior* C. B. Clarke; *Cyperus richardii* var. *angustior* (C. B. Clarke) Kük., and var. *oliganthus* (Cherm.) Kük.; *Kyllinga macrocephala* A. Rich. var. *oligantha* Cherm. 1935; *K. parvula* C. B. Clarke ex Rendle; *K. macrocephala* var. *oligantha* Cherm. ex Staner 1933, nom. nud.; *Cyperus triceps* (Rottb.) Endl. var. *obtusiflorus* (Boeckeler) Kük.; *Kyllinga bulbosa* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 304, 1972, p.p., excl. syn. *K. albiceps*.

Perennial herb 5−40 cm tall, with long slender whitish stolons or rhizomes 0,5−2 mm ∅, at first covered with delicate sheaths that rotten leaving a few short fibres to mark the nodes; culms solitary, swollen at base, 5−40 cm long, 0,7−1,5 mm ∅, trigonous, ridged, base swollen; leaves to 30 cm long; basal sheaths without blades; sheath pale brown, 1−8 cm long, older ones darkening, covering base of culm; blade linear, flat, 4−25 cm long, 2−5 mm wide, margins and midrib scabrous; inflorescence a dense irregular or spherical to ovoid head of 1 to several crowded white spikes, when several-spiked often triangular, 0,5−1,5 × 0,5−1,7 cm; spikelets narrowly ovoid, 2,5−4,5 × 1−1,7 mm, each 1−5-flowered; glumes white with green midrib.

Grassland in damp sites; roadsides; inselbergs; disturbed ground; humid soils; lake sides; maritime sand; a bad and persistent weed of lawns and open grassland, often becoming dominant; rice fields; 0−2300 m alt. – In the tea-growing area of Kenya the plant is a serious weed of young tea (Burkill, l.c.).

Also in ? Senegal, Gambia; not in Somalia (cf. above); Bioko/Fernando Poo; S Asia from India, Pakistan, Sri Lanka E-wards to Indo China, China; naturalized in Malaysia, E Australia; naturalized in U.S.A, Florida (Carter & al., l.c., with simplified worldwide map).

Our map (p. 217) is incomplete and provisional as there is confusion with *K. albiceps*.

According to Flore du Gabon 44, Cyper.: 93−94, 2012 (*Cyperus richardii*) Steud. =) *Kyllinga bulbosa* P. Beauv. 1805, is close to (*Cyp. purpureo-glandulosus* Mattf. & Kük. =) *Kyllinga sphaerocephala* Boeckeler, which has been included "erroneously" in *Kyll. bulbosa* P. Beauv. in Flora of Tropical E. Africa.

K. cardosoi Meneses – Icon.: Garcia de Orta 4: pl. I, 1956.

syn.: ***Cyperus cardosoi*** (Meneses) Huygh

Perennial herb; rhizome horizontal or obliquely creeping, woody, thick, densely clothed with dark purplish striate sheaths; culms many, closely arranged, 60−80 cm tall, 2 mm ∅, trigonous-flattened, grooved, smooth, base thickened and covered by sheaths; sheaths long, cuspidate, purplish, the lower ones bladeless, the upper 1−2 with short blade; blades to 15 mm long, 2−3 mm wide, flat, cuspidate; inflorescence of 1 dense spike, cylindric, 10−14 mm long, 7 mm wide; spikelets numerous, spreading, elliptic-ovate, each 3 mm long, 1-flowered.

Humid grassland; 1500 m alt.

Close to *K. melanosperma*.

Known only from the type (A. Cardoso s. n.; 1929−1930).

K. carinalaevis Lye & Mesterházy – Icon. Nord. J. Bot. 30: 386−388, 2012.

syn.: ***Cyperus carinalaevis*** (Lye & Mesterházy) Huygh

Tufted annual herb < 10 cm tall; culms 1−7 cm long, 0,2−0,5 mm ∅, trigonous to slightly compressed, glabrous, ridged; leaves from the lower 1−2 cm only; 3−5 basal leaves reduced to sheaths, these light reddish brown, prominently multi-nerved, 0,5−1 cm long, flat, ending in acute tips; 1−2 upper sheaths ending in 1−2 cm long and 1−1,5 mm wide green blades; these flat, glabrous below, margin and midrib scabrid towards apex; inflorescence a 4−6 mm wide greenish head partly concealed by ± 3 wide involucral bracts; spikelets 1-flowered, broadly ovoid, 2,5−3 × 1,5−2 mm.

Wet margin of shallow pond with *Cyperus pustulatus*, *Fimbristylis littoralis*, *Pycreus flavescens*, *Scleria sphaerocarpa* and scattered annual grasses (*Nanocyperion* association); 232 m alt.

Similar to *K. squamulata* and *K. pumila* in habit.

Known only from the type collected in 2009 in NW Benin (but the plant may occur in nearby Togo).

K. cartilaginea K. Schum.; Fl. Trop. E. Afr., Cyper.: 330−331, 2010. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 605, 1936 (spikelet; under *Cyperus*); Haines & Lye, Sedges & rushes E. Afr.: 246, 1983 (idem).

syn.: ***Cyperus cartilagineus*** (K. Schum.) Mattf. & Kük., excl. var. *angustatus* Peter & Kük. (= *Kyllinga comosipes*), var. *laevissimus* (Cherm.) Kük. (= *Kyllinga alba* subsp. *alba*), and var. *serratangulus* Peter & Kük. (= *K. serratangula*); *Kyllinga coriacea* Cherm.; *K. alba* sensu C. B. Clarke in Fl. Trop. Afr. 8: 272, 1901 p. min. p. quoad specim. Holst 2082, non Nees

Perennial herb 15− > 60 cm tall, with scale-covered stolons or rhizome 3−5 mm ∅; roots smelling aromatic; culms spaced or dense, 15−73 cm long, 1,2−3 mm ∅, trigonous, glabrous; leaves to 55 cm long; lower sheaths purple to red, 1−12 cm long; blade 20−55 cm long, 1,5−5 mm wide, scabrid on margins and midrib; inflorescence a sessile white globose or ovoid head 0,8−1,8 × 0,9−1,4 cm; spikelets many, densely packed, narrowly ovoid, 4−5,8 × 1,1−1,3 mm, 2-flowered; glumes with keel with few to many teeth.

Forest, coconut groves; beach crest; dunes; *Brachystegia* woodland; occasionally more inland in riverine situations; on sandy soil; 0−200 m alt.

Madagascar.

K. cataphyllata Huygh & Schouppe, [Scripta Bot. Belg. 46 (AETFAT XIX, Madagascar 2010): 219, 2010;] Blumea 55: 291, 2010, with figs. p. 292−293.

syn.: ***Cyperus cataphyllatus*** (Huygh & Schouppe) Huygh

Perennial herb with *ascending* rhizome sympodially branched, 0,7−1,4 mm ∅, *with conspicuous cataphylls* 1,2−2 cm long, greyish to pale brown with purple nerves; culms 0,6−63 cm long, 0,5−1 mm ∅, usually distant on rhizome, glabrous, trigonous, ridged; leaves 3−4 per culm; sheaths pale green on rear side, translucent front side, often with reddish dots, densely striate towards base; lower leaves reduced to pale brown sheaths with purple venation; upper 1−2 leaves with blade 2−9 cm long, 1,1−2,5 mm wide, margin scabrid and also midrib towards apex; inflorescence capitate, with *1* subglobose greenish white spike 3,5−7,5 mm ∅; spikelets 10−30, 2,5−3,7 × 1−1,7 mm, broadly lanceolate, acute, each with 2−3 glumes and 1 flower; keel of glumes spinulose.

Swamps; banks of small rivulets, mostly in shade on margins of montane forest.

Similar to *K. brevifolia*.

K. chlorotropis Steud.; Puff & Sileshi, Pl. Simen: 240, 2005 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 345−346, 2010 (of "uncertain occurrence"); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 577, 1936; Haines & Lye, Sedges & rushes E. Afr.: 234, 1983 (under *Cyperus*); Fl. Eth. & Eritrea 6: 473, 1997 (idem).

syn.: ***Cyperus chlorotropis*** (Steud.) Mattf. & Kük.

Tufted perennial herb with culm-bases usually covered by fibrous remians of old sheaths, base bulbous, *stolons absent*; culms 2−21 cm tall, 0,4−0,8 mm ∅, 3-angled, glabrous; leaves 1−20 cm long, blade 5−10 cm, 0,1−0,4 mm wide, margins scabrid; inflorescence a dark purple head of 1 terminal cylindric spike and 1−4 lateral spikes; spikelets 1,5−3 mm long, 1−3-flowered; glumes dark purple-black, keel green, excurrent.

Grassland; shallow soil over rocks; fallow fields; c. 1800−3000 m alt.

Saudi Arabia (Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 79, 2001), Yemen (Wood, Handbook Yemen flora: 322, 1997). – "There is some uncertainty over the status of the species in East Africa" (Darbyshire & al., l.c.). In Uganda cited from Mt Moroto, and more widespread in Kenya and Tanzania (Haines & Lye, l.c.). In Kenya cited from Eldoret, and a collection s. l. (Larridon & al. in Bot. J. Linn. Soc. 172: 112, 2013).

Very close to (*Cyperus teneristolon* =) *Kyllinga pulchella*, but lacking stolons.

"A small, easily overlooked plant of bare patches in grassland where water accumulates in the rainy season" (Wood, l.c.).

K. chrysantha K. Schum. [non *Cyperus chrysanthus* Boeckeler (= *Pycreus chrysanthus*)], *excl*. var. *comosipes* (Mattf. & Kük.) J.-P. Lebrun & Stork (= *Kyllinga comosipes*) and var. *decolorans* Kük. (= *K. comosipes* subsp. *decolorans*); Fl. Trop. E. Afr., Cyper.: 320, 322, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 229, 1983 (as *Cyperus aureo-stramineus*); Troupin, Fl. Rwanda 4: 459, 1988; Mtotomwema in Bot. Jahrb. Syst. 111: 290, 1990.

syn.: ***Cyperus aureostramineus*** Mattf. & Kük.

Perennial herb 10−80 cm tall, with creeping rhizome (frequently hidden by masses of roots and fibres from old leaf-bases), stolons very rare and brownish when present; culms densely tufted, base often swollen and bulb-like, 5−30 cm long, 0,5−1,5 mm ∅, trigonous, glabrous; leaf sheath pale brown, translucent, 1,3−6 cm long, a few of the lower sheaths without blades; blade linear, flat, canaliculate or incurved, 5−35 cm long, 1,6−3 mm wide, scabrid on main and primary veins, especially above; inflorescence capitate of 1 irregular *bright yellow*, drying orange, head, 0,5−1 cm long, 0,5−1,3 cm wide, with 1−4 spikes, usually 1 central rounded + 2 well-developed lateral ones; spikelets narrowly ovoid, 3−4 × 0,5−1 mm, 2−3-flowered.

Lake or streamside grassland on hardpan; on thin soil overlying rock; seasonally swampy grassland; 600−1900 m alt.

Also in Somalia ? (not in Thulin, Fl. Somalia 4, 1995).

K. chrysanthoides Mtot. – Icon.: Bot. Jahrb. Syst. 111: 293, 1990; Ntore & al., Red List of the endemic and range-restricted vascular plants of Burundi: 159, 2018

syn.: ***Cyperus chrysanthoides*** (Mtot.) Huygh

Perennial herb; rhizome short, thick, woody, suberect, covered by fibrous sheath remains; *stolons absent*; culms 20−30 cm tall, 1,5−2 mm ∅, ± trigonous with cilia on all major ridges; leaves 4−5 per culm, 10−11 cm long, flat, 2−5 mm wide; sheaths only on lower 4−5 cm of culm; *blades* dark green, margins and midrib *densely fibrillose*; inflorescence a *solitary dense globose spike*, bright yellow to orange, 8−10 mm long, 9−12 mm wide; involucral bracts 2−3, reflexed, only spreading asunder at a wide angle, ciliate; spikelet *1-flowered*, oblong-lanceolate, bright orange, 2,5−3 × 1,2−1,5 mm; keel of glumes densely ciliate.

Wooded grassland on black cotton soil; 1800−1900 m alt.

Resembling *K. chrysantha* (with compound 2−3-lobed spike; spikelets 2−3-flowered; involucral bracts going different ways).

Known only from the type collected in 1977 (but likely to be collected in E. Africa, incl. E. African Rift Valley grasslands).

K. comosipes (Mattf. & Kük.) Napper; Lye in Candollea 51: 422−423, 1996; Figueiredo & Smith, Pl. Angola: 181, 2008; Fl. Trop. E. Afr., Cyper.: 331, 338−339, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 229, 1983 (as *Cyperus comosipes* subsp. *decolorans*); Mtotomwema in Bot. Jahrb. Syst. 111: 291, 1990 (as *Kyllinga decolorans*).

bas.: ***Cyperus comosipes*** Mattf. & Kük.

syn.: *Kyllinga chrysantha* K. Schum. var. *comosipes* (Mattf. & Kük.) J.-P. Lebrun & Stork

Perennial tufted herb to 52 cm tall, with short rhizome and culm-bases covered by fibrous remains of old torn sheaths; culms tufted, 8−52 cm tall, 0,5−2 mm ∅, sharply triangular, each side ridged, densely scabrid at least on ridges above; leaves to 25 cm long; sheaths red-brown; blade 5−20 cm long, 1−5 mm wide, margins strongly scabrid; inflorescence capitate, (greyish) white, globose, somewhat irregular, 0,7−1,5 cm ∅, with a solitary spike

or more commonly with 1−3 lateral spikes surrounding the central spike; spikelets oblong, 3,5−6 × 1,5 mm, 2−4-flowered.

Open places in bushland; seasonally damp places in bushland and grassland; on thin soil among boulders; 700−2600 m alt.

Comprises 2 subspp.: – subsp. **comosipes** [syn.: *K. comosipes* var. *comosipes* and var. *angustata* (Peter & Kük.) Napper; *K. aurea* Thomson 1863, nom. nud.; *K. leucocephala* Boeckeler 1875, nom. illeg., non Baldwin 1825 (= *K. odorata* subsp. *odorata*), nec *Cyperus leucocephalus* Hassk. 1848 (= *Kyllinga nemoralis*) non Retz. 1788; *Kyllinga eximia* C. B. Clarke var. *kelleri* C. B. Clarke; *Cyperus eximius* (C. B. Clarke) Mattf. & Kük. var. *kelleri* (C. B. Clarke) Kük.; *Cyp. cartilagineus* (K. Schum.) Mattf. & Kük. var. *angustatus* Peter & Kük.], with small lateral spikes and dirty white larger main spike (8−15 mm ∅), widespread in trop. E. Africa; – subsp. **decolorans** (Kük.) Lye 1982 [bas.: *K. chrysantha* K. Schum. var. *decolorans* Kük.; syn.: *K. comosipes* var. *decolorans* Lye 1983; *K. decolorans* Mtot.; *Cyperus aureostramineus* Mattf. & Kük. var. *decolorans* (Kük.) Kük.; *Cyp. decolorans* (Kük.) Lye] with larger lateral pure white spikes (spike 7−10 mm ∅), occurring in SW Tanzania.

Remark in Fl. Trop. E. Afr., Cyper.: 339, 2010: "The type of *decolorans* has been identified by C. B. Clarke himself, indicating the confusion in this group !".

Our map (p. 217) is provisional.

K. controversa Steud. 1854, excl. var. *subexalata* C. B. Clarke (= *K. tenuifolia* var. *ciliata*); Fl. Eth. & Eritrea 6: 477−478, 1997 (under *Cyperus*); Puff & Sileshi, Pl. Simen: 240, 2005 (as *Cyperus controversus*).

syn.: ***Cyperus controversus*** (Steud.) Mattf. & Kük., excl. var. *subexalatus* (C. B. Clarke) Kük.; *Cyp. alatus* (Nees) F. Muell. subsp. *controversus* (Steud.) Lye; *Kyllinga triceps* var. *ciliata* sensu Rendle, Cat. Welwitsch's Afric. pl. 2/1: 103−104, 1899, p.p. quoad specim. Welwitsch 6790 p.p., 6796 p.p., 6798 (fide Kükenthal in Engler Pflanzenreich IV. 20/101: 612, 1936); *K. alba* Steud. 1842, nom. illeg., non Nees 1836; *K. dorsocrena* Nees

Tussocky perennial herb with very short rhizome; culms many, 5−40 cm tall, 0,4−1,5 mm ∅, 3-angled, glabrous, base swollen; leaves 5−30 cm long, 2−4 mm wide, flat or incurved, midrib and margins scabrid especially above; sheaths brown to purple; inflorescence single, globose to shortly ovate, white or grey-brown, 0,5−1,2 × 0,5−1 cm, with numerous crowded spikelets, each 2,5−3 mm long, ovate-lanceolate with oblique base, 1-flowered.

Grassland and bushland; damp forest-meadows; 800−2200 m alt.

K. crassipes Boeckeler, non *Cyperus crassipes* Vahl; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 256, 1955 (as *Cyperus bulbipes*); Fl. Trop. E. Afr., Cyper.: 342, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 247, 1983 (as *Cyperus bulbipes*).

syn.: ***Cyperus bulbipes*** Mattf. & Kük., incl. var. *pallescens* Kük.

Perennial herb with short creeping rhizome; *culms densely crowded along rhizome*, 10−50 cm tall, 0,8−1,5 mm ∅, trigonous, glabrous or with a few hairs just below the head, base slightly bulbous; leaf sheath pinkish to purple-brown, 1,5−8 cm long; blades several per culm, very short on basal sheaths, larger higher up, green, often with minute reddish dots, linear, slightly channelled, 10−36 cm long, *1,5−2,6 mm* wide, margins and midrib scabrid; inflorescence a single white *globose* head *0,4−1 cm* ∅ of 1 spike; spikelets many, narrowly ovoid, 1,8−3,8 × 0,5−0,7 mm; *2-flowered*.

Seasonally wet grassland; old cultivations; clearings in woodland; lawns; damp roadside banks; dying away as the ground dries; riverine forest; *Acacia* woodland; 0−1500 m alt.

Presence in S. Sudan, Equatoria, uncertain, perhaps a misidentification (Darbyshire & al., l.c.).

Confused with *K. bulbosa* that has, however, distant culms on stolons.

K. debilis C. B. Clarke, non *Cyperus debilis* R. Br.; Akoègninou & al., Fl. analyt. Bénin: 104, 2006; Lisowski, Fl. Rép. Guinée 1: 403, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 130, 2017). – Icon.: Engler, Pflanzenreich IV. 20/101: 596, 1936 (as *Cyperus leptorhachis*); Lowe & Stanfield, Fl. Nigeria: Sedges: 84, 1974; Berhaut, Fl. ill. Sénégal 9: 256, 1988 (details).

syn.: ***Cyperus leptorhachis*** Mattf. & Kük.

Annual densely tufted herb; culms 5−30 cm tall, trigonous, channelled, glabrous; leaves ± as long as culms; basal leaves reduced to brownish red sheaths ending in a small triangular lobe; blade flat, 5−12 cm long 1,5−2 mm wide; inflorescence *Mariscus*-like, a digitate fan-shaped fascicle of 1−6 roughly equal oblong spikes 8−12 × 2 mm, each with few remote obovate compressed spikelets c. 2 mm long, 1(−2)-flowered, and when these fall off from the base the inflorescence appears branched.

Seasonally very humid sands; especially on rocky outcrops; dry rocky places; termite mounds in savanna (Kirchmair & al., Flora & Veget. Sudano-Sambes.: 15, 2012).

K. echinata S. S. Hooper, non *Cyperus echinatus* (L.) Alph. Wood 1861; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012.

syn.: ***Cyperus ghanechinatus*** Huygh; *Cyp. afroechinatus* Lye

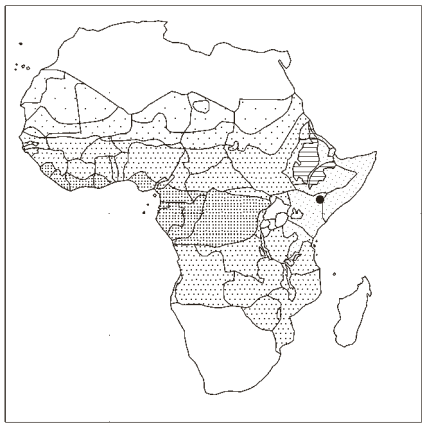
Tufted herb with capillary stems to 40 cm tall; leaf sheaths readily *splitting into black fibres*; blade capillary, 0,3−0,75 mm wide; inflorescence rounded, *0,8−1 cm wide*, with long-tipped *white* (even when dry) spikelets; glumes strongly unequal.

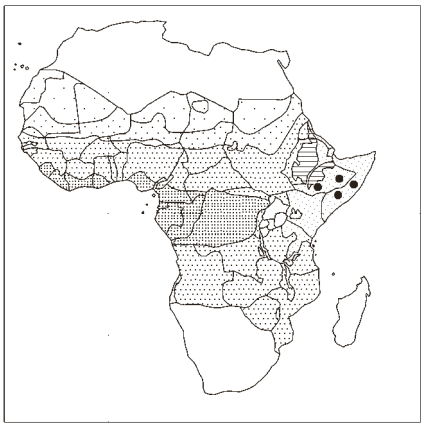
Damp sandy ground.

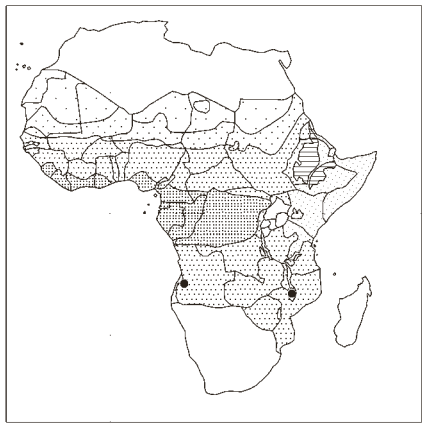
Near *K. alba*.

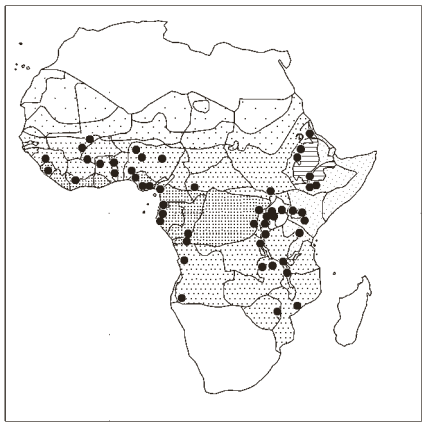
(***K. elatior*** Kunth – See below under **K. polyphylla** Willd. ex Kunth var. **elatior** (Kunth) Kük.)

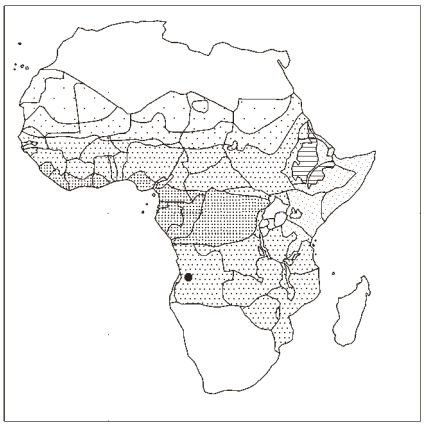
K. erecta Schumach. – Cf. comments below. The following references to *K. erecta* (*Cyperus erectus*) are indicative. Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 631−632, 1985; Simpson & Inglis in Kew Bull. 56: 323, 2001; Lisowski, Fl. Rép. Guinée 1: 403, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 130, 2017); Mesterházy in Lidia 7/5: 111, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Fl. W. Trop. Afr., ed; 2, 3/2: 306, 1972; Candollea 36: 455, 1981; Haines & Lye, Sedges & rushes E. Afr.: 238, 1983 (as *Cyperus erectus* subsp. *erectus* & subsp. *albescens*); Thulin, Fl. Somalia 4: 141, 1995 (as *Cyperus erectus* subsp. *jubensis*); Gordon-Gray, Cyper. Natal: 116, 1995 (nutlet); Fl. Eth. & Eritrea 6: 475, 1997 (as *Cyp. erectus*); Lye in Candollea 51: 427, 430 (map), 1996 (*Cyp. erectus* subsp. *jubensis*); Akoègninou & al., Fl. analyt. Bénin: 105, 2006; Fl. Trop. E. Afr., Cyper.: 321, 2010; Fl. Gabon 44, Cyper.: 84 (*Cyp. erectus* subsp. *erectus*), 87 (*Cyp. erectus* subsp. *albescens*), 2012; Velayos &

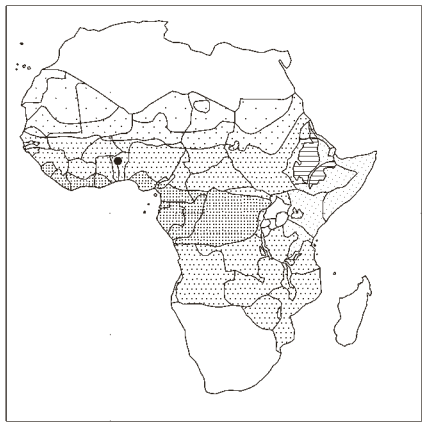

Kyllinga brunneoalba

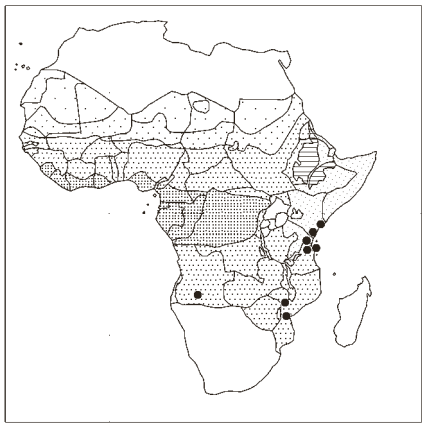

Kyllinga brunneofibrosa

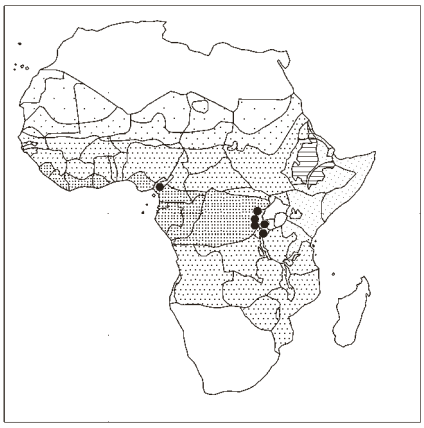

Kyllinga buchananii

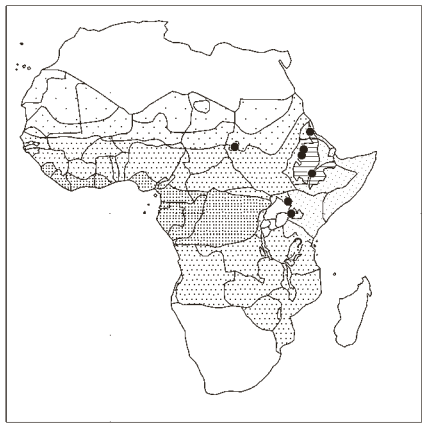

Kyllinga bulbosa

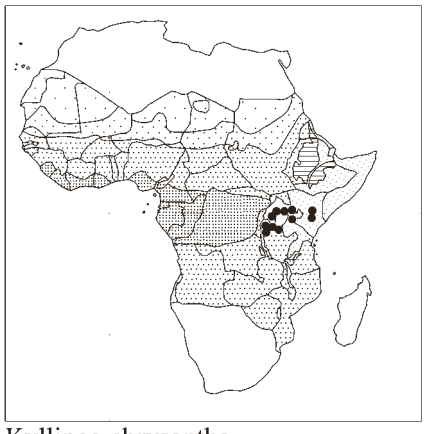

Kyllinga cardosoi

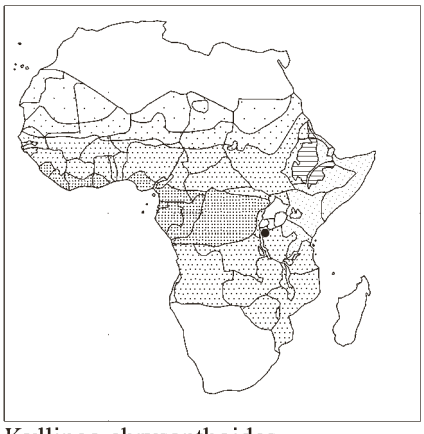

Kyllinga carinalaevis

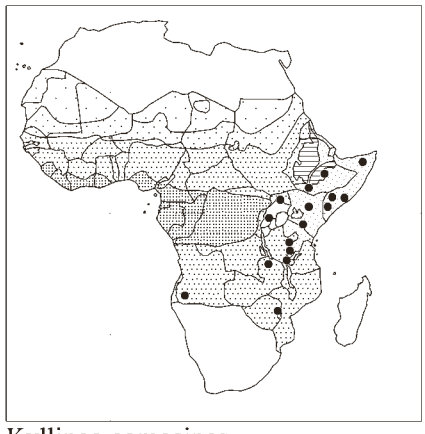

Kyllinga cartilaginea


Kyllinga cataphyllata


Kyllinga chlorotropis


Kyllinga chrysantha


Kyllinga chrysanthoides


Kyllinga comosipes

al., Fl. Guinea Ecuat. 11: 381, 2014; Browning & Goetghebeur, Sedge genera Africa & Madag.: 55, 2017.

Comments:

The circumscription, and thus the identity, of *Kyllinga erecta* is problematic. There is, e.g., divergence as to the identity of *Kyllinga erecta* var. *africana* (Kük.) S. S. Hooper [= *Cyperus obtusatus* (J. Presl & C. Presl) Mattf. & Kük. var *africanus* Kük.]. The World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, cites this name as a synonym under *Cyperus obtusatus* whereas it figures under *Cyperus erectus* subsp. *albescens* (Lye) Lye in Flore du Gabon, 44, Cyper.: 86, 2012, and also treated so by Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015 (under *Kyllinga erecta* var. *africana*). This also raises the question whether *Cyperus obtusatus* (*Kyllinga obtusata* J. Presl & C. Presl) occurs in tropical Africa. The "true" *K. obtusata* is a plant from S. America. (See our Compilation above p. 129 under *Cyperus obtusatus*). – Further comments on the circumscription of *K. erecta* are given by, e.g., Gordon-Gray (Cyperaceae in Natal: 115, 1995) relating to *K. intricata* (C. B. Clarke) Cherm. (syn.: *K. erecta* var. *intricata* C. B. Clarke), figuring under *Cyperus auratus* (Nees) Huygh 2014. (See also the present Compilation under *Kyllinga brevifolia* p. 211). Under *Kyllinga intricata*, Gordon-Gray (l.c.) cited Getliffe (1964) who during field work in Natal "found no convincing evidence of presence of *K. intricata* as distinct from *K. erecta*". And Gordon-Gray concluded that examples referred to *K. intricata* are no more than edaphic variants of the widespread *K. erecta*". – Further comments on the relationships of *K. erecta* are given by Beentje in Flora of Tropical East Africa, Cyperaceae (p. 325), 2010, under *Kyllinga melanosperma* Nees: "I… am unable to find any real differences between *K. erecta* and *K. melanosperma*. Haines and Lye key the taxa out on glume keel teeth in *melanosperma*, but that is a very inconstant character … Their second character is the number of involucral bracts, but there is continuous variation in these, and distinction based on this seems spurious to me".

Within *Kyllinga erecta* s. str. there is also divergence of opinion. As a compromise we have chosen to follow the list proposed by Govaerts & Simpson (World Checklist of Cyperaceae: 541, 2007) and The World Checklist of Selected Plant Families consulted in 2012, both under *Kyllinga*, although we do not maintain the infraspecific division in varieties or subspecies, but adding *K. jubensis* as a synonym, already proposed by Lye as a subspecies under *Cyperus erectus*.

syn.: ***Cyperus erectus*** (Schumach.) Mattf. & Kük.; *Kyl. erecta* var. *africana* (Kük.) S. S. Hooper [bas.: *Cyperus obtusatus* (J. Presl & C. Presl) Mattf. & Kük. var *africanus* Kük.]; syn.: *Kyl. erecta* subsp. *albescens* Lye; *Cyp. erectus* subsp. *albescens* (Lye) Lye; *Kyl. erecta* var. *intercedens* Kük.; *Cyp. erectus* var. *intercedens* (Kük.) Kük.; *Kyl. erecta* var. *pleiocarpa* Kük.; *Cyp. erectus* var. *pleiocarpus* (Kük.) Kük.; *Kyl. erecta* var. *schlechteri* Kük.; *Cyp. erectus* var. *schlechteri* (Kük.) Kük.; *Cyp. erectus* fa. *minor* Kük. and fa. *pallescens* Kük.; *Cyp. monocephalus* F. Muell. 1874, nom. illeg., non Roxb. 1820 nec Baker 1887 (= *Pycreus fluminalis*); *Kyl. consanguinea* Kunth 1837; *Kyl. jubensis* Chiov., non *Kyl. nervosa* subsp. *jubensis* (Mtot.) J.-P. Lebrun & Stork; *Cyp. erectus* subsp. *jubensis* (Chiov.) Lye

The following names are *excluded* from the synonymy of *Kyl. erecta* s. str.: *Kyl. erecta* var. *aurata* (Nees) Kük., and var. *intricata* (Cherm.) Kük. (both = *Kyl. brevifolia* var. *brevifolia*); *K. erecta* var. *lurida* Kük. (= *Kyl. brevifolia* var. *lurida*); *K. erecta* var. *polyphylla* (Willd. ex Kunth) S. S. Hooper (= *Kyl. polyphylla*).

Perennial herb with creeping rhizome 2–5 mm ∅, clothed in acuminate reddish-brown ± overlapping scales; culms single, densely set in a single row along the rhizome, their *bases swollen*, 12–70 cm tall, 0,8–2 mm ∅, trigonous, glabrous; leaf sheaths purplish red, the basal ones without blades, 0,5–9 cm long; blades linear, flat or channelled, 2–20 cm long, 2–4 mm wide, margins and midrib scabrid; inflorescence a solitary ovoid or subglobose greenish-yellow head (= spike), 0,5–1,2 cm high, 5–8 mm ∅; spikelets many, narrowly ovoid, 2,5–3,5 × 0,8–1 mm, 1–2-flowered.

Wet depression; (seasonal) swamps; lake, pool and dam fringes; humid grassy zones; wet sand close to the sea; fallow land; disturbed littoral thick vegetation; disturbed savanna; waste places; in ruderal communities on loose soils; weed of cultivations, invading lawns and developing a dense mat to the exclusion of desired grass species (Burkill, l.c.); 0–2500 m alt.

A variable species. Lye separated subsp. *albescens* on "fewer and shorter leaf blades and involucral bracts as well as whitish glumes and spikelets." As regards the leaf size there is plenty of variation, none of it discontinuous (Fl. Trop. E. Afr., Cyper.: 323, 2010).

"Appears to undergo hybridization and subsequent introgression with associated species… giving rise to aberrants that are close enough morphologically to be associated with typical *K. erecta*… There is close relationship between *K. erecta*, *K. brevifolia*… and *K. intricata*" (Gordon-Gray, o.c.: 115).

Bioko/Fernando Poo, S. Tomé (Figueiredo & Smith in Bothalia 41: 52, 2011); S. Africa, Lesotho, Swaziland; Comoros, Mauritius, Madagascar.

Rhizome aromatic with a bitter taste.

Our map (p. 221) is provisional.

K. eximia C. B. Clarke, excl. var. *kelleri* C. B. Clarke (= *K. comosipes* subsp. *comosipes*); Fl. Trop. E. Afr., Cyper.: 339–340, 2010. – Icon.: C. B. Clarke, Illustr. Cyper.: pl. I/8–10, 1909; Haines & Lye, Sedges & rushes E. Afr.: 244, 1983 (under *Cyperus*); Thulin, Fl. Somalia 4: 141, 1995 (idem, spikelet); Lye in Candollea 51: 427, 429 (map), 1996 (idem); Fl. Eth. & Eritrea 6: 470, 1997 (idem).

syn.: ***Cyperus eximius*** (C. B. Clarke) Mattf. & Kük., excl. var. *kelleri* (C. B. Clarke) Kük.

Perennial herb to 42 cm tall; rhizome short, horizontal and covered by fibrous remains of old basal leaf sheaths; culms tussocky 30–40 cm long, 1,5–2 mm ∅, trigonous, glabrous, base slightly swollen; leaves to 20 cm long; sheath pale red-brown, 4–9 cm long; blade 10–20 cm long, 3–8 mm wide, scabrid at least on margin and primary vein; inflorescence a single white globose head 1,3–2 cm ∅; spikelets many per cluster, ovate, *5–8* × 2 mm, *3–5-flowered*; glumes large, thick, 5–7 mm long.

Grassland; thinly wooded grassland; abandoned cultivations; marshland only seasonally wet; sandy soil in bushland, on rocks, in grassland; 0–1000 m alt.

Near *K. comosipes* but in *K. eximia*: – culms 1,5–2 mm ∅ (not 0,7–1,5 mm); – leaf blade 3–8 mm wide (not 1–4 mm); – flower head single, globose (not of 2–3 rounded spikes); – spikelets 5–8 × 2 mm (not 3–4 × 1–3 mm), fide Fl. Trop. E. Afr., Cyper.: 340, 2010. But the types of both are in need of study.

(***K. flava*** C. B. Clarke) – See below under **K. nervosa** Steud. subsp. **flava** (C. B. Clarke) Lye

(***K. inaurata*** Nees ex Boeckeler)

syn.: ***Cyperus inauratus*** (Nees ex Boeckeler) Mattf. & Kük.; *Kyllinga tetragona* Nees 1932, nomen; *K. tetragona* Nees ex C. B. Clarke 1897, non *Cyperus tetragonus* Hemsl. 1885 (American sp.), nec *Cyp. tetragonus* Elliott 1816 (American sp.).

Cyperus inauratus var. ***laevicarinatus*** Kük., treated as **Kyllinga sp. A** in Fl. Trop. E. Afr., Cyper.: 328, 2010.

Possibly annual herb to 20 cm tall, rhizome or stolons not visible; culms solitary or 2−3 close together, 12−20 cm tall, 1,2 mm ∅, trigonous, glabrous, with base slightly widened and clothed with a few fibrous remnants of old leaf sheaths; leaves to 20 cm long; sheath to 3,5 cm long; blade linear, 6−20 cm long, 2−2,5 mm wide, margins and midvein scabrous; inflorescence capitate, white, of an ovoid main spike and usually 2 smaller basal spikes; spikelets narrowly ovoid, 3,5−4 mm long, 2-flowered; nutlet unknown.

Edge of pond; 1180 m alt

Known only from the type collected in Tanzania (T4), Tabora Distr., Ngulu area, Malongwe bridge (5°28'S × 33°38'E), 10 January 1926 (Peter 34597).

According to Fl. Trop. E. Afr., Cyper.: 328, 2010, there is a pencil-written label saying "*Kyllinga serrata* Peter ? n. spec." (unpublished name). "This is most likely a *Kyllinga* – even though I have not seen the nutlets. It does not seem to be related to *K. inaurata* [S. African sp.] and there might be more closely allied taxa just over the border in Congo-Kinshasa. It does not seem to be very close of any of the East African taxa".

Taxonomic status uncertain. Not mapped.

K. inselbergensis (Lye) J.-P. Lebrun & Stork **comb. nov.**; Onana, Fl. Cameroun 40: 222, 2013 (under *Cyperus)*; Velayos & al., Fl. Guinea Ecuat. 11: 116−117, 2014 (idem). – Icon.: Fl. Gabon 44, Cyper.: 85, 2012 (idem; nutlet); Nord. J. Bot. 31: 575−576, 2013 (idem; spikelet, nutlet).

bas.: ***Cyperus inselbergensis*** Lye, Nord. J. Bot. 31 : 574, 2013; type: Cameroun, Ako-akas Rock, 23 km on the road from N'Koemvone to Ambam (old road), on rather steep slope below the rock savanna, 11°17'E, 2°43'N, on black soil in shallow depression on rock slope, 29 Nov 1974, J. J. F. E. de Wilde 7771 (holotype: WAG, isotypes: BR, K).

syn.: *Kyllinga tenuifolia* sensu Parmentier & Müller in Phytocoenologia 36: 579, 2006, non Steud.

Tufted annual herb with slender base or perennial with very short horizontal rhizome; culms 10−50 cm tall, 0,3−0,8 mm ∅, trigonous to almost winged above, obtusely longitudinally ridged, glabrous; leaves from the lower 10 cm only; sheaths green to brownish; blades to 30 cm long, c. 1,5 mm wide, flat, as young prominently scabrid on margins and midrib at least near apex; inflorescence a hemispherical to globose head 3−5 mm ∅; spikelets 1-flowered, ovate-lanceolate, 1,7−2 × 0,7−0,9 mm, strongly compressed.

Shallow soils on and near inselbergs and other rock outcrops; *Sclerio-melanotrichae-Habenarietalia procerae* community (vide Phytocoenolgia 36: 565, 573, 579, 581, 2006); on rather steep slope below the rock savanna, on black soil in shallow depression on rock slope; c. 500−700 m alt.

Near *K. tenuifolia* Steud.

(***K. jubensis*** Chiov.) – See above under **K. erecta** Schumach.

K. kilianii Muasya & D. A. Simpson; Fl. Trop. E. Afr., Cyper.: 337, 2010. – Icon.: Kew Bull. 51: 184, 1996.

syn.: ***Cyperus kilianii*** (Muasya & D. A. Simpson) Lye

Perennial herb with stolons c. 1 mm ∅; culms 19−22 cm tall, 0,6−0,9 mm ∅, trigonous, glabrous, base slightly bulbous; leaf sheath pale brown, 2,5−4,3 cm long, becoming somewhat fibrous; blade flat, 12−18 cm long, 2−3 mm wide, margins scabrid; inflorescence capitate, greenish brown, with a terminal spike 1,4−2 cm long, 6−7 mm ∅, and 1−3 smaller lateral spikes; spikelets many, dense, pale olive green, lanceolate-ovoid, 3,5−4 × 1−1,3 mm, acute.

Seepage areas; margins of permanent swamps; c. 2000 m alt.

Near *K. pulchella*.

K. mbitheana Muasya – Icon.: J. E. African Nat. Hist. 99 !: 67, 69, 71−73, 2010.

syn.: ***Cyperus mbitheanus*** (Muasya) Huygh

Tufted perennial herb, base hardened; culms 5,5−19 cm tall, 0,8−1,5 mm ∅, scapose, trigonous, glabrous; leaf sheath 1,2−3,9 cm long, 1,2−2,2 mm wide, remains of old sheaths fibrous; blade to 22 cm long, 0,9−2 mm wide, canaliculate, glabrous or margins scabrid; inflorescence a white globose spike comprising over 40 spikelets, 1,2−1,5 × 1,2−1,5 cm !; spikelets 3−6 × 1,5−2,5 mm, flattened, comprising *to 10 fertile flowers*.

Savanna woodland; 500−1500 m alt.

Near *K. brunneoalba*, *K. microbulbosa*; their distribution areas are not overlapping.

K. melanosperma Nees, *excl*. var. *elata* (Steud.) J.-P. Lebrun & Stork and subsp. *elata* (Steud.) Lye (= *K. polyphylla*) – The true *K. elata* Steud. is a plant from the Comoros (Boivin s. n.). – Our treatment follows Flora of Tropical East Africa, Cyperaceae: 323−325, 2010 (*K. elata* Steud. is treated there on p. 346, as a synonym of *K. polyphylla*; cf. below). – References: Prasad & Singh, Sedges Karnataka (India): 238−240, 2002; Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Nord. J. Bot. 1: 746, 1981 (*K. melanosperma* var. *hexalata*); Haines & Lye, Sedges & rushes E. Afr.: 240, 1983 (idem, under *Cyperus*); J. S. Afric. Bot. 49: 299, 1983; Gordon-Gray, Cyperaceae Natal: 116, 118, 1995 (nutlets); Fl. Trop. E. Afr., Cyper.: 324, 2010; Fl. Gabon 44, Cyper.: 89, 2012; Fl. China, Ill. 23: 333, 2012; Browning & Goetghebeur, Sedge genera Africa & Madag.: 55, 2017.

syn.: ***Cyperus melanospermus*** (Nees) J. V. Suringar; *Kyllinga eglandulosa* Govind. & Ramani (cf. Prasad in Phytotaxonomy 16: 23−25, 2016).

Perennial herb with long creeping branched rhizome 2−5 mm ∅; culms solitary from each node, but set close to each other, 0,12−1 m tall, *1,5−3 mm* ∅, trigonous, rarely 6-angular, glabrous; leaves basal, few per culm, or one from uppermost sheath, or hardly any blade developed; sheath reddish or purple, 1,5−17 cm long; blade flat, 2−17 cm long, 3−4 mm wide, margins and midrib scabrid; inflorescence a single green to golden yellow globose to ovoid head, 0,7−1,2 cm wide, 0,6−1 cm long with many spikelets, these sessile, narrowly ovoid, 3−4 × 0,7−1,5 mm, 2-flowered.

Grassland at edge of thicket; seasonally swampy grassland; streamside grassland; roadside ditches; ± 0−1900 m alt.

S. Africa, Botswana, Swaziland; Madagascar; India, Sri Lanka, E-wards to China, Malesia, New Guinea, Philippines, NE Australia. – The specimens cited by Kükenthal (Engler, Pflanzenreich IV. 20/101: 584, 1936) from Nigeria and Bioko/Fernando Poo, are incomplete and represent large specimens of *K. elatior* (fide Fl. W. Trop. Afr., ed. 2, 3/2: 307, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 86, 1974).

Two varieties are distinguished in our area: – var. **hexalata** Lye [syn.: *Cyperus melanospermus* var. *hexalatus* (Lye) Lye], with strongly 6-angular culms, in SE Uganda; – var. **melanosperma** [syn.: *Kyllinga vaginata* Zoll.; *K. fuscescens* Boeckeler; *K. melanosperma* Nees var. *plurifoliata* Kük., var. *gudaluriensis* Wad. Khan & R. D. Taur, and var. *trispica* D. D. Taur & R. I. Shaikh.; *Cyperus melanospermus* (Nees) J. V. Suringar var. *plurifoliatus* (Kük.) Kük., var. *imerinensis* (Cherm.) Kük., and var. *perrieri*

(Cherm.) Kük.; *Kyllinga imerinensis* Cherm., incl. var. *perrieri* (Cherm.) Cherm.; *K. perrieri* Cherm.], with leaves mostly well developed. – Subsp. **bifolia** (Miq.) Karthik. (bas.: *K. bifolia* Miq.) is recognised for plants from SE Asia, India to New Guinea.

The species is "best recognised by its general facies, namely: congested rhizomes that form uniseriate rows or crowded branched masses, or both; tall triangular closely packed culms … with solitary golden green spikes subtended by 3−4 rather short, stiff bracts, at first erect, but later reflexed…" (Gordon-Gray o.c.: 117). Seems close to *Cyperus aromaticus* [= *K. polyphylla*] from Asia, further studies needed to determinate if they are conspecific. – Koyama 1985, for Ceylon, mentions that identification is facilitated by the strong odour given off when the rhizome is damaged (Gordon-Gray, l.c.).

Note in Fl. Trop. E. Africa, Cyper.: 325, 2010, by Beentje, who was "unable to find any real differences between *K. erecta* and *K. melanosperma*". Haines & Lye (o.c.) "key the taxa out on glume keel teeth in *melanosperma*, but that is a very inconstant character; most specimens do not show these… the second character is the number of involucral bracts, but there is continuous variation in these… It is possible the two species are synonymous…".

K. microbracteata Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 337−338, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 233, 1983 (under *Cyperus*).

syn.: ***Cyperus microbracteatus*** (Lye) Lye

Perennial herb to 31 cm tall with short rhizome; culms with small swollen bases covered by fibrous remains of old leaf sheaths; culms 15−30 cm long, 0,3−0,7 mm ∅, bluntly triangular, glabrous below, minutely hairy above; leaves 2−3 per culm, to 8 cm long; sheath green to reddish-brown, villous; blade linear, 1−8 cm long, 1−2 mm wide, *densely hairy beneath* and *along margin*; inflorescence a white (tinged with pale green or purplish) globose head (spike) 4−6 mm ∅; spikelets lanceolate, 2,5−3 × 0,6−0,8 mm, 2−3-flowered.

Miombo woodland on red loam; c. 1080 m alt.

Only known from type collected in 1956.

K. microbulbosa Lye; Lye in Biol. Skr. 54: 204, 2001 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 328, 2010. – Icon.: Bot. Not. 125: 219, 1972; Haines & Lye, Sedges & rushes E. Afr.: 219, 1983 (under *Cyperus*).

syn.: ***Cyperus microbulbosus*** (Lye) Lye

Perennial herb to 22 cm tall; culm base swollen, brown, c. 2 mm thick, sometimes with the previous year's base persisting beside the new culm bases, thus forming colonies; culms loosely to densely tufted, 7−20 cm long, 0,3−0,9 mm ∅, trigonous, glabrous; leaf blade flat, to 12 cm long, 0,5−2 mm wide, margin and primary vein scabrid; inflorescence *1* globose *white head*, sometimes irregular in outline, 3−8 mm ∅; spikelets 2−3 mm long, 1−3-flowered.

Shallow damp soil on edge of rock basin; 1150 m alt.

Only known from the type collected in 1966.

Similar to *K. mbitheana*, *K. beninensis* (comparative table in Novon 16: 518, 2006).

K. microcristata (Lye) J.-P. Lebrun & Stork, **comb. nov**.; Cheek & al., Pl. Kupe…, Cameroon: 190, 2004 (Lye in press; under *Cyperus*); Onana & Cheek, Red Data Book flow. pl. Cameroon: 365, 2011 (idem); Onana, Fl. Cameroun 40: 223, 2013 (idem).

– Icon.: Lye & Pollard in Nord. J. Bot. 24: 270−271, 2005 (under *Cyperus*).

bas.: ***Cyperus microcristatus*** Lye in Cheek & al., The plants of Kupe…, Cameroon: 190, 2004, English description only; Lye in Nord. J. Bot. 24: 269, 2005. Type: Cameroon, S. W. Province, Kupe village, 4°48'N × 9°42'E, C. Patterson 11, 11 July 1995 (holo: K; iso: BR, MO, NLH, NAG, YA).

Perennial herb with short rhizome; culms many, densely set, 30−50 cm long, 0,5−1 mm ∅, trigonous to somewhat flattened, glabrous; leaves 3−4 per culm, only 2−3 with blades; lower sheaths purplish, upper greenish, glabrous; largest blades 5−12 cm long, 1,5−2,5 mm wide, flat, scabrid at least on margin and midrib near their tips; inflorescence a congested greyish to pale brown head 1 × 1 cm, consisting of 2−3 crowded spikes; central spike 6−8 × 4 mm, cylindric with numerous crowded spikelets; lateral spikes much shorter; spikelets bisexual, 1,8−2 × 0,6−0,7 mm, 1-flowered; only young achene seen.

Roadside in agricultural area; 500 m alt.

Only known from the type collected in 1995.

Near *K. pumila* Michx.

K. microstyla C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 327, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 230, 1983 (under *Cyperus*); Thulin, Fl. Somalia 4: 141, 1995 (idem); Lye in Candollea 51: 427, 430 (map), 1996 (idem); Fl. Eth. & Eritrea 6: 471, 1997 (idem).

syn.: ***Cyperus microstylus*** (C. B. Clarke) Mattf. & Kük.

Perennial tufted herb (not annual !) with culms 4,5−20 cm long, 0,3−0,5 mm ∅, trigonous, glabrous, base thickened, often covered in dark brown sheath fibres; leaf sheath pale brown, 0,5−1,5 cm long; blade 2−10 cm long, 1−1,8 mm wide, margins and midrib scabrid; inflorescence capitate, usually consisting of 3 globose or ovoid spikes, the central one 3−4 × 2,5−3 mm; spikelets ovoid, 1−1,3 × 0,6 mm, 1-flowered.

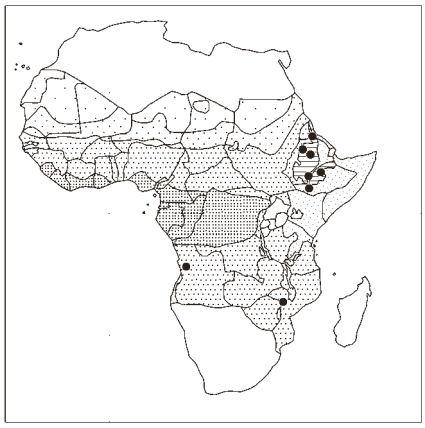
Seasonally wet shallow soil over rock; bushland; silty or sandy soil; sandy plain with scattered *Acacia tortilis*, *Balanites*; 200−1670 m alt.

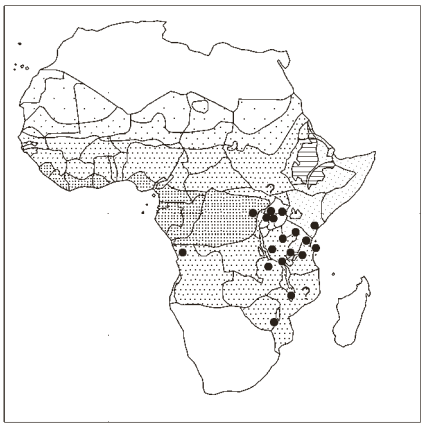
Socotra.

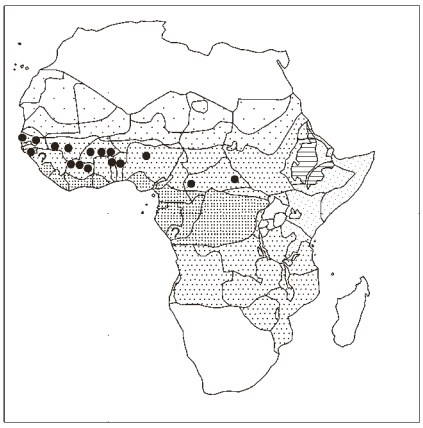
K. nemoralis (J. R. Forst. & G. Forst.) Dandy ex Hutch. & Dalziel, non *Cyperus nemoralis* Cherm. 1921 (C Madag.); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 258, 1955 (as *Cyperus kyllingia*); Simpson & Inglis in Kew Bull. 56: 323−324, 2001; Prasad & Singh, Sedges Karnataka (India): 240−242, 2002; Akoègninou & al., Fl. analyt. Bénin: 105, 2006; Lisowski, Fl. Rép. Guinée 1: 403, 2009; Fl. Trop. E. Afr., Cyper.: 335, 2010; Fl. China 23: 249, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011; Acevedo-Rodríguez & Strong, Catalogue seed pl. West Indies: 27, 2012. – Icon.: Candollea 36: 449, 1981; Haines & Lye, Sedges & rushes E. Afr.: 247, 1983 (as *Cyperus kyllingia*); Gordon-Gray, Cyper. Natal: 116, 1995 (nutlet); Fl. Pakistan 206, Cyper.: 156, 2001; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 69, 2002; Fl. Gabon 44, Cyper.: 87, 2012 (as *Cyperus kyllingia*).

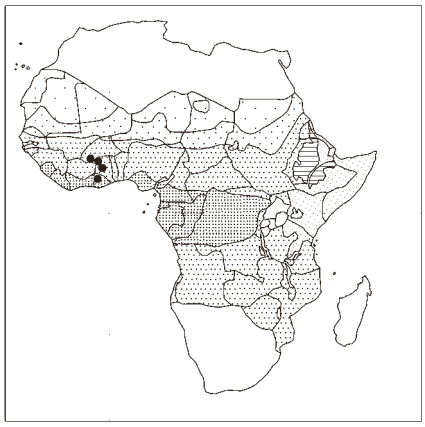
bas.: *Thryocephalon nemorale* J. R. Forst. & G. Forst. 1775.

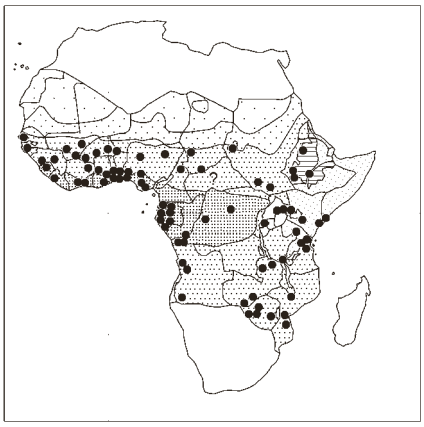
syn.: ***Cyperus mindorensis*** (Steud.) Huygh; *Kyllinga mindorensis* Steud. 1854; *K. monocephala* Rottb. 1773 (excl. syn. *Cyperus kyllingia* Endl. 1842), non *Cyperus monocephalus* Roxb. 1832; *Kyllinga monocephala* Stokes 1812, nom. illeg.; *K. monocephala* var. *humilis* Boeckeler, var.

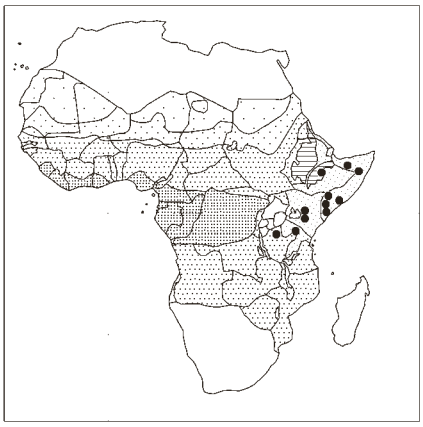

Kyllinga controversa

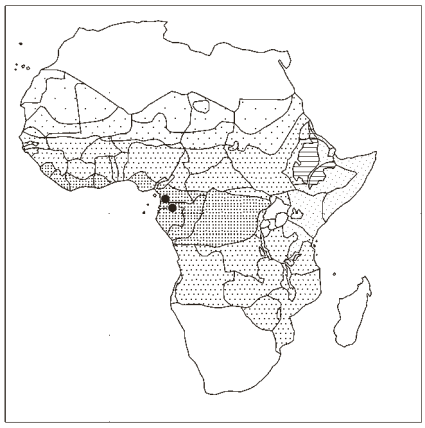

Kyllinga crassipes

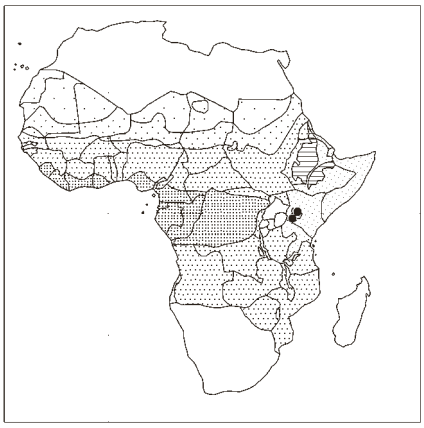

Kyllinga debilis

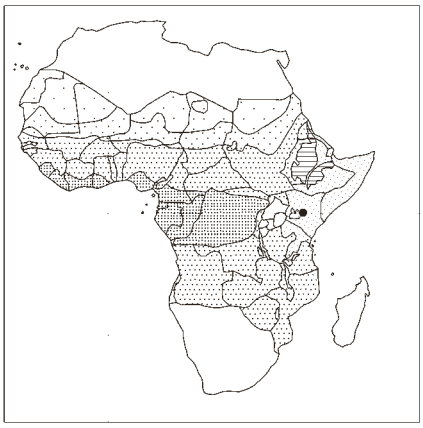

Kyllinga echinata

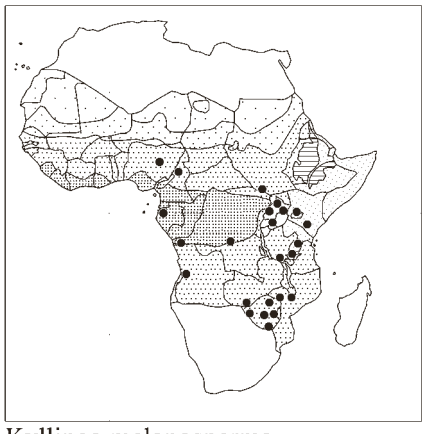

Kyllinga erecta
(incl. K. jubensis)

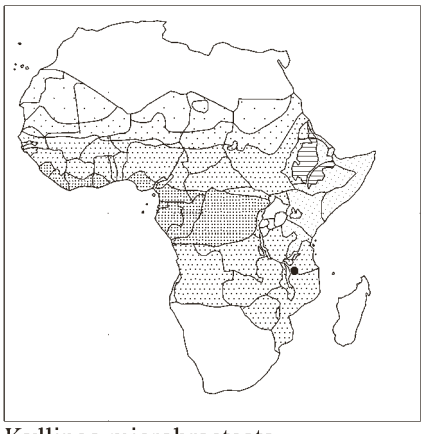

Kyllinga eximia

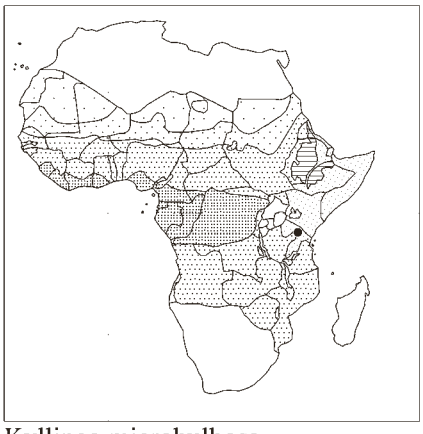

Kyllinga inselbergensis


Kyllinga kilianii


Kyllinga mbitheana


Kyllinga melanosperma


Kyllinga microbracteata


Kyllinga microbulbosa

latifolia Boeckeler, var. *subtriceps* Kunth, and var. *tenuis* Boeckeler; *Cyperus kyllingia* fa. *humilis* (Boeckeler) Kük., var. *latifolius* (Boeckeler) Kük., fa. *subtriceps* (Kunth) Kük., and fa. *tenuis* (Boeckeler) Kük.; *Kyllinga planiculmis* C. B. Clarke ex Cherm. var. *mucronata* Cherm.; *Scirpus cephalotes* Jacq. 1771, non *Cyperus cephalotes* Vahl 1805; *Kyllinga cephalotes* Druce 1917; further synonyms in Phytotaxa 166: 39−40, 2014; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial herb to 30 cm tall with long slender branching rhizome 1−2 mm ∅, covered by brownish scales, pliable and fragrant but easily broken on removal from soil (Gordon-Gray, o.c.: 117); culms rather spaced along rhizome, or sometimes dense, 8−25 cm long, 0,8−1,5 mm ∅, trigonous, glabrous; leaf sheaths pale to mid-brown, 1−6 cm long; blades dark green, flat, 10−21 cm long, 2−5 mm wide, margins and midrib scabrid; inflorescence 1 globose or ovoid sessile head (rarely with 1−2 smaller spikes) *3−8 mm* ∅; spikelets many, narrowly ovoid, *2−2,5* × 0,6−1 mm, 1−2-flowered; keel of glumes narrow, winged, spinulose.

Forest with open canopy; forest clearings; shaded places in secondary forests; also weed of secondary forest and disturbed habitats; humid places; along forest paths; 0−1200 m alt.

Tropical and subtropical Old World. Príncipe (Bothalia 41: 52, 2011); S. Africa (Natal: moist partly shaded disturbed coastal situations); Madagascar, Indian Ocean islands; Pakistan, India, Sri Lanka – SE Asia, China to Japan, S to Malaysia, Philippines, NE Australia; naturalized in Hawaii, West Indies, C. & S. America (Brazil: Costa & al. in Rodriguésia 63: 797, 2012).

Without rhizome may be confused with *K. brevifolia*.

K. nervosa Steud.; *excl*. subsp. *oblonga* (C. B. Clarke) J.-P. Lebrun & Stork (= *K. oblonga*), and var. *ruwenzoriensis* (C. B. Clarke) Lye (= *K. polyphylla* var. *elatior*); Troupin, Fl. Rwanda 4: 460, 1988; Fl. Trop. E. Afr., Cyper.: 317, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 235, 1983 (*Cyperus oblongus* subsp. *flavus* & subsp. *nervosus*); Thulin, Fl. Somalia 4: 141, 1995 (*Cyp. oblongus* subsp. *jubensis*); Fl. Eth. & Eritrea 6: 474, 1997 (as *Cyp. costatus*); Lye in Candollea 51: 427, 431 (map) 1996 (*Cyp. oblongus* subsp. *jubensis*).

syn.: ***Cyperus costatus*** Mattf. & Kük.; *Cyp. oblongus* (C. B. Clarke) Kük. subsp. *nervosus* (Steud.) Lye

Perennial tufted herb with short rhizome and swollen culm base (aromatic, smelling of eucalyptus or ginger), often surrounded by fibres from disintegrated leaf bases; culms tufted, 7−50 cm long, 0,8−1,5 mm ∅, trigonous, glabrous; leaf sheath pale brown, more reddish near base, 1−6 cm long, the lowermost sometimes bladeless; blade linear, flat or grooved, 7−35 cm long, 1−2,5 mm wide, scabrid near tip; inflorescence capitate of 1 conical to cylindric spike, yellow green turning dark brown to black, 0,5−1,2 cm × 5−8 mm (rarely with a small subsidiary spike); spikelets many, 2,2−3,5 × 0,9−1 mm, 2−3-flowered.

Shallow soil over rock; rocky outcrops; seepage zones; seasonally swampy grassland, especially on black cotton soil; wooded savanna; degraded sandy bushland; c. 50−2700 (−2950) m alt.

Four subspecies are recognised here: – subsp. **flava** (C. B. Clarke) Lye [bas.: *K. flava* C. B. Clarke; syn.: *K. nervosa* Steud. var. *flava* (C. B. Clarke) Lye; *Cyperus scott-elliotii* Govaerts; *Cyperus oblongus* (C. B. Clarke) Kük. subsp. *flavus* (C. B. Clarke) Lye], from SE Kenya (Teita Distr.), treated as a distinct species in Fl. Trop. E. Afr., Cyper.: 322, 2010, but data deficient, with an inflorescence of a single yellow spike; – subsp. **jubensis** (Mtot.) J.-P. Lebrun & Stork [bas.: *K. flava* subsp. *jubensis* Mtot. non *K. jubensis* Chiov.; syn.: *Cyperus costatus* subsp. *jubensis* (Mtot.) Govaerts; *Cyperus oblongus* subsp. *jubensis* (Mtot.) Lye] from rocky outcrops in S Somalia, with well developed leaf blades; – subsp. **nervosa** (as *K. nervosa* in Fl. Trop. E. Afr., Cyper.: 317, 2010), widespread in NE tropical Africa; – subsp. **sidamoensis** Mtot. [syn.: *Cyperus costatus* subsp. *sidamoensis* (Mtot.) Lye], a robust plant with a large golden inflorescence, occurring in S Ethiopia-Kenya.

K. ngothe Mtot. – Icon.: Bot. Jahrb. Syst. 111: 295, 1990. – Not in Fl. Trop. E. Afr., Cyper., 2010.

syn.: ***Cyperus ngothe*** (Mtot.) Huygh

Thickly tufted perennial herb, basal part woody, covered by old leaf sheaths and old grey to dark grey sheath fibres; sheaths limited to the lower 2−2,8 cm, light grey to light green; blades 10−12 cm long, 2−2,5 mm wide, margins and midrib with long spinules; culms 13−22 cm tall, 1,5−2 mm ∅, greenish, quadrangular; inflorescence of 1 bright yellow to light yellow sub-hemispheric spike 4−7 × 6−10 mm; spikelets oblong, 4−4,5 × 0,6−1,2 mm, 1−2-flowered.

Swamp; river plain; volcanic hill; thick bushy ground near stream.

Near *K. chrysantha*, *K. chrysanthoides*.

(**K. nigripes** C. B Clarke), Fl. Trop. Afr. 8: 285−286, 1901; Kükenthal in Engler, Pflanzenreich IV. 20/101: 572, 1936; Fl. Trop. E. Afr., Cyper.: 346, 2010.

syn.: ***Cyperus nigripes*** (C. B. Clarke) Kük., excl. var. *grandiceps* Kük. (= *Kyllinga alba* subsp. *alba*).

Perennial herb with short rhizome and fibrous wiry roots; culms 12−30 cm tall, compressed-trigonous, base bulbous covered by old fibrous blackish leaf sheaths; leaves as long as or longer than culm, 3−3,5 mm wide; inflorescence a dense globose-ovate spike, 6 mm ∅; spikelets many, ovate-oblong, 3,5−4 mm long, each perfecting 2 nutlets; keel of glumes smooth, acuminate, wingless.

Described from Malawi, without ecology: Buchanan nº 1428, s. l.

According to Fl. Trop. E. Afr., l.c., the Tanzanian material (Peter 32733, 45633, 15367) from Usagara and W Usambara, looks different, with subsidiary spikes at inflorescence base. This material keys to *K. oblonga* or *K. crassipes*. – Taxonomic status uncertain; not mapped by us.

K. oblonga C. B. Clarke; Fl. Trop. Afr. 8: 284−285, 1901; Kükenthal in Engler, Pflanzenreich IV. 20/101: 580, 1936 (as *Cyperus oblongus*); Haines & Lye, Sedges & rushes E. Afr.: 234, 1983 (idem).

syn.: ***Cyperus oblongus*** (C. B. Clarke) Kük. subsp. ***oblongus***, excl. var. *ruwenzoriensis* (C. B. Clarke) Kük. (= *Kyllinga polyphylla* var. *elatior*); *Kyllinga nervosa* subsp. *oblonga* (C. B. Clarke) J.-P. Lebrun & Stork; ***Cyperus nyikanus*** Govaerts, nom. nov., Skvortsovía 4: 79, 2018, needed as *Cyp. oblongus* (C. B. Clarke) Kük. is a later homonym of the earlier fossil name *Cyp. oblongus* A. Braun

Perennial herb with short woody rhizome, covered by black scales; culms densely set in a row along the rhizome, 30 cm tall, 1,7−3 mm ∅, presumably glabrous; leaves to 30 cm long, 1,7−3 mm wide, flaccid; inflorescence of 1−3 spikes, the central one oblong, dense, 1−1,2 cm × 4−5 mm; spikelets ovoid, compressed, 2,5−3 mm long, 1−2-flowered; glumes with green hispid-ciliate non-winged keel.

Ecology unknown.

Known from SE Kenya and NE Tanzania (but this material not seen for Fl. Trop. E. Afr.).

"There has been confusion about the taxa *nervosa* and *oblonga*. I [Beentje] believe *oblonga* and *nervosa* are distinct enough to be treated as species in their own right …" (Fl. Trop. E. Afr., l.c.). In *K. nervosa* the head is greenish black, with 1−4 involucral bracts and 1 spike, glumes hairless. In *K. oblonga* the head is green-white, with 4−5 involucral bracts and 3 spikes, glumes hispid-ciliate.

K. odorata Vahl 1805, non *K. odorata* Kunth 1816 (= *K. pumila*), nec *Cyperus odoratus* L. 1753 [= *Torulinium odoratum* (L.) S. S. Hooper]. – Now often cited as *Cyperus sesquiflorus* in floras and flora lists. – Renier, Flore du Kwango 1: 68, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 255, 1955; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 632, 1985; Thulin, Fl. Somalia 4: 140, 142, 1995; Lye in Candollea 51: 426, 1996 (*Cyp. sesquiflorus*); Cable & Cheek, Pl. Mt Cameroon: 155, 1998 (idem, with 3 subspp.); Simpson & Inglis in Kew Bull. 56: 324, 2001; Harvey & al., Pl. Bali Ngemba…: 136, 2004 (*Cyp. sesquiflorus*); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 77−78, 2006 (idem); Akoègninou & al., Fl. analyt. Bénin: 105, 2006; Lisowski, Fl. Rép. Guinée 1: 403−404, 2009; Fl. Trop. E. Afr., Cyper.: 340−342, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011 (*K. appendiculata*, *K. odorata*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 130, 2017); Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 112−113, 2015 (var. *cylindrica*, var. *major*). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 39 fig. 6/E-J, 1935 (*Cyp. sesquiflorus*, details); Lowe & Stanfield, Fl. Nigeria: Sedges: 82, 1974; Haines & Lye, Sedges & rushes E. Afr.: 241−243, 1983 (*Cyp. sesquiflorus*, 3 subspp.); Berhaut, Fl. ill. Sénégal 9: 258, 1988; Gordon-Gray, Cyper. Natal: 119, 1995 (nutlet); Fl. Eth. & Eritrea 6: 476, 1997 (*Cyp. sesquiflorus*, (2 subspp.); Prasad & Singh, Sedges Karnataka (India): 243, 2002 (*K. odorata* subsp. *cylindrica*); Fischer & Killmann, Ill. fieldguide pl. Nyungwe Natl. Park, Rwanda: 341, 2008 (*Kyll. appendiculata*); Fl. Gabon 44, Cyper.: 97, 2012 (*Cyp. sesquiflorus* subsp. *cylindricus*); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 378 (*Kyll. appendiculata*), 382 (*Kyll. odorata*); Verloove in Webbia 69: 215, 2014 (*Cyp. sesquiflorus*); Brittonia 66: 293, 2014 (in USA, Georgia); Carter & al. in J. Bot. Res. Inst. Texas 10: 194, 197, 2016 (*Cyp. sesquiflorus*).

syn.: *K. odorata* Vahl var. *genuina* Osten, nom. invalid.; ***Cyperus sesquiflorus*** (Torr.) Mattf. & Kük.; *Kyllinga sesquiflora* Torr.; *K. brasiliensis* Raddi 1823 (cf. Kew Bull. 65: 457, 2010); *K. cylindrica* Nees; *K. appendiculata* K. Schum.; *K. cylindrica* Nees var. *appendiculata* (K. Schum.) C. B. Clarke; *K. madagascariensis* Gand.; *K. viridula* Hochst. ex A. Rich.; *K. filicula* C. B.Clarke; *K. leucocephala* Baldwin and var. *pluriceps* Kük.; *Cyperus afrosylvestris* Lye (nom. nov. in Lidia 7: 96, 2011). – See comments below.

Tufted perennial herb with or without rhizome, spreading with basal buds; culms in tight groups, 3−10−80 cm long, 1−2,3 mm ∅, trigonous, glabrous; leaf sheaths pinkish to dark red, 1−10 cm long; blade 4−50 cm long, 1,5−7 mm wide, margins and midrib scabrid; inflorescence of 1 head whitish or greenish white, ovoid or ellipsoid, with 1−3 spikes, 0,5−2,2 × 0,4−1,8 cm; spikelets many, narrowly ovoid, 2−4,5 × 0,6−1,6 mm, 1−2-flowered.

Open forest or forest margins; bamboo zone; forest on laterite; woodland; usually in at least partial shade; less often in open grassland; swampy- or ruderal grassland; damp habitats; along forest roads; rocky soils; fallows; sandy soils; footpath with *Euphorbia hirta*; open grassland heavily grazed by animals or cut or burnt by man; around inselbergs; weed in cultivations and gardens (lawns); 200−3000 m alt.

Bioko/Fernando Poo; S. Africa, Botswana, Swaziland; Madagascar; Yemen (Wood, Handbook Yemen flora: 322, 1997); tropical areas in the Old World, SE Asia, from India E-wards to Malesia, Philippines, N Australia (subsp. *odorata*); N. America, E USA, C. America, West Indies (Fl. Mesoamericana 6: 445, 1994; Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 279, 2012), S. America to Uruguay & Argentina. Naturalized in Europe in Spain (Webbia 69: 217, 2014, first discovered in 1998).

Gordon-Gray (o.c.: 117) summerized the former systematic treatment as follows. "*K. odorata* is based on American material and *K. cylindrica* on a gathering from India. Getliffe [Studies in Cyperaceae in southern Africa: 10. The genus *Kyllinga* Rottb. in J. S. Afric. Bot. 49: 261−304, 1983] states that African plants have been assigned to both species. Kükenthal (o.c.: 591−595, 1936) regarded these species as variants, recognizing each at varietal level within *Cyperus sesquiflorus*. He relegated *K. odorata*, with a wider inflorescence and longer spikelets, to the typical variety, placing *K. cylindrica* within the variety of that name. R. W. Haines & Lye (1983) have subsequently adopted subspecific ranking for the infraspecific categories (implying allopatric distributions ?). These authors state that the typical subsp. is larger in all parts than is subsp. *cylindrica* with a spinescent keel to its glumes. Getliffe does not believe it advantageous to discriminate at infraspecific level …".

Kükenthal (in Engler, Pflanzenreich, o.c.: 591−595) subdivided *Cyperus sesquiflorus* into 5 varieties some of which with 1−5 forms. Many are sympatric in Africa.

The World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, consulted in 2017, subdivides ***Cyperus sesquiflorus*** into 3 subspp.: – subsp. ***appendiculatus*** (K. Schum.) Lye in tropical Africa; – subsp. ***cylindricus*** (Nees) T. Koyama in the tropical and subtropical Old World; – subsp. ***sesquiflorus***, pantropical.

Beentje in Flora of Tropical East Africa, Cyperaceae: 340−342, 2010, recognizes 3 varieties within **Kyllinga odorata**, with the comment that two of them (var. *odorata* and var. *major*) should possibly be united. These varieties are: – var. **odorata** [syn.: *K. sesquiflora* Torr.; *Cyperus sesquiflorus* (Torr.) Mattf. & Kük. subsp. *sesquiflorus*], with glume keel spiny; – var. **major** (C. B. Clarke) Chiov. [bas.: *Kyl. cylindrica* Nees var. *major* C. B. Clarke; syn.: *Kyl. appendiculata* K. Schum.; *Kyl. odorata* Vahl subsp. *appendiculata* (K. Schum.) Lye; *Cyperus sesquiflorus* (Torr.) Mattf. & Kük. var. *major* (C. B. Clarke) Lye, and subsp. *appendiculatus* (K. Schum.) Lye, and var. *fallax* (Kük.) Kük.; *Kyl. odorata* Vahl var. *fallax* Kük.], with glume keel glabrous (according to Beentje, seen in only 2 specimens examined !); these two varieties have leaf blade > 3 mm wide, and spikelets 3−4,5 mm long, whereas the 3rd variety, viz. var. **cylindrica** (Nees) Kük. has leaves < 3 mm wide and smaller spikelets, i.e. 2−3 mm long [bas.: *Kyllinga cylindrica* Nees; syn.: *Cyperus sesquiflorus* (Torr.) Mattf. & Kük. var. *cylindricus* (Nees) Kük. incl. fa. *globosus* Kük., and subsp. *cylindricus* (Nees) T. Koyama; *Kyllinga odorata* Vahl subsp. *cylindrica* (Nees) T. Koyama.]

For further synonyms under ***Cyperus sesquiflorus***, See World checklist cited above.

Gordon-Gray (l.c.) already did not find it "advantageous to discriminate at infraspecific level for southern African plants"; we follow this sound concept also for the rest of Africa, in as much as Verloove (Webbia 69: 217, 2014) mentions "an upcoming monographic study of (sub-)genus *Kyllinga* (Huygh, in prep.)" which "also applies a broad species concept without recognition of any infraspecific taxa".

K. pachystyla (*Kyllingia pachystyla*) Kük.; Figuerido & Smith, Pl. Angola: 181, 2008.

syn.: ***Cyperus pachystylus*** (Kük.) Kük. (Engler, Pflanzenreich IV. 20/101: 591, 1936).

In habit resembling *K. odorata* Vahl. Perennial herb with very short woody rhizome; culms solitary, 14−20 cm tall, flattened-trigonous, smooth, leafy above, somewhat thickened at base; leaves much shorter than culms; sheaths rusty brown; blades 2 mm wide, long-acuminate, midrib and margins spinulose-scabrid; inflorescence of 1 spike, globose, dense, 7 mm ∅; spikelets many, lanceolate-ovate, flattened, *4,5 mm long*, 2-flowered.

Dry stony grassy places; 1830 m alt.

Near *K. odorata*.

K. pauciflora Ridl. 1884, non *Cyperus pauciflorus* Steud. 1854, nec (Lightf.) Missbach & E. H. L. Krause 1900; Gordon-Gray & al. in S. Afric. J. Bot. 75: 166, 169, 2009; Fl. Trop. E. Afr., Cyper.: 319, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 237, 1983 (as *Cyperus ridleyi*); Gordon-Gray, Cyper. Natal: 119, 1995 (nutlet).

syn.: ***Cyperus ridleyi*** Mattf. & Kük.

Perennial herb with an *erect* rhizome; culms densely clustered, 10−40 cm long, 0,8−1,2 mm ∅, triquetrous, glabrous, (when producing *viviparous* spikelets often decumbent); leaf sheath purplish to reddish-brown, 1−12 cm long; blade 8−15 cm long, 1−2 mm wide, margin and primary vein scabrid; inflorescence a solitary spike c. 5 mm ∅, of *6−15* golden spikelets; these narrowly ovoid, *4−7* × 1−1,5 mm, usually 2-flowered; often with leafy young plants arising from the spikelets.

Swampy stream-sides; near streams in marshy places; 1050−1900 m alt.

S. Africa.

Closely related to *Kyllinga brevifolia* but distinct in viviparous spikelets with young plants sprouting. Also near *K. erecta*: "its [*K. pauciflora*] limited distribution on the outskirts of stands of that species suggests a definite possibility of pseudovivipary in conjunction with hybridisation" (Gordon-Gray & al., l.c.).

"This very critical species comes between *K. brevifolia* and *K. erecta*, themselves hardly separable: it differs from both in the longer, elongate-lanceolate glumes; the smaller number of spikelets may be accidental" (Clarke, Fl. Trop. Afr. 8: 273, 1901).

K. peteri (Kük.) Lye 1982, non *Alinula peteri* (Kük.) Goetgh. & Vorster 1988; Fl. Trop. E. Afr., Cyper.: 317−318, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 236, 1983 (as *Cyperus peteri*).

bas.: ***Cyperus peteri*** Kük.

Perennial herb with short thick rhizome; culms several closely together, 20−60 cm long, 1,3−2 mm ∅, trigonous, glabrous; leaf sheaths grey to brown, 1−6 cm long, many at base, only slightly splitting up into fibres; blades flat or folded, *5−25* cm long, 2−4 mm wide, margin scabrid; inflorescence an *ovoid* ! spike 1−1,5 × 0,6−1 cm; spikelets ovoid, 3−5,5 × 1,5−2 mm, 2−3-flowered.

Swamps; lake margins; 1100−1250 m alt.

Not collected in Tanzania since >70 years.

K. platyphylla K. Schum. 1901, incl. var. *longifolia* Kük., non *Cyperus platyphyllus* Roem. & Schult. 1817; Fl. Trop. E. Afr., Cyper.: 339, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 245, 1983 (as *Cyperus ciliato-pilosus*); Flora 176: 63, 1985.

syn.: ***Cyperus ciliatopilosus*** Mattf. & Kük., incl. var. *longifolius* (Kük.) Kük. and var. *rhizomatosus* Kük.

Perennial herb with short rhizome; culms densely tufted, bases covered in dark brown fibres, 15−50 cm long, 1,3−2 mm ∅, sharply 3-angled, scabridulous; leaf sheath pale brown, darker at base, 1,5−8 cm long; blade linear, recurved or channelled, 2−33 cm long, 5−7 mm wide, primary vein and margin scabrid; inflorescence of 1 hemispheric white or cream (occasionally greenish yellow) head of 1−3 spikes 0,8−1,5 cm ∅; spikelets narrowly ovoid, 4−4,8−1,2−1,5 mm, 2-flowered.

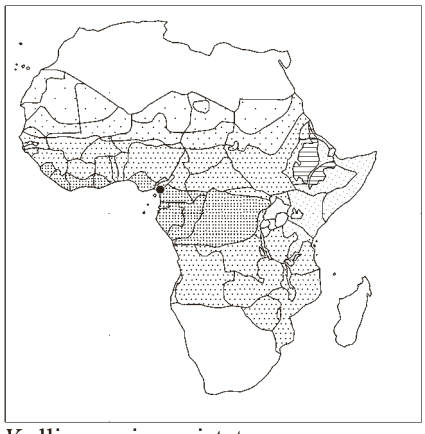
Grassland dry or wet; wooded grassland; woodland; stony soil; damp depression; 900−2100 m alt.

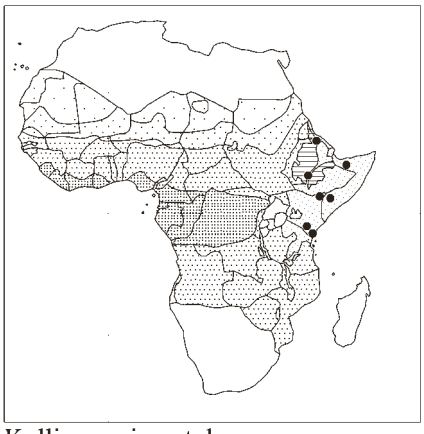
K. polyphylla Willd. ex Kunth 1837, non *Cyperus polyphyllus* Vahl 1805 (= *Cyp. bulbosus*), nec *Kyllingiella polyphylla* (A. Rich.) Lye; incl. *K. elatior* Kunth

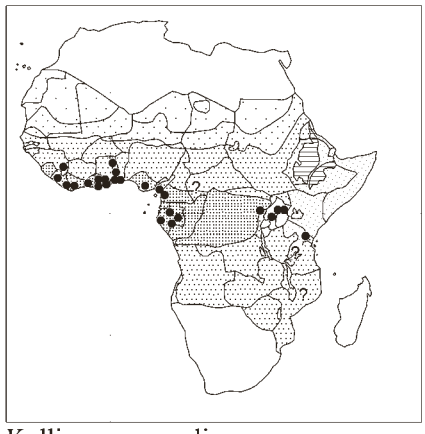
Comments:

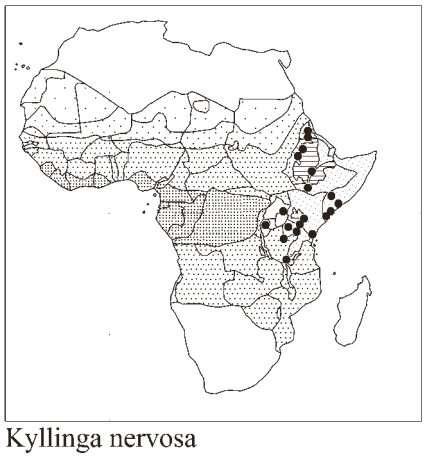
K. polyphylla Willd. ex Kunth is a polymorphic species treated by authors of floras and flora lists in different ways. Clarke (Fl. Trop. Afr. 8: 275−277, 1901) cites ***K. elatior*** Kunth from SE tropical Africa, but remarks that "there is very little to distinguish this species from *K. polyphylla*, Kunth, and *K. melanosperma*, Nees, but the cylindric middle-spike. I have moved all the Angola examples (*K. aromatica*, Ridley), which I formerly called *K. elatior*, into *K. polyphylla*." Then, under ***K. polyphylla*** Willd. ex Kunth, Clarke gives as synonyms: *K. macrantha* Boeckeler, *K. aromatica* Ridl.; *K. planiceps* C. B. Clarke, as well as *K. elatior* sensu Rendle from Angola (See above), with the remark that "this species hardly differs from *K. melanosperma* but by the more numerous bracts". Clarke distinguishes ***K. teres*** C. B. Clarke from WC Zaire, remarking that "this might be treated as a variety of *K. polyphylla* Kunth, which it is closely allied to in all respects. But *K. polyphylla* has the stem sharply triquetrous at the top, without any approach to the terete stem of *K. teres*". This series of species is followed by ***K. senegalensis*** C. B. Clarke with a flower head of 5 spikes with small spikelets, each producing 1 nut, and occurring on the "Upper Senegal" (Lécard 215), i.e. in actual Mali. Then follows ***K. melanosperma*** Nees already mentioned.

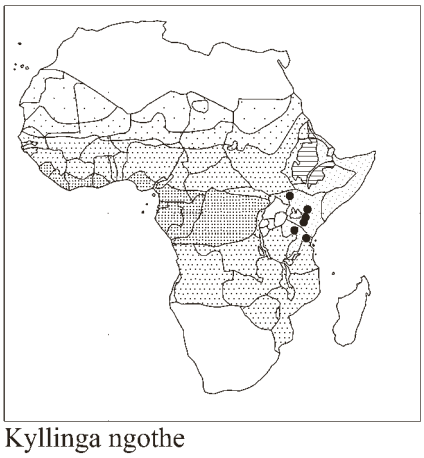
Kükenthal (in Engler, Pflanzenreich IV. 20/101: 581−583, 1936) treats this group of species under *Cyperus* section *Eu-Kyllinga* subsection *Pingues*. He maintains ***Cyperus senegalensis*** (C. B. Clarke) Mattf. & Kük. based on *Kyllinga senegalensis* C. B. Clarke, with synonym *K. sphaerocephala* var. *brunnescens* C. B. Clarke, although with the comment that it is very close to ("parum distans") ***Cyp. aromaticus*** (Ridl.) Mattf. & Kük., the new combination for *Kyllingia polyphylla* Willd. ex Kunth (bas.: *Kyl. aromatica* Ridl.), with *K. jubensis* Chiovenda 1932 as synonym. Within this taxon he distinguishes: – var. ***elatus*** (Steud.) Kük. (*Kyllinga elata* Steud.), with very short internodes to the rhizome and inflorescence of 5 congested spikes, and occurring in E. Africa – Comoros – Seychelles; – var. ***elatior*** (Kunth) Kük. (*Kyllinga elatior* Kunth; *K. polyphylla* var. *elatior* Kük.) occurring in Africa from Cameroon – Zaire E-wards and then S-wards to S. Africa, with inflorescence of 1−3 spikes 10 mm long; – var. ***teres*** (C. B. Clarke) Kük. (*Kyllinga teres* C. B. Clarke), with inflorescence of 1 spike 5−6,5 mm long, occurring in Zaire, and also with a form ***aphyllus*** (Cherm.) Kük. (*Kyl. teres* var. *aphylla* Cherm.) with leaves reduced to sheaths and short inflorescence bracts, it is recorded from Central African Rep. (Tisserant 155); – var. ***repens*** Kük. with long creeping rhizome, occurring in Tanzania, E Usambaras (Peter 18031); – var. ***brachyrhizomatosus*** Kük. with very short rhizome, short culms (4−15 cm) and glume keel spinulose collected in Tanzania, Uluguru Mts. On the other hand Kükenthal recognizes ***Cyperus pinguis*** (C. B. Clarke) Mattf. &

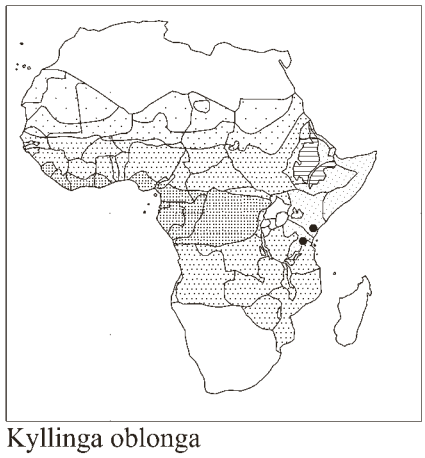

Kyllinga microcristata

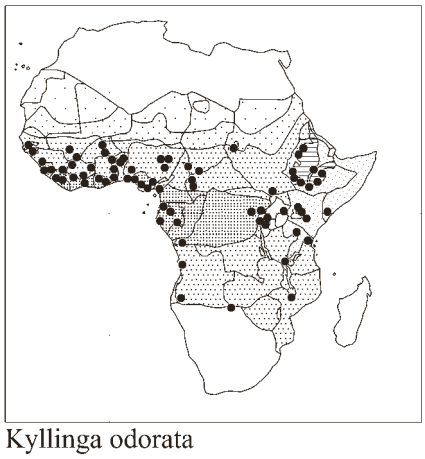

Kyllinga microstyla

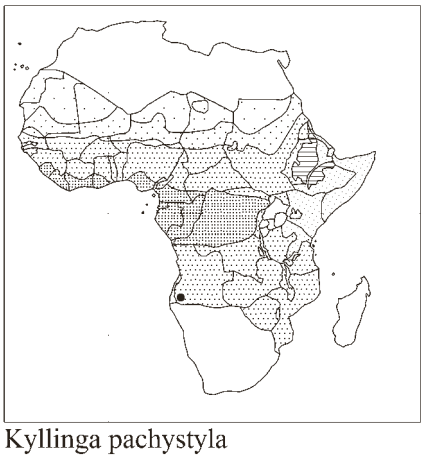

Kyllinga nemoralis

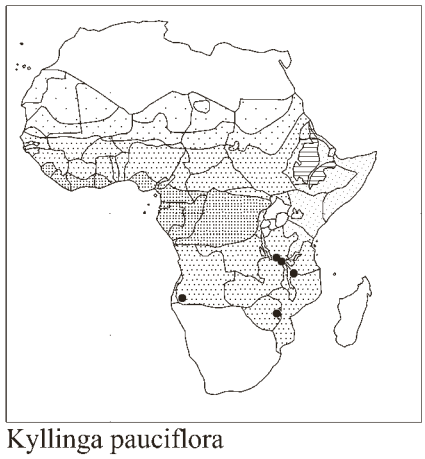

Kyllinga nervosa

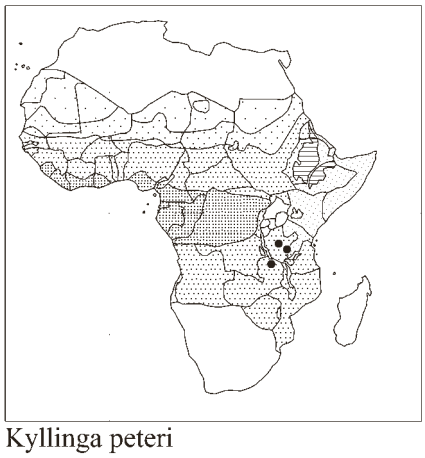

Kyllinga ngothe

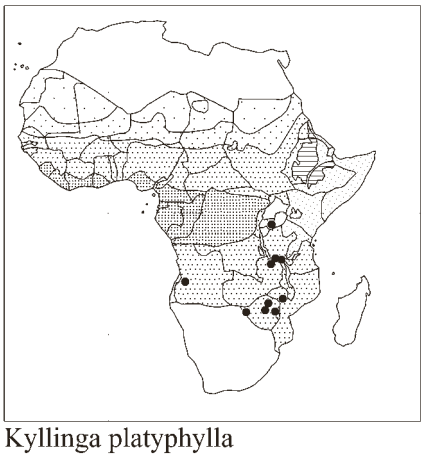

Kyllinga oblonga

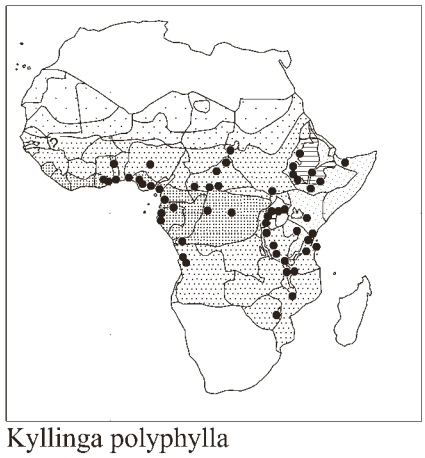

Kyllinga odorata


Kyllinga pachystyla


Kyllinga pauciflora


Kyllinga peteri


Kyllinga platyphylla


Kyllinga polyphylla

Kük. (*Kyllinga pinguis* C. B. Clarke) as a distinct species, with a long creeping rhizome with short culms 5−12 cm (in *C. aromaticus* 30−40 cm) and inflorescence of 1 spike, and occurring in E-C Africa (Uganda – Kenya, Nairobi – Tanzania, Usambara Mts).

A new attempt to classify this group of taxa is made by S. S. Hooper in Flora of West Tropical Africa, ed. 2, 3/2: 303−307, 1972 (under *Kyllinga*). She maintains ***Kyl. elatior*** Kunth (*Cyp. aromaticus* var. *elatior*) with creeping rhizome and cylindrical inflorescence subtended by very long bracts, recorded from Mt Cameroon and Fernando Poo. But she transfers *Kyl. polyphylla* Willd. ex Kunth [= *Cyp. aromaticus* (Ridl.) Mattf. & Kük.] under *Kyl. erecta* Schumach. as ***K. erecta*** var. ***polyphylla*** (Kunth) S. S. Hooper, with *K. senegalensis* C. B. Clarke as a possible synonym.: inflorescence head of several spikes with more than 3 bracts, and distinctly ciliate keels to the glumes; occurrence from W Africa/ Ghana E-wards throughout tropical and S. Africa, also present in Madagascar and the Mascarenes.

Subsequent authors of floras and flora lists (e. g. Haines & Lye, 1983) maintain *Cyperus aromaticus*, *Cyp. pinguis* and/or *Cyp. melanospermus* (Nees) V. Suringar subsp. *elatus* (Steud.) Lye [syn.: *Cyp. aromaticus* var. *elatus* (Steud.) Kük.].

In the World Checklist of Cyperaceae, Govaerts & Simpson (2007: 540−544) distinguish ***Kyllinga elatior*** Kunth [with *K. pinguis* C. B. Clarke, *Cyperus aromaticus* var. *elatior* (Kunth) Kük., as synonyms], and ***Kyl. polyphylla*** Willd. ex Kunth [*Cyp. aromaticus* (Ridl.) Mattf. & Kük.; *Kyllinga erecta* var. *polyphylla* (Willd. ex Kunth) S. S. Hooper, etc., as synonyms].

It is worth noting that Gordon-Gray in "Cyperaceae in Natal" (1995: 111−120) distinguishes 2 species, viz. ***Kyllinga elatior*** Kunth, and ***K. polyphylla*** Willd. ex Kunth. This author describes *K. elatior* (syn.: *K. pinguis* C. B. Clarke) as a plant of "soft texture" with "triquetrous culms each carrying a central cylindrical to elliptic spike, sometimes accompanied by 1 or 2 shorter lateral spikes, surrounded by 4−6 long (up to 290 mm), bracts that spread at right angles … leaf blades … usually short and few per culm, lemon-scented when bruised…". This plant occurs in Natal, whereas *K. polyphylla* (*K. aromatica* Ridl.) seems to be introduced to Durban, the only place in Natal where it occurs.

For Flora of Tropical East Africa, Cyperaceae (2010: 318−319) Beentje chooses to follow Kükenthal (1936). He treats ***Kyllinga polyphylla*** Kunth in a wider sense, comprising 2 vars., viz. var. ***polyphylla***, and var. ***elatior*** (Kunth) Kük. (with *K. pinguis* C. B. Clarke as synonym). ***K. elata*** Steud. [*Cyperus aromaticus* (Ridl.) Mattf. & Kük. var. *elatus* (Steud.) Kük]. is cited under "Species of uncertain occurrence" (p. 346); the type is from Comoro Isl. "The specimens identified as this taxon at Kew seemed to me to be *K. polyphylla*".

As to the present list (below) we follow Beentje's wise approach, although the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, consulted in 2017, has a different species concept and nomenclature (under *Cyperus*).

References: Rendle, Cat. Welwitsch's Afric. pl. 2/1: 104−105, 1899; Wickens, Fl. Jebel Marra: 163, 1976 (as *K. erecta* var. *polyphylla*); Thulin, Fl. Somalia 4: 142−143, 1995 (as *Cyperus aromaticus*); Lye in Candollea 51: 425, 429 (map), 1996 (idem); Cable & Cheek, Pl. Mt Cameroon: 155, 1998 (*Cyp. pinguis*); Simpson & Inglis in Kew Bull. 56: 324, 2001 (incl. var. *elatior*); Harris, Vascular pl. Dzanga-Sangha Res., Centr. Afric. Rep.: 227, 2002; Fl. Trop. E. Afr., Cyper.: 318−319, 345 (*Kyl. ruwenzoriensis*), 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 82, 86 (text) (*Kyl. erecta* var. *polyphylla*), 85 (*Kyl. elatior*), 1974; Haines & Lye, Sedges & rushes E. Afr.: 239 (*Cyp. aromaticus* & *Cyp. pinguis*), 240−241 (text, *Cyp. melanospermus* subsp. *elatus*), 1983; Troupin, Fl. Rwanda 4: 459, 1988 (*Kyl. elatior*); Gordon-Gray, Cyper. Natal: 114 (*Kyl. elatior*), 119 (*Kyl. polyphylla*), 1995 (nutlets); Fl. Eth. & Eritrea 6: 475, 1997 (*Cyp. pinguis*); Rheedea 10: 82, 2000; Taiwania 53: 233, 2008; Fl. Gabon 44, Cyper.: 81 (*Cyp. aromaticus*), 93 (*Cyp. teres*, nutlet), 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 383, 2014.

syn.: See below under the varieties.

Perennial herb to 92 cm tall with creeping very tough rhizome to 4 mm ∅, covered in pinkish red scales, fairly thick, aromatic (almost like *Acorus calamus*); culms green, densely set along the rhizome, 4−90 cm long, 1−4 mm ∅, trigonous to almost winged, glabrous, base swollen, covered with brownish or purplish membraneous sheaths; leaf sheaths reddish-brown to purplish 2−10 cm long, the lowermost without blades, one upper one with blade; blades flat, 2−20 cm long, 3−5 mm wide, margins and midrib scabrid, apex acute; inflorescence capitate, of 1 green to yellow-brown irregular hemispheric to ellipsoid head to 0,8−1,5 × 0,4−0,9 cm, with a central spike and usually several smaller lateral spikes; spikelets many, olive green in flower, turning yellow-brown, narrowly ovoid, 2,5−4 × 0,8−1 mm, 1−2-flowered.

Damp grassland; river-, lake- and streamsides; swamp edges; forest margins; damp hollows in grazed and cultivated areas, also in roadside-ditches and other disturbed habitats; rocky habitats; in somewhat shady habitats; damp reedy ground; seasonally flooded sedge meadow; 0−2350−2600 m alt.

Bioko/Fernando Poo; S. Africa; Madagascar, Mauritius, Réunion, Seychelles; introduced into (and naturalized in) SE Asia [Taiwan (Taiwania 53: 231−232, 2008), Sri Lanka, India (Rheedea 10: 81, 2000), Malesia]; Australia; Pacific islands, West Indies (Acevedo-Rodríguez & Strong: 279, 2012); Naczi & Ford (Sedges: uses…: 49, 2008) report: introduced into Samoa, Tahiti, Fiji where it is a weed of disturbed places, pastures, and roadsides up to 700 m alt. Spreading by rhizomes, it is a particularly serious pest in pastures because it displaces acceptable forage and is not eaten by livestock.

Two varieties are distinguished: – var. **polyphylla** [syn.: *K. aromatica* Ridl.; ***Cyperus aromaticus*** (Ridl.) Mattf & Kük., with var. *repens* Kük., var. *brachyrhizomatosus* Kük., var. *teres* (C. B. Clarke) Kük., var. *elatus* (Steud.) Kük.; *Kyllinga macrantha* Boeckeler; *K. elata* Steud.; *K. erecta* K. Schum. var. *polyphylla* (Kunth) S. S. Hooper; *K. polyphylla* Kunth var. *elata* (Steud.) Lye; *K. teres* C. B. Clarke; *K. melanosperma* Nees subsp. *elata* (Steud.) Lye, and var. *elata* (Steud.) J.-P. Lebrun & Stork; *Cyperus melanospermus* (Nees) V. Suringar subsp. *elatus* (Steud.) Lye; *Kyllinga planiceps* C. B. Clarke in T. Durand & Schinz, Consp. fl. Afric. 5: 531, 1894, nom. nud.; *K. elatior* sensu C. B. Clarke in Rendle, Cat. Welwitsch's Afric. pl. 2: 104, 1899, non Kunth: Angolan specimens; *K. involucrata* Bojer ex Baker; ?? *Cyperus senegalensis* C. B. Clarke; *Cyperus senegalensis* (C. B. Clarke) Mattf. & Kük. 1936, non C. B. Clarke 1894 nom. nud. (= *Cyp. conglomeratus* subsp. *conglomeratus*); *Kyllinga sphaerocephala* Boeckeler var. *brunnescens* C. B. Clarke, pro syn.] with glabrous culms closely set along the rhizome and with ± globose inflorescence 9−10 × 6−9 mm, glumes rarely with teeth; – var. **elatior** (Kunth) Kük. [bas.: *K. elatior* Kunth; syn.: *Cyperus aromaticus* (Ridl.) Mattf. & Kük. var. *elatior* (Kunth) Kük.; *Cyp. pinguis* (C. B. Clarke) Mattf. & Kük.; *Kyllinga pinguis* C. B. Clarke; *K. ruwenzoriensis* C. B. Clarke; *K. nervosa* Steud. var. *ruwenzoriensis* (C. B. Clarke) Lye; *Cyperus ruwenzoriensis* (C. B. Clarke) Huygh; *Cyp. oblongus* (C. B. Clarke) Kük. var. *ruwenzoriensis* (C. B. Clarke) Kük.] "recognised by the soft texture of the whole plant and the triquetrous culms each carrying a central cylindrical to elliptic greenish spike, sometimes accompanied by 1 or 2 shorter

lateral spikes, surrounded by 4−6 long bracts that spread at right angles"; leaves lemon-scented when bruised (Gordon-Gray, o.c.: 115); a softer plant with culms spaced along the rhizome, scabrid or glabrous; inflorescence a central spike 8−15 × 4−8 mm, glumes often with teeth (Fl. Trop. E. Afr., l.c.).

According to Gordon-Gray (o.c.: 120) the affinity is with *K. melanosperma* from which *K. polyphylla* [var. *polyphylla*] is most easily differentiated by its inflorescence and bracts which are stiff and later reflexed in *K. melanosperma*.

K. pseudobulbosa Mtot.; Fl. Trop. E. Afr., Cyper.: 344, 2010. – Icon.: Nord. J. Bot. 9: 638, 1990.

syn.: ***Cyperus pseudobulbosus*** (Mtot.) Lye

Perennial herb to 17 cm tall with short thick woody rhizome; culms solitary 10−16,5 cm long, 1,5−2 mm ∅, subtriangular, glabrous, with *bulbous* base covered by fibrous remains of leaf sheaths; leaves 6−8 per culm; sheath light green, to 5 cm long; blade linear, flat, 8−11 cm long, 3−4 mm wide, *apex obtuse*; inflorescence whitish to sulphur yellow, with 1−3 spikes *asymmetric*, 1−1,4 × *0,9−1,4* cm, the laterals smaller than the central one; spikelets many, densely set, lanceolate, 3−4 × 1−1,2 mm, 1-flowered.

Grassland on sandy soil; garden lawn; 1050−1600 m alt.

Near *K. bulbosa*, but lacks stolons.

K. pulchella Kunth 1837, incl. fa. *robustior* Kük., and var. *robustior* (Kük.) Podl., non *Cyperus pulchellus* R. Br. 1810; Lowrey & Wright, Fl. Witwatersrand 1: 51, 1987; Puff & Sileshi, Pl. Simen: 240, 2005 (as *Cyperus bracheilema*); Fl. Trop. E. Afr., Cyper.: 316−317, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 234, 1983 (as *Cyperus teneristolon*); Gordon-Gray, Cyper. Natal: 119, 1995 (nutlet); Fl. Eth. & Eritrea 6: 473, 1997 (as *Cyp. bracheilema*).

syn.: ***Cyperus bracheilema*** (Steud.) Mattf. & Kük.; *Kyllinga bracheilema* Steud.; *K. atrosanguinea* Steud.; *K. transitoria* (Kük.) T. Koyama; *K. anomala* Peter & Kük. 1935 in sched., nom. inval., non *Cyperus anomalus* Steud. 1854 (= *Cyp. javanicus* Houtt.); *Cyperus teneristolon* Mattf. & Kük., incl. var. *robustior* (Kük.) Kük.; *Cyp. transitorius* Kük.

Short-lived perennial herb with long rhizome or long slender *stolons* < 1 mm ∅ (easily broken off during collecting); culms tufted, 10−50 cm long, 0,6−1,4 mm ∅, 3-angled to almost terete, glabrous; leaf sheath pale red-brown, 2−4,5 cm long; blade 7−30 cm long, 1,6−3 mm wide, scabrid near the very apex; inflorescence dark red of *1* cylindric *central spike* and *1−3 smaller lateral* ones (rarely a single one), to 1 cm × 5−6 mm and sometimes 1−2 stalked for 1,5 cm; spikelets many, oblong-ovoid, 2−3 × 1−1,3 mm, 2−3-flowered.

Seasonally swampy grassland; seepage zone on rock; black clay soils; streamsides; 1350−3400 m alt.

S. Africa, Lesotho.

Easily recognized by its slender habit, dark red inflorescences, and numerous delicate stolons.

K. pumila Michx. 1803, non Steud. 1842 [= *Kyl. bulbosa* P. Beauv. = *Cyp. richardii* Steud.], nec Sieber ex C. Presl 1828 [= *Kyl. odorata* Vahl = *Cyp. sesquiflorus* (Torr.) Mattf. & Kük.]; *Kyl. pumila*, incl. var. *elatior* Kunth and var. *humilis* Kunth ex Boeckeler – Non *Cyperus pumilis* L. 1756 (= *Pycreus pumilis*) nec Rottb. 1773 (= *Pycreus sanguinolentus*). – Rendle, Cat. Welwitsch's Afric. pl. 2/1: 103, 1899; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 633, 1985; Simpson & Inglis in Kew Bull. 56: 324−325, 2001; Akoègninou & al., Fl. analyt. Bénin: 105, 2006; Lisowski, Fl. Rép. Guinée 1: 404, 2009 (*Kyl. pumila*, *K. robusta*); Fl. Trop. E. Afr., Cyper.: 325−326, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 113, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011 (*Kyl. pumila*, *K. robusta*); Fl. Gabon 44, Cyper.: 79−80, 2012 (*Cyp. afrorobustus*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 51, 2012 (map by Schmidt & al. in Phytotaxa 304: 131, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 112, 2015. – Icon.: Engler, Pflanzenreich IV. 20/101: 596, 1936 (as *Cyperus densicaespitosus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 84, 1974; Haines & Lye, Sedges & rushes E. Afr.: 243, 1983 (as *Cyperus densicaespitosus*); Berhaut, Fl. ill. Sénégal 9: 260, 1988 (*Kyl. pumila*, *K. robusta*); Fl. Eth. & Eritrea 6: 477, 1997 (idem); Fl. Gabon 44: 84−85, 2012 (idem); Velayos & al., Fl. Guinea Ecuat. 11: 384, 2014; Carter & al. in J. Bot. Res. Inst. Texas 10: 196−197, 2016 (spikelet, nutlet; as *Cyperus densicaespitosus*).

syn.: ***Cyperus hortensis*** (Salzm. ex Steud.) Dorr in Smithsonian Contr. Bot. 100: 62, 2014; *Kyllinga hortensis* Salzm. ex Steud. 1849; *K. viridiflora* Steud. 1840, nom. nud.; ? *K. viridiflora* Roxb. ex Spreng. in seed list (imprecise; cf. Dorr, l.c.); *K. caespitosa* Nees 1842, and var. *pumila* (Michx.) Boeckeler and var. *major* Nees, and var. *elatior* (Kunth) Boeckeler and subvar. *debilis* Kuntze; *K. pumila* Michx. var. *elatior* Kunth and var. *humilis* Kunth ex Boeckeler; *Cyperus densicaespitosus* Mattf. & Kük. var. *major* (Nees) Kük. and var. *rigidulus* (Steud.) Kük., but *excl*. var. *stenophyllus* (K. Schum. ex C. B. Clarke) Kük. (= *Kyllinga stenophylla* K. Schum. ex C. B. Clarke, non *Cyperus stenophyllus* J. V. Suringar); *Kyllinga rigidula* Steud.; *K. robusta* Boeckeler 1868, non *Cyperus robustus* Kunth 1837; *K. brevifolia* Rottb. var. *robusta* (Boeckeler) H. Pfeiff.; *Cyperus afrorobustus* Lye; *Kyllinga berberatica* Cherm., nom. in sched.; *Cyperus tenuifolius* sensu Andrews p.p., Flow. pl. Sudan 3: 357, 1956, non (Steud.) Dandy. – *Kyllinga tenuifolia* Steud. is sometimes considered as a synonym under *K. pumila*, so also by Kükenthal 1936. It is treated as a distinct species below. – For further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Short-lived perennial or annual herb, sweet-scented, with slender rootsystem; culms rather densely tufted, 8−45 cm long, 0,7−1,2 mm ∅, trigonous, glabrous; leaf sheaths reddish or purple, more upper ones green, 1−9 cm long, the lower ones covering culm bases and bladeless; blades flat or channelled near midrib, 7−25 cm long, 2−3,2 mm wide, midrib and margins scabrid; inflorescence an irregular greenish head of 1 central ovoid spike 5−8 × 4−6 mm, and 1−2(? 3) smaller lateral spikes, with spikelets on narrow receptacle; spikelets narrowly ovoid, 2−2,5 × 0,6−0,9 mm, 1-flowered; glumes with a conspicuous green ciliate keel.

Short-grassed damp more lofty mountain pastures with *Cleome*, etc.; stream-sides; ditches; boggy hollows; sandy river-beds or sandbanks; grassland; seasonally wet ground; rice fields; damp rocky habitats; inselbergs (Porembski & Brown in Candollea 50: 358, 1995; Tindano & al. in Bois Fôrets Trop. 325/3: 27, 2015); savannas; also ruderal; arable lands; 0−2000 m alt.

Cape Verde Isl.; Bioko/Fernando Poo; Madagascar; N. America, E & S USA south to N Argentina, S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed plants West Indies: 279, 2012; *K. tenuifolia* is considered as a synonym). – "A weed of lawns and turf … it is evidently the only *Kyllinga* species native to the continental U.S.A." (Naczi & Ford, Sedges: … uses: 49, 2008).

Similar to *K. microcristata*. *K. stenophylla* (See below) is doubtfully different from *K. pumila*.

K. rheophytica (Lye) J.-P. Lebrun & Stork, **comb. nov**. – Onana, Vascul. pl. Cameroon…: 161, 2011 (under *Cyperus*); Onana & Cheek, Red Data Book flow. pl. Cameroon: 365−366, 2011 (idem); Onana, Fl. Cameroun 40: 233, 2013 (idem) Kuelegue et al. in Phytokeys 121: 92, 88 (map), 2019. – Icon.: Lye & Cheek in Nord. J. Bot. 24: 274−275, 2006.

bas.: ***Cyperus rheophyticus*** [as *Cyperus rheophytorum* Lye in press, in Cheek & al., The plants of Kupe…: 437, 2004, English description only]; Lye in Nord. J. Bot. 24: 273, 2006. Type: Cameroon, SW division, Kupe-Muanenguba division, Muambong, bank of River Chide, 4°58'N × 9°41'E, 8 February 1998, J.-M. Onana 585 (holo -: K; iso-: 0, YA).

syn.: *Cyperus* sp. nov. by Lye in Cable & Cheek, Pl. Mt Cameroon: 156, 1998.

Perennial herb 30−50 cm tall with short horizontal rhizome; culms crowded, 5−30 cm long, 0,3−0,4 mm ∅, trigonous, glabrous; leaves from the lower 8 cm only, 3−4 per culm, only 2−3 perfecting blades; lower sheaths pale reddish-brown, upper greenish, all glabrous; largest blades to 10 cm long, 0,5−1,3 mm wide, flat, green, usually scabrid at least on margin and midrib near tip; inflorescence of 1 terminal globose whitish congested head c. 3 mm ∅; spikelets ovate, 1,5−1,7 × 0,7−0,9 mm, 1-flowered; glumes turning reddish brown when fruiting.

On rocks and stones in or beside forest streams and rivers, submerged during wet season; 500−1350 m alt. (for further information See: Cheek & al., Plants Kupe…: 49−51, 2004, with drawing Fig. 5 of a rheophyte community p. 51).

Similar to *K. brevifolia*.

K. rhizomafragilis Lye

syn.: ***Cyperus rhizomafragilis*** (Lye) Lye

Perennial herb; rhizome 1−4 mm ∅, crisp, with young parts covered by purplish scales; culms 20−40 cm long, 0,5−0,8 mm ∅, obscurely trigonous, glabrous; leaves from the lower 4−8 cm only; upper sheaths green, the lower purplish, glabrous; only the upper 1−4 with blades; largest blades 0,5−15 cm long, 0,5−2,5 mm wide, flat, margins and major ribs scabrid; inflorescence of 1 solitary hemispherical or spherical terminal head 4−5 mm ∅, with 1 spike pure white when young, drying to a cinnamon tinge; spikelets 40−80, spreading, strongly flattened, ovate, 2−2,2 × 1−1,2 mm.

Sandy plateau grassland, in shade of trees; 1400 m alt.

Only known from the type, collected in 1960 (Robison 3660).

Near *K. albogracilis*.

K. robinsoniana Mtot.; Fl. Trop. E. Afr., Cyperaceae: 325, 2010. – Icon.: Nord. J. Bot. 9: 638, 1990.

syn.: ***Cyperus robinsonianus*** (Mtot.) Lye, non *C. robinsonii* Podlech

Perennial herb without rhizomes or stolons; culms densely tufted, 6−8 per plant, with bases *bulbous*, surrounded by dense old leaf fibres, 6−19 cm long, 1−1,5 mm ∅, subtriangular, strongly ridged; leaf sheath light green to whitish, 1,5−3 cm long; blade linear, 6−17,5 cm long, 1,5−2 mm wide; inflorescence of 1 central light green to dirty white spike 7−9 × 3,5−5 mm, and 2 smaller lateral spikes; spikelets many, ovoid, 1,2−2,8 mm long, 2-flowered; keel of glume densely ciliate.

Pond edge; grassland with *Acacia* bushland; foot path; abandoned roadside; sandy vegetation; muddy sand in ditch; 1200−2000 m alt.

Near *K. pumila*.

(***K. ruwenzoriensis*** C. B. Clarke) – See above under **K. polyphylla** Willd. ex Kunth var. **elatior** (Kunth) Kük.

(***K. senegalensis*** C. B. Clarke 1902); Berhaut, Fl. ill. Sénégal 9: 257, 1988 (under *K. erecta*).

syn.: ***Cyperus senegalensis*** (C. B. Clarke) Mattf. & Kük. 1936, non C. B. Clarke 1894, nom. nud. (= *Cyperus conglomeratus* subsp. *conglomeratus*).

Probably a synonym of **Kyllinga polyphylla** Willd. ex Kunth – See above under that species (p. 224).

Described from a specimen collected on the Upper Senegal (the "Haut Sénégal, actually situated in Mali; Lécard 215).

(***K. serratangula*** (Peter & Kük. comb. ined.); Fl. Trop. E. Afr., Cyper.: 331, 2010 (under *K. cartilaginea* K. Schum).

bas.: *Cyperus cartilagineus* (K. Schum.) Mattf. & Kük. var. *serratangulus* Peter & Kük. in Engler, Pflanzenreich IV. 20/101: 609, 1936. Type: Peter 45780, Tanzania, Dodoma Distr., "Tschaya gegen Tschaya-See" (Chaya towards Lake Chaya), 5°37'S × 34°03'5E (Lake Chaya), 1240 m alt.; 4 January 1926 (type holo B; iso: B).

syn.: ***Cyp. serratangulus*** (Peter & Kük.) Huygh, Phytotaxa 166: 40, 2014.

Near *Kyllinga cartilaginea* K. Schum. Culm 50 cm long, scabrid in upper part; spikes 1 cm ∅; glumes membranous with purple glands ?, strongly minutely setose-ciliate on the narrowly winged keel; nutlet oblong, 2/3 of length of glume.

Ecology not recorded; 1240 m alt.

Under *Kyllinga cartilaginea* (Fl. Trop. E. Afr., Cyper.: 331, 2010) Beentje commented on this variety: "I have been unable to find the type at B, and therefore am unable to decide on the proper status of this taxon".

Not mapped by us.

K. songeensis Lye in Bot. Not. 125: 218, 1972; Fl. Trop. E. Afr., Cyper.: 343, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 246, 1983 (as *Cyperus songeensis*).

syn.: ***Cyperus songeensis*** (Lye) Lye

Perennial herb to 40 cm tall, with short horizontal rhizome; culms crowded, bases bulbous, 18−40 cm long, 0,4−1 mm ∅, *terete except near apex* where bluntly triangular, glabrous, basal parts covered by fibrous old leaf sheaths (pale to dark brown, 1−6 cm long); blade flat or folded, linear, 5−15 cm long, 1−2 mm wide, margin and midrib scabrid; inflorescence of 1 whitish globose spike 0,6−1,2 cm ∅; spikelets many, narrowly obovoid, *4−4,8* × 1−1,2 mm, 1−2-flowered, glumes unwinged.

Brachystegia woodland in sandy or black cotton soil; seasonally waterlogged grassland; 990 m alt.

Also recorded from Upland Kenya by Lye 1972, and Haines & Lye 1983, but no locality cited.

Related to *K. crassipes* but spike spherical and larger, and spikelets and glumes larger in *K. songeensis*.

(***K. sphaerocephala*** Boeckeler 1875, non *Cyperus sphaerocephalus* Vahl 1805) – (syn.: *Cyperus purpureoglandulosus* Mattf. & Kük.) See above under **K. bulbosa** P. Beauv. (syn.: *Cyperus richardii* Steud. 1854), with comment at end of text p. 214.

K. sphaerocephala Boeckeler var. *brunnescens* C. B. Clarke 1895 is cited in synonymy of *Cyperus senegalensis* (C. B. Clarke) Mattf. & Kük. 1936 in Engler, Pflanzenreich IV. 20/101: 581,

1936. See under **Kyllinga polyphylla** Willd. ex Kunth 1837 var. **polyphylla** above (p. 226).

K. squamulata Thonning ex Vahl 1805, non *Cyperus squamulatus* Steud. 1855; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 633, 1985; Simpson & Inglis in Kew Bull. 56: 325, 2001; Lisowski, Fl. Rép. Guinée 1: 404, 2009; Fl. Trop. E. Afr., Cyper.: 326, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (map by Schmidt & al. in Phytotaxa 304: 131, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 82, 1974; Haines & Lye, Sedges & rushes E. Afr.: 250, 1983; Fl. Eth. & Eritrea 6: 478, 1997 (as *Cyperus metzii*); Fl. Pakistan 206, Cyper.: 156, 2001; Prasad & Singh, Sedges Karnataka (India): 245, 2002; Akoègninou & al., Fl. analyt. Bénin: 106, 2006; Fl. Gabon 44, Cyper.: 89, 2012 (as *Cyperus metzii*); Fl. China, Ill. 23: 333, 2012.

syn.: ***Cyperus metzii*** (Hochst. ex Steud.) Mattf. & Kük.; *Kyllinga metzii* Hochst. ex Steud.; *K. squamulosa* Kunth 1837; *K. cristata* Afzel. ex A. Rich. 1850, non Kunth 1837 [= *Cyperus cristatus* (Kunth) Mattf. & Kük. 1936]; *K. dentata* Hochst. ex A. Rich. 1850, non *Cyperus dentatus* Torr. 1823.

Annual or short-lived perennial herb with slender root-system; culms 2−36 cm long, 0,5−0,8 mm ∅, trigonous or terete near base, glabrous; leaf sheath pinkish to red 1−6 cm long; blade linear, flat or slightly channelled, 4−25 cm long, 1−2,5 mm wide, midrib and margins scabrid; inflorescence of *1 sessile* irregular *spike*, 3−8 × 3−8 mm; spikelets many, broadly ovoid *2,5−4* × 1,3−1,8 mm, 1-flowered; "glumes with papery broadly dentate wings shaped like a cockscomb", apex acuminate. Forming low prostate mats.

Weed of cultivation; streambanks; lakeshores; open grassland; fallows; along ways; waste land; disturbed grounds; lawns; wooded thalweg; inselbergs (Bois & For. Trop. 325/3: 27, 2015); sandy ground; bowé; swampy area in savanna; damp disturbed ground in forest and driest savanna; 0−1800 m alt.

Cape Verde Isl.; Madagascar; SE Asia from India, Pakistan, Indo-China, S China to NE Australia. Introduced to Caucasus; SE N. America, Florida [Carter & al. in J. Bot. Res. Inst. Texas 10: 192, 2016 (as *Cyperus metzii*)], West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 281, 2012), Brazil (Costa & al. in Rodriguésia 63: 797, 2012).

Culms swollen at base, fragrant, sold in markets.

(**K. stenophylla** K. Schum. ex C. B. Clarke 1906, non *Cyperus stenophyllus* J. V. Suringar 1912); Troupin, Fl. Rwanda 4: 460, 1988; Onana, Fl. Cameroun 40: 222, 2013 (as *Cyperus camerunensis*). – Icon.: Fl. Gabon 44, Cyper.: 75, 2012 (idem; detail).

syn.: ***Cyperus camerunensis*** Lye; *Kyllinga pumila* Michx. var. *stenophylla* (K. Schum.) Cherm.; *Cyp. densicaespitosus* Mattf. & Kük. var. *stenophylla* (K. Schum. ex C. B Clarke) Kük.

Annual or perennial herb; culms filiform, 15−40 cm long, 0,3−0,6 mm ∅, trigonous, glabrous, slightly winged below inflorescence, with leaves only on basal 5 cm; leaf sheaths reddish brown, ending in a 1−5 cm long point; blade absent or very short, filiform; inflorescence a globulous to hemispheric spike, 3−5 mm ∅; spikelets numerous, elliptic-lanceolate, c. 2 × 0,6 mm, white.

Edge of dry meadows; forest; edges of tracks and rivulets; shady humid places; c. 300−500(−2000) m alt.

Known only from ? Rwanda, W Cameroon, Gabon. "Not seen since 117 years" (Flore du Cameroun, l.c., 2013) in spite of intense prospection made in 1992−1994.

Presence in Rwanda needs confirmation, and specimens Auquier 3436, Bouxin 1171, Christiaensen 1670, Van der Veken 10951 need revision, perhaps also those from W Cameroon, viz. Preuss 1380, Mildbraed 5340, 10656. *Kyllinga stenophylla* K. Schum. ex C. B. Clarke is cited by Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda. The illustration (photograph p. 341) does not seem to correspond with the description as the plant is leafy with rather wide leaf blades. The text also indicates a distribution in "East Africa south to Zambia".

K. stenophylla is perhaps a very slender form of *K. pumila*.

Our map (p. 231) is tentative.

K. tanzaniae Lye; Fl. Trop. E. Afr., Cyper.: 343−344, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 233, 1983 (under *Cyperus*).

syn.: ***Cyperus tanzaniae*** (Lye) Lye

Perennial herb with thickish horizontal or curved rhizome; culms solitary or somewhat crowded, 15−40 cm long, 4−8 mm ∅, *trigonous*, glabrous; leaf blade linear, flat, 3−8 cm long, 1−2 mm wide, margin and primary vein scabrid; inflorescence of 1 capitate white or cream, ovoid to globose spike 5−8 × 5−7 mm; spikelets *2,5−3,5 mm long*, 1-flowered.

Well-drained grassland; often in miombo woodland; 1270−1400 m alt.

Near *K. albiceps* "but distinct in thicker rhizome, and absence of long stolons".

K. tenuifolia Steud. 1854, incl. *K. welwitschii* Ridl. (as var. **ciliata** below); in some floras figuring as *Cyperus triceps*; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 633−634, 1985; Lye in Candollea 51: 423−424, 429 (map), 1996 (as *Cyperus welwitschii*, Somalia); Clarke & Mannheimer, Cyper. Namibia: 93, 78 (map), 1999 (*Kyl. welwitschii*); Archer & Craven, Cyper. Namibia: 13, 2004 (idem); Burrows & Willis, Pl. Nyika Plateau, Malawi: 301, 2005; Lisowski, Fl. Rép. Guinée 1: 404, 2009; Fl. Trop. E. Afr., Cyper.:329−333, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011 (*Kyl. tenuifolia*, *K. welwitschii*); Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 6, 1974; Haines & Lye, Sedges & rushes E. Afr.: 232, 1983 (as *Cyp. triceps*, *Cyp. welwitschii*); Berhaut, Fl. ill. Sénégal 9: 262 (*Kyl. tenuifolia*), 263 (*Kyl. welwitschii*), 1997; Fl. Eth. & Eritrea 6: 472, 1997 (as *Cyp. triceps*, *Cyp. welwitschii*); Fl. Pakistan 206, Cyper.: 156, 2001 (as *Kyl. triceps*); Fl. Gabon 44, Cyper.: 97, 2012 (as *Cyp. triceps*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (*Kyl. tenuifolia* incl. *K. welwitschii*), map by Schmidt & al. in Phytotaxa 304: 131, 2017.

syn.: ***Cyperus tenuifolius*** (Steud.) Dandy 1944, non Walp. 1849, sphalm. (= *Cyp. rotundus*) nec T. L. Dai 1961 (= *Cyp. mitis* Steud. 1855, W Indian Ocean islands to China). – See also under the varieties, as well as comments, below.

Perennial tufted herb; culms 5−32 cm long, 0,4−1 mm ∅, trigonous, glabrous, bases swollen and densely covered with old leaf sheaths, old bases persisting; leaf sheath brown, more pinkish towards base, 1−8 cm long; blade linear, flat, slightly channelled, often with small longitudinal purple marks, 5−20 cm long, 1−3 mm wide, margins and primary vein scabrid; inflorescence of 1 irregular white to cream head, often *triangular*, c. 0,5−1,2 × 0,5−1,2 cm, consisting of 1 to several (usually 3) spikes; spikelets many per spike, narrowly and sometimes asymmetrically ovoid,

1,5−2,5 × 0,7−0,8 mm, 1-flowered, slightly gaping at maturity; keel of glumes ciliate in var. *ciliata*.

Streamsides; riverine forest; seasonally swampy sites; damp places in savanna; *Acacia* scrub or grassland, usually along drainage lines or in seasonally wet sites; sandy soils; cultivations; fallows; along ways; thalweg in sandstone rock; marshy places on rocks; damp littoral flats; 0−2700 m alt.

S. Tomé; NW Namibia; Pakistan, Nepal, India, Sri Lanka, Indo-China, China.

Comprises 2 vars.: – var. **tenuifolia** [syn. *K. triceps* Rottb., nom. illeg., cf. comment below; *K. triceps* var. *obtusiflora* Boeckeler; *Cyperus triceps* (Rottb.) Endl. and var. *obtusiflorus* (Boeckeler) Kük., and var. *angustifolius* Kük.]; – var. **ciliata** (Boeckeler) Beentje [bas.: *Kyl. triceps* var. *ciliata* Boeckeler; syn.: *Cyperus triceps* var. *ciliatus* (Boeckeler) Kük.; *Kyllinga welwitschii* Ridl.; ***Cyperus welwitschii*** (Ridl.) Lye; *Cyp. controversus* (Steud.) Mattf. & Kük. var. *subexalatus* (C. B. Clarke) Kük.; *Kyllinga controversa* Steud. var. *subexalata* C. B. Clarke].

Comment: As noted by Beentje in Fl. Trop. E. Afr. (l.c.) Kukkonen's proposal (1193; Taxon 44: 626, 1995) to conserve *Kyllinga triceps* Rottb. 1773 has not been approved (Taxon 47: 864, 1998). "In the protologue Rottboell cited *Scirpus glomeratus* L. in synonymy, and *K. triceps* is superfluous and illegitimate." S. S. Hooper took up the name *K. tenuifolia* Steud. in Flora of West Tropical Africa, ed. 2, 2/3: 305, 1972… "and the species in question should be known as *K. tenuifolia*".

Kyllinga tenuifolia Steud. is treated as a synonym of *K. bulbosa* P. Beauv. by Prasad & Singh, Sedges of Karnataka (India): 236−237, 2002.

K. tenuifolia Steud., as well as *K. triceps* Rottb., are cited as synonyms of *K. pumila* Michx. by Velayos & al., Flora de Guinea Ecuatorial 11: 121, 2014. This is also the interpretation given by Acevedo-Rodríguez & Strong, Catalogue of seed plants of the West Indies: 279−280, 2012.

Material of *Kyllinga inselbergensis* has previously been assigned to *K. tenuifolia* (Parmentier & Müller in Phytocoenologia 36: 579, 2006).

(**K. tibialis** Poit. ex Ledeb.); Fl. Mesoamericana 6: 445, 1994; Acevedo-Rodríguez & Strong, Catalogue seed pl. West Indies: 280, 2012.

syn.: ***Cyperus tibialis*** (Poit. ex Ledeb.) Govaerts, World Checklist Seed Pl. 3/1: 21, 1999; *Mariscus aphyllus* Vahl; *Kyllinga aphylla* (Vahl) Kunth 1837; *K. peruviana* Lam. var. *foliata* Kük.; *Cyperus peruvianus* (Lam.) F. N. Williams var. *foliatus* (Kük.) Kük.; *Cyperus aphyllus* (Kunth) F. Muell. 1874, nom. illeg.

Perennial herb with horizontal rhizome; culms 15−60 cm tall, 1,5−2 mm ∅, trigonous, with 3−7 leaf sheaths at base without blades; inflorescence a solitary globose spike 7−13 mm ∅; spikelets lanceolate, 2,8−3,8 × 0,8−1,4 mm, compressed, 1-flowered.

A plant from C. & S. America, West Indies.

Indicated from Senegal and Nigeria in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, consulted in 2017. Not in Lowe & Stanfield, Fl. Nigeria: Sedges, 1974, or in Fl. W. Trop. Africa, ed. 2, 3/2, 1972. Specimens of this American species from W. Africa need confirmation. – Not mapped.

Is there confusion with *Kyl. vaginata* Lam. [= *Cyperus obtusatus* (J. Presl & C. Presl) Mattf. & Kük.] ?

K. tisserantii Cherm. 1931, non *Cyperus tisserantii* Cherm. 1931 [= *Cyperus niveus* Retz. var. *tisserantii* (Cherm.) Lye], nec *Fimbristylis tisserantii* Cherm. 1931 [= *Bulbostylis viridecarinata* (De Wild.) Goetgh.]; Lowe & Stanfield, Fl. Nigeria: Sedges: 89, 1974.

syn.: ***Cyperus breviglumis*** Lye

Tufted herb 7−16 cm tall with culms slightly swollen at base; leaves 7−15 cm long, 0,5−1,5 mm wide; inflorescence of 1 cylindrical head 3−7 × 2−4 mm, sometimes with 1−2 small lateral spikes at base; spikelets reddish, rather flat, compressed, 2,25−2,5 mm long, 1-flowered; glumes exceeding the spherical nutlet.

Damp places; soil pockets; inselbergs; in shallow soil on lateritic outcrop; on sandstone.

Similar to small specimens of *K. odorata*.

According to Kükenthal (in Engler, Pflanzenreich IV. 20/101: 594−595, 1936) similar to *K. odorata* Vahl [= *Cyperus sesquiflorus* (Torr.) Mattf. & Kük. var. *cylindricus* (Nees) Kük. fa. *elongatus* (Boeck.) Kük.].

K. tisserantioides Mtot.; Akoègninou & al., Fl. analyt. Bénin: 106, 2006. – Icon.: Nord. J. Bot. 9 : 639, 1990.

syn.: ***Cyperus tisserantioides*** (Mtot.) Lye – The type cited by Lye in Lidia 7: 97, 2011, is erroneous (Robinson 4357, Zambia, K holotype, GHS isotype). The type is from Nigeria, E Centr. State, Enugu, Ngwo, Lowe 9497, 31. III. 1972 (K holotype; UIH isotype).

Perennial herb; rhizome segmentally constricted, to 5 cm long; culms densely set, 16−43 cm long, 1−1,5 cm ∅, ± trigonous, glabrous, *strongly ridged*, base bulbous with fine whitish fibres; leaves usually 7 (5−8) per culm, all with blades, 10−20 cm long, 0,9−2 mm wide, margins and midrib densely scabrid, limited to the lower 3−5 cm; inflorescence a compound dull white to brownish head 14−16 mm wide, of *2−3 spikes*; central spike cylindric, 10−13 × 3−5 mm; spikelets ovoid, brownish without red purple dots, 2−2,5 × 1,5−1,8 mm.

Probably forest margins in high rainfall areas.

Superficially resembling *K. tisserantii* from which it is distinguished by its rhizome, ridged culms, compound inflorescence.

K. ugogensis (Peter & Kük.) Lye; Fl. Trop. E. Afr., Cyper.: 320, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 237, 1983.

bas.: ***Cyperus ugogensis*** Peter & Kük.

syn.: *Kyllinga ferruginea* Peter in sched. pro syn. in Engler, Pflanzenreich IV. 20/101: 572, 1936, non *Cyperus ferrugineus* Poir. 1806.

Perennial herb probably with a creeping rhizome or stolon; culms tufted, 2−18 cm long, 0,4−0,6 mm ∅, trigonous, glabrous, *bases bulbous*; leaf sheath brownish, 0,8−1,5 cm long; blade linear, flat or folded, 4−12 cm long, *0,8−1 mm wide*, scabridulous on margins near apex; inflorescence capitate of a single ± globose spike, 4,5−7 mm ∅; spikelets ovoid, 2−2,6 × 0,9−1,1 mm.

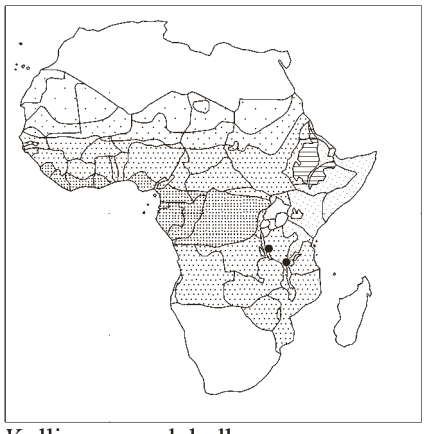
Boggy soil; wet sandy hollows on lake shores; on thin soil over rock; 750−1550 m alt.

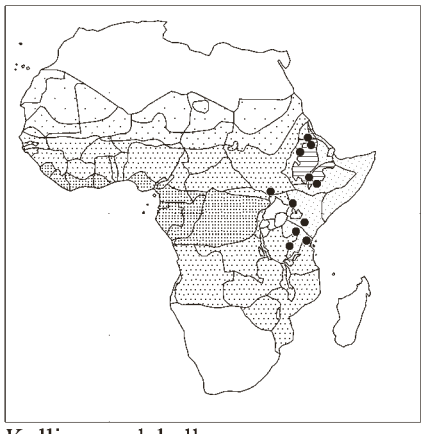
Similar to *K. brevifolia*.

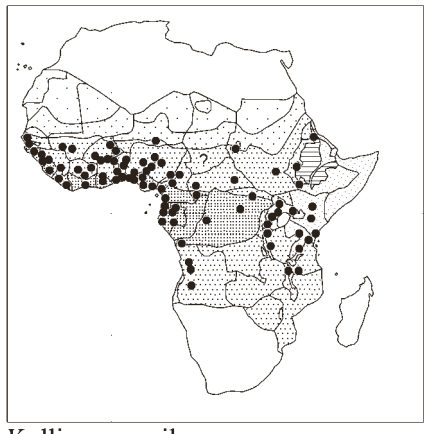
K. uniflora Mtot. 1990, non *Cyperus uniflorus* Thunb. 1825 nec Torr. & Hook. 1836; Fl. Trop. E. Afr., Cyper.: 342−343, 2010. – Icon.: Nord. J. Bot. 9: 640, 1990.

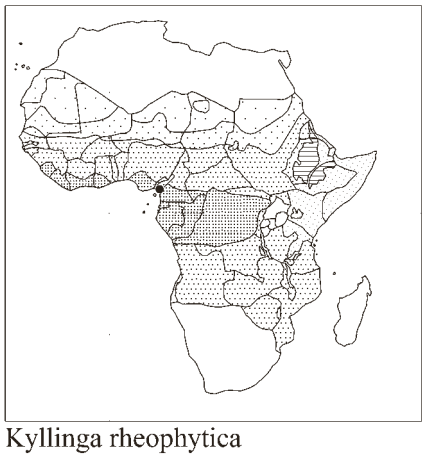
syn.: ***Cyperus monoflorus*** Lye in Lidia 7: 97, 2011, nom. nov.; *C. njombensis* Huygh 2014, Phytotaxa 166: 40, 2014, nom. nov. superfl.

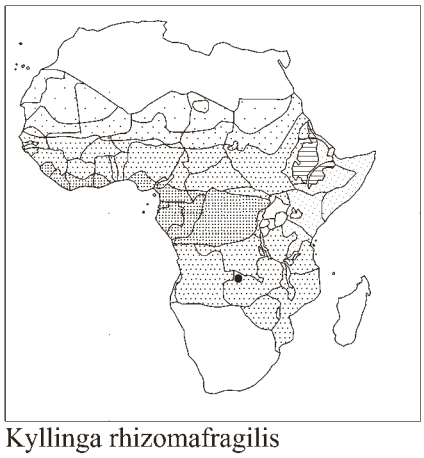
Perennial herb with short creeping rhizome; culms solitary, quite closely spaced, 40−60 cm long, acutely trigonous, glabrous,

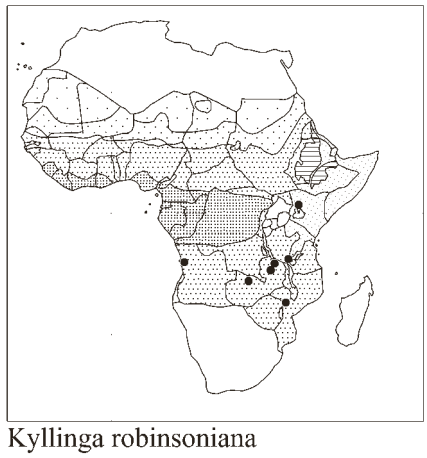

Kyllinga pseudobulbosa

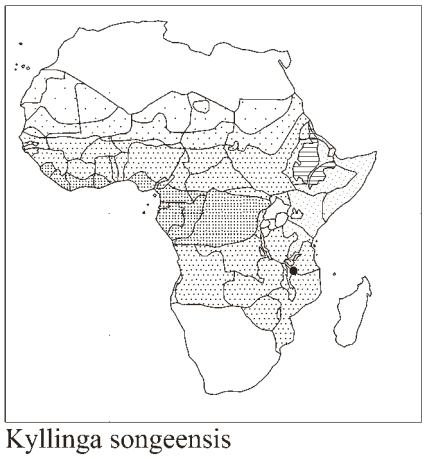

Kyllinga pulchella

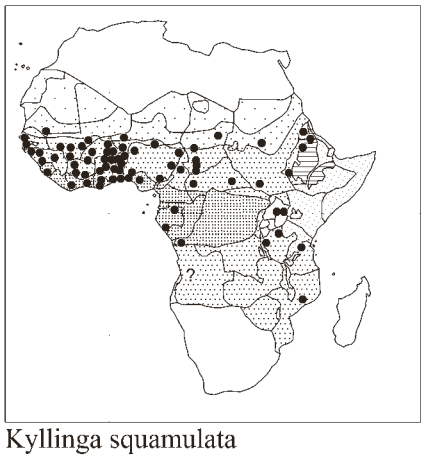

Kyllinga pumila

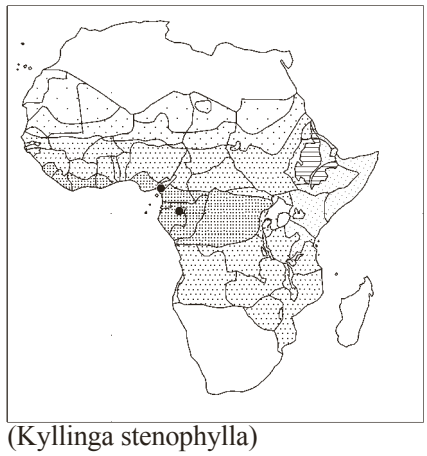

Kyllinga rheophytica

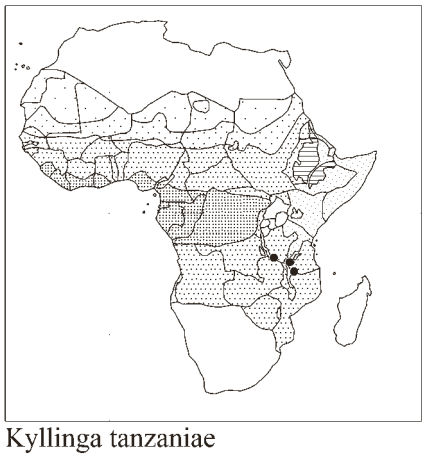

Kyllinga rhizomafragilis

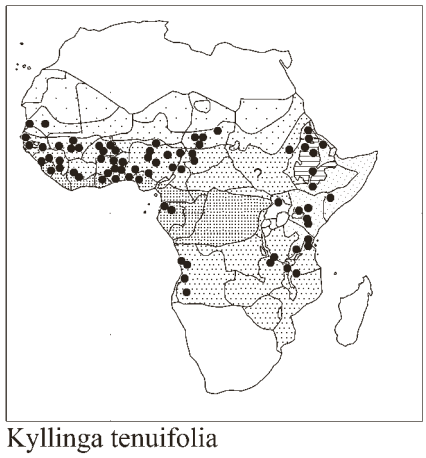

Kyllinga robinsoniana

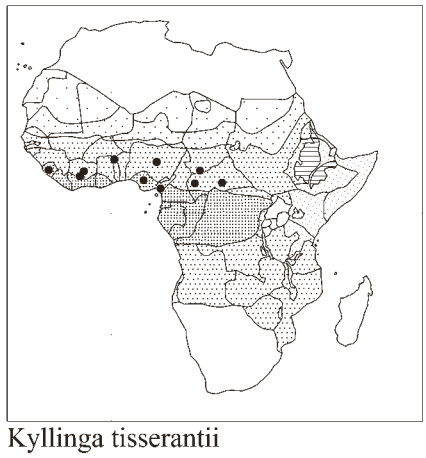

Kyllinga songeensis


Kyllinga squamulata


(Kyllinga stenophylla)


Kyllinga tanzaniae


Kyllinga tenuifolia


Kyllinga tisserantii

slightly bulbous at base; leaves 3−4 per culm; blade linear, 21−38 cm long, 3,5−4 mm wide, margins scabrid; inflorescence of 1 light brown head 1−1,1 × 0,8−1,1 cm; spikelets ovoid, light brown, 3−3,5 × 0,8−1,1 mm, 1-flowered.

Thickets within miombo woodland.

Near *K. peteri* but: spike light brown (not blackish brown); spikelet size (3−3,5 not 3−5,5 mm long), and 1-flowered (not 2-flowered); nutlets pale brown (not black).

Only known from the type collected in 1982.

K. vaginata Lam. 1791, non *K. vaginata* Zoll. 1846, nec *Cyperus vaginatus* R. Br. 1810 (Australian plant) nec *Cyp. vaginatus* Link 1820 (= *Cyp. haspan*). – Often figuring as *K. peruviana* in floras and flora lists. – Lowe & Stanfield, Fl. Nigeria: Sedges: 87, 1974; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 632−633, 1985 (as *Kyl. peruviana*); Simpson & Inglis in Kew Bull. 56: 325−326, 2001; Akoègninou & al., Fl. analyt. Bénin: 106, 2006; Lisowski, Fl. Rép. Guinée 1: 404, 2009 (as *Kyl. peruviana*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011 (idem). – Icon.: P. Beauv., Fl. Oware 1: pl. 31, 1806; Kükenthal in Engler, Pflanzenreich IV. 20/101: 577, 1936 (as *Cyperus peruvianus*); Amer. J. Bot. 39: 386, 1952 as *Kyllinga peruviana*); Berhaut, Fl. ill. Sénégal 9: 259, 1988 (idem); Fl. Gabon 44, Cyper.: 92−93, 2012 (as *Cyp. peruvianus*); Velayos & al., Fl. Guinea Ecuat. 11: 386, 2014 (*Kyllinga vaginata*).

syn.: *Kyllinga peruviana* Lam. 1792, nom. superfl., excl. var. *foliata* Kük.; *Cyperus peruvianus* (Lam.) F. N. Williams 1907, excl. var. *foliatus* (Kük.) Kük.; *Cyp. aphyllus* Hassk., nom. illeg.; *Kyllinga capitata* P. Beauv. [but excl. *K. globosa* P. Beauv. (recte *K. bulbosa* P. Beauv., sphalm.) & pl. 8]; *K. rigida* Baldwin; *K. pungens* Link; *K. obtusata* (J. Presl & C. Presl) (S. America); ***Cyperus obtusatus*** (J. Presl & C. Presl) Mattf. & Kük., p.p. (cf. under *Kyllinga erecta* above); for further synonyms See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial or seasonal herb; rhizome creeping, c. 5 mm ∅, with close-set reddish brown scales; culms closely set on rhizome, 20−60 cm tall, 2 mm ∅, trigonous above, stiff, with a few basal leaf sheaths some or all blade-less, sheaths with purple dots, blades if present 2−6−10 cm long, 1,5−3 mm wide, stiff, acuminate; inflorescence a solitary greenish-white spherical head, 8−11 mm ∅, subtended by 2−3 very short bracts (0,6−2 cm long); spikelets oblong-lanceolate, compressed, 2,4−3,5 mm long, 1(−2) flowered.

Lagoons, tidal swamps, tidal areas near the sea, mangroves, foreshores; disturbed coastal bush; in damp soil near rivers and streams; dominant on sand dunes of sea coasts, covering several m²; sometimes occurs also at larger distances from the sea; near sea-level.

Cape Verde Isl.; Bioko/Fernando Poo ?; C. & tropical S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 280, 2012; Fl. Mesoamer. 6: 445, 1994); Brazil (Rodriguésia 63: 797, 2012).

See above under *Kyllinga erecta* (*Cyperus obtusatus* var. *africanus* Kük. = subsp. *albescens*), and also *K. tibialis* (See above p. 230). Difficult to distinguish from *Kyllinga brevifolia*.

(***K. welwitschii*** Ridl.) – See above under **K. tenuifolia** Steud. var. **ciliata** (Boeckeler) Beentje

SYNONYMS:

Kyllinga alata Nees = **Kyllinga alba** (subsp.) var. **alata**

alba sensu C. B. Clarke, Fl. Trop. Afr. 8: 272, 1901, p. min. p., quoad specim. Holst 2082, non Nees 1836 = **K. cartilaginea**
alba Steud. 1842, non Nees 1836 = **K. controversa**
alba Nees var. *diminuta* Kük. = **K. alba** subsp. **alba**
alba Nees var. *exalata* (Merxm.) Podlech = **K. alba** subsp. **alba**
alba var. *laevissima* Cherm. = **K. alba** subsp. **alba**
alba var. *nigritana* (C. B. Clarke) Podlech = **K. alba** subsp. **alba**
alba subsp. *nigritana* (C. B. Clarke) J.-P. Lebrun & Stork = **K. alba** subsp. **alba**
albescens Steud. = **Lipocarpha chinensis**
ambigua Steud. 1854 = **Kyllingiella polyphylla**
anomala Peter & Kük. in sched. = **Kyllinga pulchella**
aphylla (Vahl) Kunth 1837= **K. tibialis**
appendiculata K. Schum. = **K. odorata** var. **major**
aromatica Ridl. = **K. polyphylla** var. **polyphylla**
ascolepidioides Cherm. = **K. alba** subsp. **ascolepidioides**
atrosanguinea Steud. = **K. pulchella**
aurata Nees = **K. brevifolia** var. **brevifolia**
aurata var. *lurida* (Kük.) Napper = **K. brevifolia** var. **lurida**
aurea Thomson 1863, nom. nud. = **K. comosipes** subsp. **comosipes**
aurea Hochst., nom. nud. = **K. alba** subsp. (var.) **alata**
baoulensis A. Chev. nom. = **Lipocarpha barteri**
berberatica Cherm., nom. in sched. = **Kyllinga pumila**
bifolia Miq. = **K. melanosperma** subsp. **bifolia**
biglumis (Gaertn.) Steud. = **Mariscus sumatrensis**
bracheilema Steud. = **Kyllinga pulchella**
brasiliensis Raddi 1823 = **K. odorata**
brevifolia Rottb. var. *intermedia* (R. Br.) Kük. – See at end of **K. brevifolia**
brevifolia subsp. *intricata* (Cherm.) Lye 1982 = **K. brevifolia** var. **brevifolia**
brevifolia subsp. *intricata* (Cherm.) J.-P. Lebrun & Stork 1995 = **K. brevifolia** var. **brevifolia**
brevifolia var. *leiolepis* (Franch. & Sav.) H. Hara (Ill. Cyper. Korea 2016) = **K. brevifolia**
brevifolia subsp. *lurida* (Kük.) Lye = **K. brevifolia** var. **lurida**
brevifolia subsp. *robusta* (Boeckeler) H. Pfeiff. = **K. pumila**
buchananii C. B. Clarke, non Boeckeler = ? **K. alba** subsp. **alba** (See also **K. buchananii**)
bulbocaulis Boeckeler = **Mariscus amomodorus**
bulbosa Steud. 1854, non J. Koenig ex Vahl 1805, nec P. Beauv. 1805 = **M. plateilema**
bulbosa sensu Fl. W. Trop. Afr., ed. 2, 3/2 : 304, 1972, p.p., excl. syn. *K. albiceps* = **Kyllinga bulbosa**
caespitosa Nees 1842 = **K. pumila**
caespitosa subvar. *debilis* Kuntze = **K. pumila**
caespitosa var. *elatior* (Kunth) Boeckeler = **K. pumila**
caespitosa var. *major* Nees = **K. pumila**
caespitosa var. *pumila* (Michx.) Boeckeler = **K. pumila**
capensis Steud. = **Mariscus capensis**
capitata P. Beauv. = **Kyllinga vaginata**
cephalotes Druce 1917 = **K. nemoralis**
chrysantha K. Schum. var. *comosipes* (Mattf. & Kük.) J.-P. Lebrun & Stork = **K. comosipes**
chrysantha var. *decolorans* Kük. = **K. comosipes** subsp. **decolorans**
colorata (L.) Druce 1917 = **Rhynochospora colorata** (L.) H. Pfeiff. from America

colorata var. *aurata* (Cherm.) Lye = **Kyllinga brevifolia** var. **brevifolia**
colorata var. *lurida* (Kük.) Lye = **K. brevifolia** var. **lurida**
comosipes (Mattf. & Kük.) Napper var *angustata* (Peter & Kük.) Napper = **K. comosipes** subsp. **comosipes**
comosipes subsp. *decolorans* (Kük.) Lye = **K. comosipes** subsp. **decolorans**
comosipes var. *decolorans* Lye 1983 = **K. comosipes** subsp. **decolorans**
comosipes var. *decolorans* (Kük.) Beentje = **K. comosipes** subsp. **decolorans**
consanguinea Kunth 1837 = **K. erecta**
controversa Steud. var. *subexalata* C. B. Clarke = **K. tenuifolia** var. **ciliata**
coriacea Cherm. = **K. cartilaginea**
cristata Kunth, incl. var. *exalata* Merxm. = **K. alba** subsp. **alba**
cristata Afzel. ex A. Rich. 1850 = **K. squamulata**
cruciformis Schrad. = **K. brevifolia** var. **brevifolia**
cylindrica Nees = **K. odorata** var. **cylindrica**
cylindrica var. *appendiculata* (K. Schum.) C. B. Clarke = **K. odorata** var. **major**
cylindrica var. *major* C. B. Clarke = **K. odorata** var. **major**
cyperoides Roxb. = **Courtoisina cyperoides**
decolorans (Kük.) Mtot. = **Kyllinga comosipes** subsp. **decolorans**
decora Steud. = **Ascolepis brasiliensis**
dentata Hochst. ex A. Rich. 1850 = **Kyllinga squamultata**
dipsacoides Schumach. = **Ascolepis dipsacoides**
dorsocrena Nees = **Kyllinga controversa**
eglandulosa Govind. & Ramani = **K. melanosperma**
elata Steud. = **K. polyphylla** var. **polyphylla**
elatior Kunth = **K. polyphylla** var. **elatior**
elatior sensu C. B. Clarke 1899, non Kunth = **K. polyphylla** ? var. **polyphylla**
erecta Schumach. var. *africana* (Kük.) S. S. Hooper = **K. erecta**
erecta subsp. *albescens* Lye = **K. erecta**
erecta var. *aurata* (Nees) Kük. = **K. brevifolia** var. **brevifolia**
erecta var. *intercedens* Kük. = **K. erecta**
erecta var. *intricata* (Cherm.) Kük. = **K. brevifolia** var. **brevifolia**
erecta var. *lurida* Kük. = **K. brevifolia** var. **lurida**
erecta var. *pleiocarpa* Kük. = **K. erecta**
erecta var. *polyphylla* (Willd. ex Kunth) S. S. Hooper = **K. polyphylla** var. **polyphylla**
erecta var. *schlechteri* Kük. = **K. erecta**
eriocauloides Steud. = **Ascolepis eriocauloides**
eximia C. B. Clarke var. *kelleri* C. B. Clarke = **Kyllinga comosipes** subsp. **comosipes**
ferruginea Peter ex Kük. = **K. ugogensis**
filicula C. B. Clarke = **K. odorata**
flava C. B. Clarke = **K. nervosa** subsp. **flava**
flava subsp. *jubensis* Mtot. = **K. nervosa** subsp. **jubensis**
flexuosa Boeckeler = **K. pumila**
fuscescens Boeckeler = **K. melanosperma** var. **melanosperma**
geminiflora Steud. = **K. bulbosa**
globosa P. Beauv. sphalm. (recte *K. bulbosa*) = **K. vaginata**
hortensis Salzm. ex Steud. = **K. pumila**
hyalina (Vahl) T. Koyama = **Queenslandiella hyalina**
imerinensis Cherm. = **Kyllinga melanosperma** var. **melanosperma**

KYLLINGA

imerinensis var. *perrieri* (Cherm.) Cherm. = **K. melanosperma** var. **melanosperma**
intermedia R. Br. – See at end of **K. brevifolia**
intricata Cherm. = **K. brevifolia** var. **brevifolia**
involucrata Bojer ex Baker = **K. polyphylla** var. **polyphylla**
jubensis Chiov. = **K. erecta**
leucantha Boeckeler = **K. bulbosa**
leucocephala Boeckeler 1875 = **K. comosipes** subsp. **comosipes**
leucocephala Baldwin 1825 = **K. odorata** subsp. **odorata**
leucocephala var. *pluriceps* Kük. = **K. odorata**
macrantha Boeckeler = **K. polyphylla** var. **polyphylla**
macrocephala A. Rich. 1850 = **K. bulbosa**
macrocephala A. Rich. var. *angustior* C. B. Clarke = **K. bulbosa**
macrocephala var. *oligantha* Cherm. 1935 = **K. bulbosa**
macrocephala var. *oligantha* Cherm. ex Staner 1933, nom. nud. = **K. bulbosa**
madagascariensis Gand. = **K. odorata**
mariae Steud. = **Mariscus dubius** var. **dubius**
melanosperma Nees subsp. *elata* (Steud.) Lye = **Kyllinga polyphylla** var. **polyphylla**
melanosperma var. *elata* (Steud.) J.-P. Lebrun & Stork = **K. polyphylla** var. **polyphylla**
melanosperma var. *gudaluriensis* Wad. Khan & R. D. Taur = **K. melanosperma** var. **melanosperma**
melanosperma Nees var. *plurifoliata* Kük. = **K. melanosperma** var. **melanosperma**
melanosperma var. *trispica* R. D. Taur & R. I. Shaikh = **K. melanosperma** var. **melanosperma**
merxmuelleri Podlech = **K. albiceps**
metzii Hochst. ex Steud. = **K. squamulata**
microcephala Steud. = **Kyllingiella microcephala**
mindorensis Steud. 1854 = **Kyllinga nemoralis**
monocephala Nees 1834, non Rottb. 1773 = **K. bulbosa**
monocephala Rottb. 1773 = **K. nemoralis**
monocephala Muhl. 1817 = **K. odorata**
monocephala Stokes 1812 = **K. nemoralis**
monocephala Sieber ex Steud. 1840 = **K. pumila**
monocephala var. *humilis* Boeckeler = **K. nemoralis**
monocephala var. *latifolia* Boeckeler = **K. nemoralis**
monocephala var. *subtriceps* Kunth = **K. nemoralis**
monocephala var. *tenuis* Boeckeler = **K. nemoralis**
multinervia Steud. = **Mariscus dubius** var. **dubius**
nana Nees = **Kyllinga bulbosa**
nervosa Steud. var. *flava* (C. B. Clarke) Lye = **K. nervosa** subsp. **flava**
nervosa subsp. *flava* (C. B. Clarke) Lye = **K. nervosa** subsp. **flava**
nervosa subsp. *jubensis* (Mtot.) J.-P. Lebrun & Stork = **K. nervosa** subsp. **jubensis**
nervosa subsp. *oblonga* (C. B. Clarke) J.-P. Lebrun & Stork = **K. oblonga**
nervosa var. *ruwenzoriensis* (C. B. Clarke) Lye = **K. polyphylla** var. **elatior**
nigritana C. B. Clarke = **K. alba** subsp. **alba**
obtusata J. Presl & C. Presl = **K. vaginata**
odorata Vahl 1805, non Liebm. 1850, nec Kunth 1816, var. *genuina* Osten = **K. odorata**
odorata Kunth subsp. *appendiculata* (K. Schum.) Lye = **K. odorata** var. **major**
odorata subsp. *cylindrica* (Nees) T. Koyama = **K. odorata** var. **cylindrica**
odorata subsp. *fallax* Kük. = **K. odorata** var. **major**
odorata var. *genuina* Osten = **K. odorata**

odorata var. *major* (C. B. Clarke) Chiov. = **K. odorata** var. **major**
parvula C. B. Clarke ex Rendle = **K. bulbosa**
perrieri Cherm. = **K. melanosperma** var. **melanosperma**
peruviana Lam. 1792 = **K. vaginata**
peruviana var. *foliata* Kük. = **K. tibialis**
pierreana E. G. Camus = **Cyperus leucocephalus** Retz. (India)
pinguis C. B. Clarke = **Kyllinga odorata** var. **elatior**
planiceps C. B. Clarke 1894, nom. nud. = **K. polyphylla** var. **polyphylla**
planiculmis C. B. Clarke ex Cherm. = **K. nemoralis**
planiculmis var. *mucronata* Cherm. = **K. nemoralis**
platyphylla K. Schum. var. *longifolia* = **K. platyphylla**
plurifoliata (Kük.) Cherm. = **K. melanosperma** var. **melanosperma**
polyphylla Willd. ex Kunth var. *elata* (Steud.) Lye = **K. polyphylla** var. **polyphylla**
pulchella Kunth fa. *robustior* Kük. and var. *robustior* (Kük.) Podlech = **K. pulchella**
pumila Steud. 1842 = **K. bulbosa**
pumila Sieber ex C. Presl 1828 = **K. odorata** subsp. **odorata**
pumila Michx. 1803 var. *elatior* Kunth = **K. pumila**
pumila var. *humilis* Kunth ex Boeckeler = **K. pumila**
pumila var. *stenophylla* (K. Schum.) Cherm. = **K. stenophylla**
pumilio Steud. 1854 = **K. brevifolia** subsp. **brevifolia**
pungens Link = **K. vaginata**
rigida Baldwin, non Link = **K. vaginata**
rigidula Steud. = **K. pumila**
robusta Boeckeler 1868 = **K. pumila**
ruwenzoriensis C. B. Clarke = **K. polyphylla** var. **elatior**
schimperi Hochst. ex Engl. = **K. bulbosa**
scirpina Rchb. ex C. B. Clarke = **Oxycaryum cubense**
senegalensis C. B. Clarke [= *Cyperus senegalensis* (C. B. Clarke) Mattf. & Kük.] = **Kyllinga** ? **polyphylla**
serrata Peter n. sp., nom. – See under **K. inaurata**
serratangula (Peter & Kük.) comb. ined. = **K.** ? **cartilaginea**
sesquiflora Torr. = **K. odorata** var. **odorata**
sesquiflora subsp. *cylindrica* (Nees) T. Koyama = **K. odorata** var. **major**
sp. A in Fl. Trop. E. Afr., Cyper.: 328, 2010 – See under **K. inaurata**
sphaerocephala Boeckeler, incl. var. *glandulosa* C. B. Clarke = **K. bulbosa**
sphaerocephala var. *brunnescens* C. B. Clarke pro syn. = **K.** ? **polyphylla** var. **polyphylla**
squamulosa Kunth 1837 = **K. squamulata**
sumatrensis Retz. = **Mariscus sumatrensis**
tenuifolia sensu Parmentier & Müller, non Steud. = **Kyllinga inselbergensis**
teres C. B. Clarke = **K. polyphylla** var. **polyphylla**
tetragona Nees 1832, nom. = **K. inaurata**
tetragona Nees ex C. B. Clarke 1897 = **K. inaurata**
transitoria (Kük.) T. Koyama = **K. pulchella**
triceps Rottb. = **K. tenuifolia** var. **tenuifolia**
triceps var. *ciliata* Boeckeler = **K. tenuifolia** var. **ciliata**
triceps var. *ciliata* sensu Rendle 1899 p.p. = **K. controversa**
triceps var. *obtusiflora* Boeckeler = **K. tenuifolia** var. **tenuifolia**
umbellata Rottb. = **Mariscus sumatrensis**
umbellata var. *sumatrensis* (Retz.) Willd. = **M. sumatrensis**

vaginata Zoll. 1846 = **Kyllinga melanosperma** var. **melanosperma**
viridiflora Roxb. ex Spreng. in seed list = **K.** ? **pumila**
viridiflora Steud. 1840, nom. nud. = **K. pumila**
viridula Hochst. ex A. Rich. = **K. odorata**
welwitschii Ridl. = **K. tenuifolia** var. **ciliata**

KYLLINGIELLA / *4*

syn.: *Cyperus* sect. *Leucocephali* Cherm. ex Kük.

Described by Haines & Lye in Bot. Not. 131: 176, 1978: "very similar to *Isolepis* R. Br. in spikelet structure, but this does not necessarily mean that these two genera are very closely related".

Plants resembling species of *Kyllinga* with capitate inflorescence but with *spirally arranged glumes*, and they look like small *Kyllinga in general habit*. Recent molecular phylogenetic studies showed that *Kyllingiella* is nested in *Cyperus* section *Leucocephali*, and thus validate a broad definition of *Cyperus*, uniting genera previously scattered in *Cyperoideae* (Larridon & al. in Pl. Ecol. Evol. 144: 327, 2011; Larridon & al., ibid. 146: 138–139, 2013). We do not follow this concept but refer to other recent treatises such as Goetghebeur in K. Kubitzky, The Families and Genera of Vascular plants IV: 169, 1998; Flora of Tropical East Africa, Cyperaceae: 128–131, 2010; Browning & Goetghebeur, Sedge … genera Africa & Madagascar.: 56, 2017, where *Kyllingiella* is maintained as a separate genus.

Genus of 4 species in tropical Africa and India, growing in temporarily damp habitats. For *Kyllinga ugandensis* the ecology is not recorded; it seems to be known only from the type collection (1963).

LARRIDON, I. & al. (2011). Taxonomic changes in C_3 Cyperus (Cyperaceae) supported by molecular data, morphology, embryography, ontogeny and anatomy. *Pl. Ecol. Evol*. 144: 327–356 [See p. 331].

MUASYA, A. M. & al. (2000). Phylogenetic relationships within the heterogeneous Scirpus s. lat. (Cyperaceae) inferred from rbcL and trnL-F sequence data. *In.:* WILSON, K. L. & D. A. MORRISON, eds., *Monocots: Systematics and Evolution*: 610–614: CSIRO, Melbourne.

MUASYA, A. M. & al. (2002). Generic relationships and character evolution in Cyperus s. l. (Cyperaceae). *Syst. Geogr. Pl*. 71: 539–544.

UBERTI, N. & al. (2016). Spikelet structure in Cypereae (Cyperoideae-Cyperaceae). *Bot. Rev*. 82: 239–257.

Kyllingiella microcephala (Steud.) R. W. Haines & Lye, non *Cyperus microcephalus* R. Br.; Clarke & Mannheimer, Cyper. Namibia: 94, 81 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 246, 2002; Lisowski, Fl. Rép. Guinée 1: 404, 2009; Larridon & al. in Pl. Ecol. Evol. 144: 331, 351–352, 2011; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 107, 2015 (as *Cyperus kyllingiella*). – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 124, 1972 (as *Scirpus microcephalus*); Bot. Not. 131: 176, 1978 (as *Isolepis microcephala*); Haines & Lye, Sedges & rushes E. Afr.: 142, 1983; Flora 176: 66, 1985; Berhaut, Fl. ill. Sénégal 9: 264, 1988; Fl. Eth. & Eritrea 6: 425, 1997; Archer & Craven, Cyper. Namibia: 23, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 302, 2005; Fl. Trop. E. Afr., Cyper.: 130, 2010; Velayos & al., Fl. Guinea Ecuat. 11: 387, 2014; Browning & Goetghebeur, Sedge genera Africa & Madag.: 56, 2017.

bas.: *Kyllinga microcephala* Steud.

syn.: *Scirpus microcephalus* (Steud.) Dandy; *S. kyllingioides* (A. Rich.) Boeckeler; *Isolepis microcephala* (Steud.) Lye; *I. kyllingioides* A. Rich.; ***Cyperus kyllingiella*** Larridon

Perennial tufted leafy herb; culms 5−47 cm tall, 0,3−1,1 mm ∅, 3-angled, glabrous, base swollen, conical or bulbous, covered in persistent coarse brown old leaf-base fibres; leaves 1−4 per culm, bright or dark green, ± half the culm length, flat or with margins inrolled, 3−22 cm long, 1−2 mm wide, margin and midrib with short spine-like hairs; sheaths grey or brown, 1,4−3,5 cm long, without ligule; inflorescence a dense terminal white head 3−10 mm ∅, consisting of many tightly packed rounded pseudo-spikelets 2−4 mm long; pseudo-spikelets consisting of many 1-flowered spikelets.

Woodland, bushland, on moist sand or mud; by swamps; in thin soil over rocks with seepage; grassy clearings; locally common; damp savanna; hollows; bushland with *Vitellaria paradoxa*; clay or hard pan; near sea-level to 2450 m alt.

Bioko/Fernando Poo; Namibia, Botswana, S. Africa; India.

Confused with *Cyperus pulchellus*.

K. polyphylla (A. Rich.) Lye, non *Cyperus polyphyllus* Vahl 1805 (= *Cyperus bulbosus*), nec Larrañaga; Fl. Trop. E. Afr., Cyper.: 128−129, 2010; Larridon & al. in Pl. Ecol. Evol. 144: 352, 2011 (as *Cyperus spiralis*); Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015 (as *Cyp. spiralis*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 143−144, 1983; Fl. Eth. & Eritrea 6: 427, 1997.

bas.: *Isolepis polyphylla* A. Rich.

syn.: ***Cyperus steudneri*** (Boeckeler) Larridon; *Kyllinga ambigua* Steud. 1854, non *Cyperus ambiguus* Liebm. 1850; *Scirpus steudneri* Boeckeler 1870; *Cyperus spiralis* Larridon 2011, nom. illeg. (cf. Pl. Ecol. Evol. 146: 138−139, 2013).

Perennial herb; culms 3−18 cm long, 0,3−0,5 mm ∅, arising closely at intervals of < 5 mm on a short horizontal rhizome to 2 mm ∅; base swollen, covered by fibrous remains of old leaf sheaths; leaves 3-many per culm, pale green, 4−17 cm long, 1,1−1,6 mm wide, flat, margin and midrib with minute spine-like hairs; sheath pale brown, to 2,8 cm long; inflorescence a terminal pale green head, globose to slightly wider than long, 3−10 mm ∅, of many spikelets 2−4 mm long.

Edges of depressions; shallow soil over rocks in woodland; bare patches in *Commiphora* bushland; in thin soil on granite outcrops; seasonally wet grassland; 750−2000 m alt.

According to Darbyshire & al. (l. c.) the record from Sudan (Quézel 1969) is probably a misidentification of *Kyllingiella microcephala*.

K. simpsonii Muasya; Fl. Trop. E. Afr., Cyper.: 131, 2010; Larridon & al. in Pl. Ecol. Evol. 144: 252, 2011 (as *Cyperus simpsonii*). – Icon.: Kew Bull. 57: 998, 2002; Browning & Goetghebeur, Sedge genera Africa & Madag.: 56, 2017 (nutlet).

syn.: ***Cyperus simpsonii*** (Muasya) Larridon

Tufted perennial herb with short horizontal rhizome to 3 mm ∅; culms 30−62 cm long, 0,7−1,5 mm ∅, glabrous, base covered by fibrous remains of old leaf sheaths; leaves several per culm, 5−15 cm long, 1,5−2,3 mm wide, flat or inrolled, margin and midrib with minute spine-like hairs; sheath pale brown, 4,4−7,5 cm long, glabrous; inflorescence a dense terminal dirty white head 3−7 × 5−9 mm, of many tightly packed spikelets; these cylindrical, to 3 mm long, many-flowered.

Seasonally wet grassland; wet patches in miombo woodland, 1000−1400 m alt.

Close to *K. microcephala*.

K. ugandensis R. W. Haines & Lye, non *Cyperus ugandensis* Chiov.; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 129, 2010; Larridon & al. in Pl. Ecol. Evol. 144: 351, 2011. – Icon.: Haines & Lye in Bot. Not. 131: 176, 1978; idem, Sedges & rushes E. Afr.: 143, 1983.

syn.: ***Cyperus acholiensis*** Larridon

Perennial herb; culm(s) arising from a short erect rhizome 1 mm ∅; culm 8−16 cm long, 0,2−0,5 mm ∅, 3-angular, glabrous, base slightly swollen and covered in old leaf sheaths; these glabrous 0,8−1,2 cm long; blades 3−7, 4−15 cm long, 0,1−0,15 cm wide, glabrous except for slightly scabrid midrib and margins; inflorescence a dense terminal head 2−3 × 3−4 mm of 3−6 tightly packed whitish spikelets; these ovoid, to 3 mm long, several-flowered.

Ecology not recorded but probably dry grassland; 1200 m alt.

? Known only from the type collected in 1963.

Closely related to *K. microcephala*.

(LANGEVINIA; Rapateaceae)

Langevinia monosperma Jacq.-Fél. = **Mapania amplivaginata**

(LEPIDOSPERMA)

Lepidosperma iridifolium Willd. ex Link = **Machaerina flexuosa** subsp. **polyanthemum**

(LIMNOCHLOA)

Limnochloa acutangula (Roxb.) Nees = **Eleocharis acutangula**
fistulosa (Schult.) Nees = **E. acutangula** subsp. **acutangula**
media (Roxb.) Nees = **E. acutangula** subsp. **acutangula**
mutata (L.) Nees = **E. mutata**
plantaginea (Retz.) Nees = **E. dulcis**

LIPOCARPHA / *21*

Lipocarpha R. Br. 1818, nom. cons.; syn.: *Hypaelyptum* Vahl 1805, nom. rej.; *Hemicarpha* Nees & Arn. 1834; *Cyperus* sect. *Volkiella* (Merxm. & Czech.) Bauters subsect. *Comosi* Bauters, and sect. *Lipocarpha* (R. Br.) Bauters; *Rikliella* J. Raynal; *Cyperus* sect. *Rikliella* (J. Raynal) Bauters

"The genus *Rikliella* [J. Raynal] was united with *Lipocarpha*, but erroneously so, and is now considered a separate section within *Cyperus* s. l." (Browning & Goetghebeur, Sedge genera of Africa & Madagascar: 58, 2017). However, we do not follow this concept below.

Genus of some 35 species in tropical, subtropical and warm temperate areas of the World, but concentrated in E Africa. They often grow in rather dry to seasonally wet grassland or woodland, some becoming weedy (Goetghebeur in K. Kubitzki, Families & genera vascul. pl. IV: 172, 1998).

Plants with eligulate leaves and terminal head-like inflorescence with 1 to many spikes, spikelets deciduous as a unit. "Each spike consists of a conical axis bearing spirally arranged glume-like bracts. In the axil of each of these bracts is a one-flowered spikelet and usually two small scales." Bristles absent (Browning & Goetghebeur, o.c.: 58).

Reutemann & al. (o.c.: 15) describe these plants as follows: they have "highly reduced reproductive structures and hypogynous scales that are controversially appreciated. Because of

this, flowers and spikelets and, thus, inflorescences have been interpreted in different ways … Some authors interpret spikelets in … *Lipocarpha* as many-flowered … However, many other authors consider spikelets in *Lipocarpha* … to be a result of a reductional process from a many-flowered cyperoid spikelet to a single-flowered spikelet … The latest molecular phylogenies of Cyperaceae show … [*Lipocarpha*] nested in the *Cyperus* clade, forming, in turn, a clade together with the rest of the Cypereae genera having single-flowered spikelets and hypogynous scales …". Studies using light and scanning electron microscopy "show that the 'hypogynous' scales simply represent vestigial structures derived from the reduction of typical cyperoid spikelets, rather than a perianth part … The inflorescence is a spike of reduced spikelets".

Bauters & al. (Phytotaxa 166: 16−17, 2014) proposed a new infrageneric classification under *Cyperus* based on the 7 clades found in their phylogenetic hypotheses. This is not followed here by us. We accept the classification proposed Browning & Goetghebeur, Sedge genera in Africa and Madagascar: 58, 2017.

Species identification is rarely evident, more frequently quite difficult (Goetghebeur & Van den Borre, Agric. Univ. Wageningen Papers 89/1, 1989).

Some species are very small, and certainly overlooked. Three species in our area are known only from the type collection (= c. 14−15 %).

BAUTERS, K. & al. (2014). A new classification for Lipocarpha and Volkiella as infrageneric taxa of Cyperus s. l. (Cypereae, Cyperoideae, Cyperaceae): insights from species tree reconstruction supplemented with morphological and floral developmental data. *Phytotaxa* 166: 1−32.

GOETGHEBEUR, P. & A. VAN DEN BORRE (1989). Studies in Cyperaceae 8. A revision of Lipocarpha, including Hemicarpha and Rikliella. *Wageningen Agric. Univ. Papers* 89/1: 1−87.

RAYNAL, J. (1973). Notes cypérologiques: 19. Contribution à la classification de la sous-famille des Cyperoideae. *Adansonia*, *Sér. 2*, 13: 145−171 [See p. 152−161].

REID, C. S. & al. (2017). Molecular systematics of targeted flat sedges (Cyperus, Cyperaceae) of the Americas. *Pl. Ecol. Evol.* 150: 343−357.

REUTEMANN, A. G. & al. (2014). Typical cyperoid reproductive structures in Lipocarpha humboldtiana and Ascolepis brasiliensis (Cypereae – Cyperoideae – Cyperaceae): New evidence from a development perspective. *Flora* 209: 15−22.

REYNDERS, M. & al. (2011). Nomenclature and typification of names of genera and subdivisions of genera in the Cypereae (Cyperaceae): 3. Names in segregate genera of Cyperus. *Taxon* 60: 885−895 [See p. 889].

UBERTI, N. & al. (2016). Spikelet structure in Cypereae (Cyperoideae – Cyperaceae). *Bot. Rev.* 82: 239−257.

Lipocarpha abietina Goetgh.; Figuerido & Smith, Pl. Angola: 181, 2008; Fl. Trop. E. Afr., Cyper.: 355, 2010. – Icon.: Berhaut, Fl. ill. Sénégal 9: 267, 1988 (as *L. atra* var. *atra*); Goetghebeur & Van den Borre, o. c.: 20, 84; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 58, 2017.

syn.: *L. triceps* (Roxb.) Nees var. *latinux* Kük.; *L. atra* sensu auctt.: Hooper in Hutch.& Dalziel, Fl. W. Trop. Afr., ed. 2, 3: 328, 1972; Hall, Bot. J. Linn. Soc. 66: 345, 1973, non Ridl.; *L. prieuriana* Steud. var. *acuta* Cherm., nom. in sched.; ***Cyperus abietinus*** (Goetgh.) Bauters

Tufted perennial herb; culms 45−80 cm long, 1,25−1,5 mm ∅; leaves to 45 cm long, 1 mm wide, often inrolled; inflorescence terminal, ± ovoid, with 4−7 spikes 2,5−10 × 2−4,5 mm; spikelet prophyll and glume 1,25−1,5 mm long.

Species with thick broad spikes composed of closely packed broadly shouldered spikelet bracts, resembling an *Abies*-cone.

Sands temporarily foul; swamps; humid places; ? to 1300 m alt.

Botswana.

L. albiceps Ridl. 1884, non *Cyperus albiceps* Ridl. 1884 [= *Kyllinga albiceps* (Ridl.) Rendle]; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 634, 1985; Akoègninou & al., Fl. analyt. Bénin: 107, 2006; Lisowski, Fl. Rép. Guinée 1: 404, 2009; Fl. Trop. E. Afr., Cyper.: 354, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (map by Schmidt & al. in Phytotaxa 304: 136, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 90, 1974; Haines & Lye, Sedges & rushes E. Afr.: 296, 1983; Berhaut, Fl. ill. Sénégal 9: 266, 1988; Goetghebeur & Van den Borre, o. c.: 20, 1989.

syn.: *L. purpureolutea* Ridl.; *Hypaelyptum albiceps* (Ridl.) K. Schum., non *Cyperus albiceps* Ridl.; *Cyperus echinolepis* T. Koyama; ***C. purpureoluteus*** (Ridl.) Bauters

Rhizomatous or tufted perennial herb; rhizome short, covered by red-brown cataphylls; culms 10−60−75 cm tall, 1−3 mm ∅; leaves 10−28 cm long, 1,5 mm wide, ± inrolled; inflorescence terminal, a dense head of 1−6-confluent ovoid spikes; terminal spike 3−15 × 3−7 mm; lateral spikes 2−6 × 1,5−4 mm; spikelet prophyll and glume 1,3−2,2 mm long.

Thicket-grown pastures flooded in summer; swampy meadows with *Ascolepis*; spongy slopes with *Ascolepis* and Glumaceae; open forests; savannas; long-time humid soils; damp places in grassland and woodland; boggy or seasonally wet grassland; ? -950−1900 m alt.

Confusion possible with *Kyllingiella microcephala* but in *Lipocarpha albiceps* the bracts (= "glumes") are dark brown-red at base.

L. atra Ridl., excl. var. *barteri* (C. B. Clarke) J. Raynal (= *L. barteri* C. B. Clarke); Fl. Trop. E. Afr., Cyper.: 355, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 297, 1983 (*L. atra* var. *atra*); Goetghebeur & Van den Borre, o. c.: 20, 1989.

syn.: *L. atra* var. *atra* sensu Haines & Lye, l. c.; ***Cyperus lipoater*** Goetgh.

Rhizomatous or tufted perennial herb; culms 10−65 cm tall, 1−1,5 mm ∅; leaves from near base only, 3−20−30 cm long, c. 1,5 mm wide, often inrolled; inflorescence a terminal head of 3−12 ovoid to conical spikes 3−13 × 2−4 mm; spikelet prophyll and glume 1−1,2 mm long.

Wet places by river banks; in sandy ground; boggy grassland; seepage in woodland; 250−1100 m alt.

L. atra var. *atra* sensu, e.g., Fl. W. Trop. Afr., ed. 2, etc. in W tropical Africa = *L. abietina*.

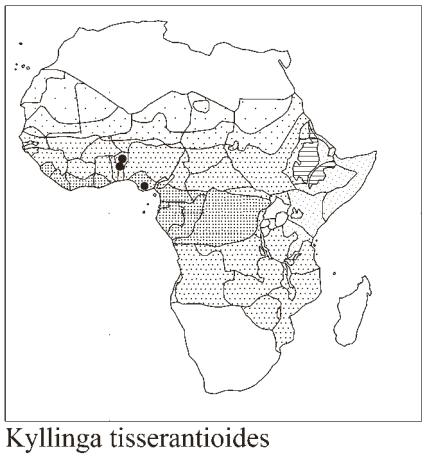
L. barteri C. B. Clarke, non *Cyperus barteri* Boeckeler 1868 (= *Cyp. pustulatus* Vahl); Akoègninou & al., Fl. analyt. Bénin: 107, 2006. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 90, 1974 (as *L. atra* var. *barteri*); Goetghebeur & Van den Borre, o. c.: 26, 1989.

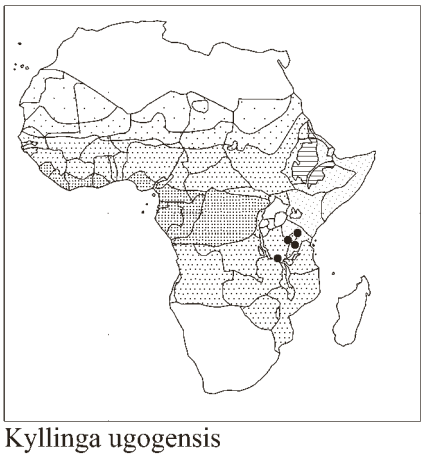
syn.: *L. atra* Ridl. var. *barteri* (C. B. Clarke) J. Raynal; *Kyllinga baoulensis* A. Chev., Explor. Bot. Afrique Occ. Franç. 1: 698, 1920, nom., non *Cyperus baoulensis* (A. Chev.) Kük. 1931 (= *Mariscus*); ***Cyperus neobarteri*** T. Koyama

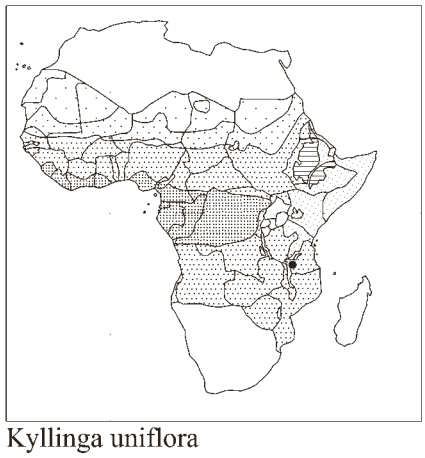
Tufted perennial herb; culms 20−75 cm tall, 1−1,5 mm ∅; leaves to 30 cm long, 2 mm wide, often inrolled; inflorescence terminal, with 3−5 spikes 4−10 × 3−5 mm, ovoidal to conical; spikelet prophyll and glume 1,3−1,7 mm long.

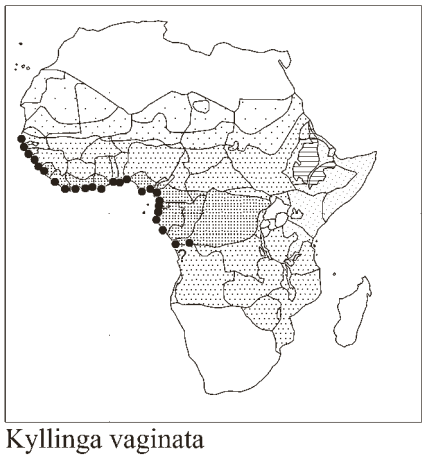
Wet patches in savanna.

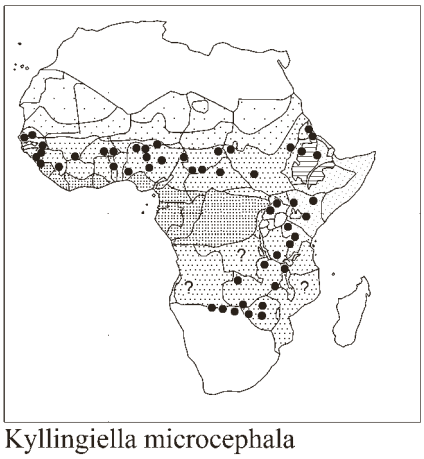
L. barteri sensu Peter, Fl. Deutsch-Ostafrika in Feddes Repert. Spec. Nov., Beih. 401: 384, 1937 = *L. leucaspis*.

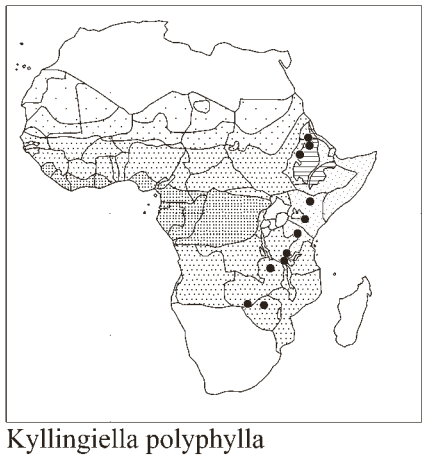

Kyllinga tisserantioides

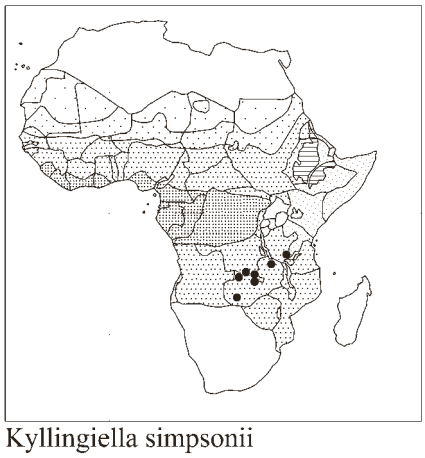

Kyllinga ugogensis

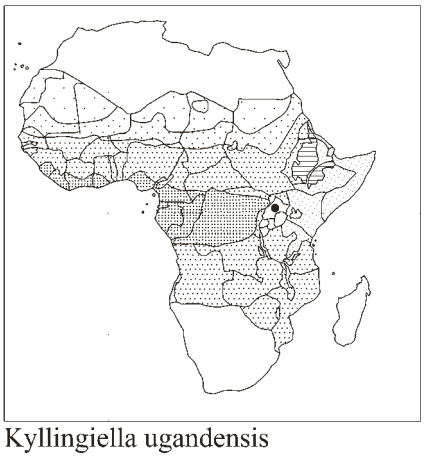

Kyllinga uniflora

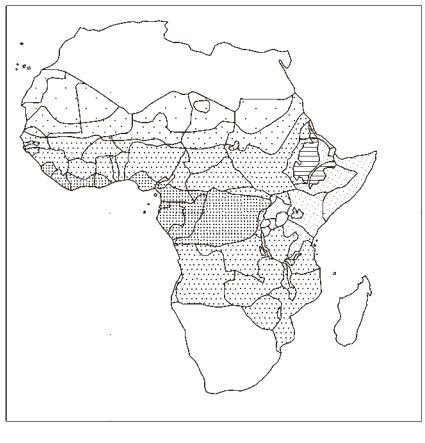

Kyllinga vaginata

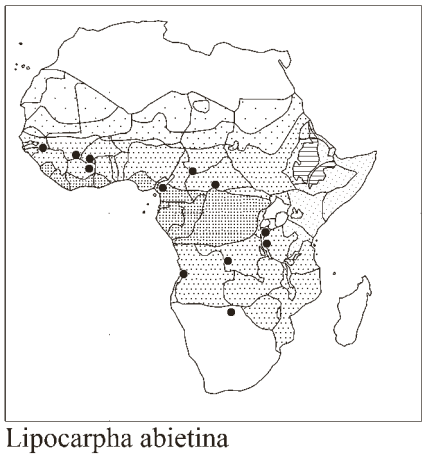

Kyllingiella microcephala

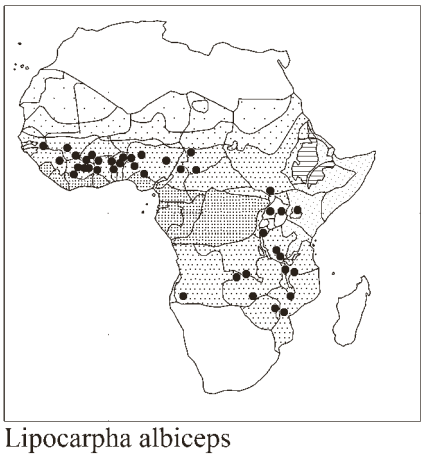

Kyllingiella polyphylla

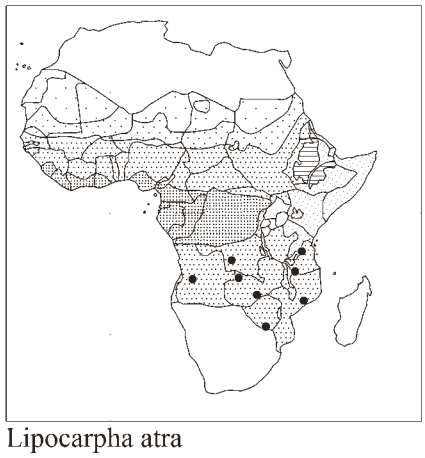

Kyllingiella simpsonii


Kyllingiella ugandensis




Lipocarpha abietina


Lipocarpha albiceps


Lipocarpha atra

L. chinensis (Osbeck) J. Kern, non *Cyperus sinensis* Debeaux 1877; M. Renier, Fl. Kwango 1: 68, 1948 (as *L. argentea*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 634, 1985; Simpson & Inglis in Kew Bull. 56: 326−327, 2001; Lisowski, Fl. Rép. Guinée 1: 404−405, 2009; Fl. Trop. E. Afr., Cyper.: 354−355, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (map by Schmidt & al. in Phytotaxa 304: 136, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Clarke, Ill. Cyper.: pl. 60/4−7, 1909 (as *L. argentea*); Haines & Lye in Bot. Not. 124: 474, 1971; idem, Sedges & rushes E. Afr.: 296, 1983; Adam, Fl. descr. Mts Nimba 6: pl. 1046, 1983; Berhaut, Fl. ill. Sénégal 9: 268, 1988; Troupin, Fl. Rwanda 4: 431, 1988; Goetghebeur & Van den Borre, o. c.: 26, 1989; Gordon-Gray, Cyper. Natal: 121, 1995 (nutlet); Fl. Eth. & Eritrea 6: 490, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 71, 2002; Fl. Gabon 44, Cyper.: 151, 153, 2012; Fl. China, Ill. 23: 336, 356, 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 388, 2014; Bauters & al., o. c.: 4, 2014; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 58, 2017.

bas.: *Scirpus chinensis* Osbeck

syn.: *S. senegalensis* Lam.; *Hypaelyptum senegalense* (Lam.) K. Schum.; *Lipocarpha senegalensis* (Lam.) T. Durand & H. Durand; *Kyllinga albescens* Steud.; ***Cyperus albescens*** (Steud.) Larridon & Govaerts; *Hypaelyptum argenteum* Vahl 1805, nom. superfl.; *Hypolytrum argenteum* Kunth 1816; *Lipocarpha argentea* (Kunth) R. Br., nom. superfl.; *Cyperus submaculatus* T. Koyama; *Cyperus lipocarpha* T. Koyama; *Rikliella chinensis* (Osbeck) M. R. Almeida; *Hypaelyptum albidum* Willd. ex Kunth, nom. invalid., in syn.; *Hypolytrum laevigatum* (Roxb.) Spreng; *Hypolytrum senegalense* (Lam.) Rich.; *Lipocarpha laevigata* (Roxb.) Nees; *L. debilis* Ridl.; *L. bawangensis* R. H. Miau; *Tunga laevigata* Roxb. – *Lipocarpha humboldtiana* Nees, sometimes considered as a synonym seems to be incorrect; it represents a different species (cf. Larridon & al. in Kew Bull. 71/2: 30: 2, 2016).

Tufted perennial herb; rhizome lacking; culms 15−80 cm tall, 0,5−2 mm ∅; leaves 10−40 cm long, c. 4 mm wide, glaucous or pale green, margins and midrib scabrid (minute teeth); old leaves persistent at base; inflorescence a terminal irregular head with 1−12 subequal ovoid white spikes 3−13 × 1,5−5 mm; spikelet prophyll and glume 1,2−2 mm long, often *with reddish stripes*.

Swampy enclave in mountain meadow with *Lycopodium cernuum*, *Fuirena*, mosses; granitic oozing pan; marsh on rocky pan, enclave in forest gallery with *Drosera pilosa*; permeable poor soil; temporarily humid sands; rice-fields; pond sides; seepage areas; swamps; may be locally common or co-dominant; swampy grassland; beside lakes; disturbed and wet mudflats; inselbergs (Porembski & Brown in Candollea 50: 358, 1995); 0−2100 m alt.

Bioko/Fernando Poo; Botswana, S. Africa, Swaziland (not in Namibia); Madagascar, Mauritius; tropical and subtropical regions of the Old World, from India, Sri Lanka, E-wards to Malaysia, Indonesia, Japan, Philippines, N Australia.

L. comosa J. Raynal 1970, non *Cyperus comosus* Smith 1806; Fl. Trop. E. Afr., Cyper.: 347, 2010; Gereau & al., Lake Nyasa florist. checklist: 47−48, 2012; Lock in Kew Bull. 70: 46, 2015 (types, Robinson). – Icon.: Kew Bull. 70: 46, 2015 (types, Robinson). – Icon.: Mus. Natl. Hist. Nat., Sér. 2, 41, 975, 1969; Haines & Lye, Sedges & rushes E. Afr.: 295, 1983; Goetghebeur & Van den Borre, o. c.: 26, 1989; Burrows & Willis, Pl. Nyika Plateau, Malawi: 302, 2005.

syn.: ***Cyperus lipocomosus*** Goetgh.

Rhizomatous perennial herb; rhizome 1−3 mm ∅, covered by small red-brown cataphylls; culms 15−55 cm tall, 1−1,5 mm ∅; leaves to 10−28 cm long, 1,5−3 mm wide, inrolled to subterete; inflorescence a terminal spherical head of several confluent spikes, 15−20 mm ∅; spikelet prophyll and glume 1−1,7 mm long.

Probably miombo woodland; open forest with *Brachystegia*; sandy hollows, very briefly and weakly flooded; 1550−2250 m alt. (East Africa).

L. constricta Goetgh.; Fl. Eth. & Eritrea 6: 489, 1997. – Icon.: Goetghebeur & Van den Borre, o. c.: 26, 1989.

syn.: ***Cyperus constrictus*** (Goetgh.) Bauters

Perennial herb; culms 20−60 cm tall, 0,7−1 mm ∅, somewhat trigonous; leaf blades to 20 cm long, 0,1−0,3 mm wide, glabrous; sheaths dark purple or green with dark purple dots or lines; inflorescence a congested head of 2−5 crowded red brown spikes 5−10 mm ∅; spikes 3−6 × 2,5−3 mm, ovate, obtuse; spikelet prophyll and glume c. 1,5−2 mm long.

Swampy ground; c. 1500 m alt.

L. crassicuspis (J. Raynal) Goetgh.; Berhaut, Fl. ill. Sénégal 9: 270, 1988 (as *L. prieuriana* var. *crassicuspis*). – Icon.: Raynal in Adansonia, Sér. 2, 7: 86, 1967; Goetghebeur & Van den Borre, o. c.: 33, 1989.

bas.: *L. prieuriana* Steud. var. *crassicuspis* J. Raynal

syn.: ***Cyperus crassicuspis*** (J. Raynal) Bauters

Tufted annual herb; culms 5−15 cm long, 0,4−0,5 mm ∅; leaves to 8 cm long, 2 mm wide; inflorescence a terminal head with 1−3 spikes 3−8 × 2,5−4 mm, ovoidal; spikelet prophyll and glume 1,3−1,5 mm long.

Sands very near salty ground.

L. prieuriana and *L. sphacelata* have the same general aspect and sometimes grow together.

L. echinus J. Raynal; Lock in Kew Bull. 70/4: § 46: 3, 2015 (E. A. Robinson coll.). – Icon.: Raynal in Adansonia, Sér. 2, 13: 160, 1973; Goetghebeur & Van den Borre, o. c.: 33, 1989.

syn.: ***Cyperus echinus*** (J. Raynal) Bauters

Tufted annual herb; culms 5−20 cm tall, 0,4−0,6 mm ∅; leaves to 7 cm long, 0,5 mm wide, inrolled; inflorescence terminal, with 3−5 spikes 3−7 × 2−3 mm, ovoidal to conical; spikelet prophyll and glume 0,7−0,8 mm long, dark violet.

Shady, temporarily dried up marshes; 1500 m alt.

Only known from the type collected in 1956 (Robinson 1550).

L. filiformis (Vahl 1805) Kunth 1837, non *Cyperus filiformis* Swartz 1788 – Often figuring as *L. sphacelata* (Vahl) Kunth in floras and flora lists. – Raynal in Adansonia, Sér. 2, 7: 85, 1967 (as *L. sphacelata*); Haines & Lye, Sedges & rushes E. Afr.: 298−299, 1983 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (map by Schmidt & al. in Phytotaxa 304: 136, 2017). – Icon.: Berhaut, Fl. ill. Sénégal 9: 271, 1988 (as *L. sphacelata*); Goetghebeur & Van den Borre, o. c.: 33, 1989; Fl. Gabon 44, Cyper.: 153, 155, 2012.

bas.: *Hypaelyptum filiforme* Vahl 1805

syn.: *Lipocarpha sphacelata* (Vahl) Kunth var. *barteri* C. B. Clarke, nom. nud., non *L. barteri* C. B. Clarke 1902; *L. sphacelata* sensu auctt. Afric., non (Vahl) Kunth: Rendle, Cat. Welw. Afric. pl. 2/1: 129, 1899; Raynal in Adansonia, Sér. 2, 7: 85, 1967; Fl. W. Trop. Afr., ed. 2, 3:

328, 1972; Hall in Bot. J. Linn. Soc. 66: 345, 1973; Haines & Lye, Sedges & rushes E. Afr.: 298, 1983; Berhaut, Fl. ill. Sénégal 9: 271, 1988; ***Cyperus lipofiliformis*** Goetgh.; *Lipocarpha gracilis* sensu auctt. Afric., non (Rich. ex Pers.) Nees 1834: Jaeger & Adam, Végét. vascul. Mts Loma 2: 224, 1981; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 634, 1985; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 224, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (and map by Schmidt & al. in Phytotaxa 304: 137, 2017).

Tufted annual herb; culms 5−50 cm tall, 0,5−1 mm ∅; leaves 5−20 cm long, 3 mm wide; inflorescence terminal, ± irregular, triangular, with 2−12 spikes, cylindrical-ovoidal to conical, 3−12 × 1,5−3 mm; spikelet prophyll and glume 0,8−1,3 mm long.

Roadsides and other sandy brackish places; humid rather sandy meadows; edges of swamps; in soil pockets on rocks, inselbergs (Porembski & Brown in Candollea 50: 358, 1995); quarry sites (Liberia); near sea-level to 800 m alt.

Possible confusion with *Ascolepis dipsacoides*.

L. sphacelata (Vahl) Kunth is an Asian plant (India, Sri Lanka, Burma, Thailand). The African plant differs from that species by the absence of the fruit beak. The correct name for the Asiatic plant is ***L. gracilis*** (Rich. ex Pers.) Nees 1834 (= ***Cyperus ceylanicus*** T. Koyama).

L. hemisphaerica (Roth) Goetgh., non *Cyperus hemisphaericus* Boeckeler 1859, nec *Mariscus hemisphaericus* (Boeckeler) C. B. Clarke 1894. – Sometimes cited as *Lipocarpha isolepis* in floras and flora lists. – J. & A. Raynal in Adansonia, Sér. 2, 7: 319, 1967; Fl. Eth. & Eritrea 6: 490, 1997; Clarke & Mannheimer, Cyper. Namibia: 91, 66 (map), 1999; Archer & Craven, Cyper. Namibia 23, 2004; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 113, 2012 (Liberia); Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Bot. Not. 124: 476, 1971; Haines & Lye, Sedges & rushes E. Afr.: 300, 1983; Berhaut, Fl. ill. Sénégal 9: 268, 1988 (as *Lipocarpha isolepis*); Goetghebeur & Van den Borre, o. c.: 38, 1989; Gordon-Gray, Cyper. Natal: 122, 1995 (nutlet); Fl. Trop. E. Afr., Cyper.: 349, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 58, 2017.

bas.: *Scirpus hemisphaericus* Roth

syn.: *Isolepis hemisphaerica* (Roth) A. Dietr.; *I. minima* Schrad.; *I. bellula* Steud.; *Hemicarpha isolepis* Nees; *H. schraderi* Kunth 1837, nom. superfl.; *H. schraderiana* Nees; *H. senegalensis* Steud.; *Lipocarpha micrantha* Peter, nom. nud.; *L. isolepis* (Nees) R. W. Haines; *L. rautanenii* Boeckeler ex Schinz; *L. monocephala* Turrill; *Scirpus isolepis* (Nees) Boeckeler; *S. minimus* Willd. ex Kunth, nom. nud. in syn.; *S. setaceus* L. var. *monandra* Willd. ex Kunth, nom. nud. in syn.; ***Cyperus isolepis*** (Nees) Bauters

Tufted annual herb; culms 2−25 cm tall, 0,2−0,5 mm ∅, rounded or angular; leaves usually 1 per stem, pale green, filiform, 1−9 cm long, 0,6 mm wide, half circular; sheath purple-stained, inflorescence pseudolateral with a *single* globose to ovoid *spikelet* 1−10 × 1−3 mm; prophyll and glume 0,5−0,7 mm long.

Shallow wet soil over rock; swamp edge; seasonally inundated grassland; stream sides; rice fields; occurs in small colonies; coastal dunes; salt tolerant; S. Africa: in moss mats on very shallow soil overlying rock outcrops; 0−2000 m alt.

Lipocarphetum hemisphaericae Vanden Berghen 1990 (= *Lipocarphetum isolepidis* Vanden Bergen 1979), an ephemeral vegetation dominating "species-poor dwarfish lawns in valleys of consolidated dune fields more distant from the coast", recorded for the Guinean zone in Senegal (Müller & Deil in Phytocoenologia 35: 361, 2005).

Namibia, Botswana, S. Africa; India, Thailand (rare).

L. kernii (Raymond) Goetgh.; Fl. W. Trop. Afr., ed. 2, 3/2: 310, 1972 (as *Scirpus kernii*); Fl. Trop. E. Afr., Cyper.: 352, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 52, 2012 (map by Schmidt & al. in Phytotaxa 304: 137, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 113, 2015. – Icon.: Adansonia, Sér. 2, 8: 96, 1968; Haines & Lye, Sedges & rushes E. Afr.: 302, 1983 (under *Rikliella*); Berhaut, Fl. ill. Sénégal 9: 312, 1988 (idem); Goetghebeur & Van den Borre, o. c.: 33, 82, 1989; Prasad & Singh, Sedges Karnataka (India): 297, 2002 (under *Rikliella*).

bas.: *Scirpus kernii* Raymond

syn.: *Isolepis kernii* (Raymond) Lye; *Rikliella kernii* (Raymond) J. Raynal (Adansonia, Sér. 2: 13: 155, 1973); ***Cyperus kernii*** (Raymond) Bauters; *Scirpus squarrosus* auctt., non L.: Andrews, Flow. pl. Sudan 3: 366, 1956; Clarke in Fl. Trop. Afr. 8: 458, 1902, p.p. quoad specim. Schweinfurth 3003, 2572; et auctt. Afric.

Tufted annual herb; culms 2−40 cm tall, 0,5−1,5 mm ∅; leaves to 16 cm long, 2 mm wide; inflorescence terminal with 1−8 ovoid spikes 2−8 × 1,5−5 mm; *prophyll and glume absent*.

Swamp or regenerating woodland; wet, muddy and swampy areas; sandy soils temporarily choked; pool sides; dripping wet cliff; rocky outcrops; spongy savanna; ? 700 – ? 1600 m alt. – Easily overlooked due to its small size.

India.

Recent studies place this species in *Rikliella*: ***R. kernii*** (Raymond) J. Raynal.

Goetghebeur & Van den Borre (o. c.: 43−44) remark on a specimen from S Nigeria, Oyo Distr. (Hall 832): "several plants have their spike rachis crest-like disformed … probably best considered as a kind of fasciation."

L. leucaspis J. Raynal; Fl. Trop. E. Afr., Cyper.: 353, 2010. – Icon.: Bull. Mus. Natl. Hist. Nat., Sér. 2, 41: 977, 1969; Haines & Lye, Sedges & rushes E. Afr.: 299, 1983; Goetghebeur & Van den Borre, o. c.: 38, 1989.

syn.: ***Cyperus leucaspis*** (J. Raynal) Bauters; *Lipocarpha barteri* sensu auct., non C. B. Clarke: Peter, Flora von Deutsch Ostafrika in Repert. Spec. Nov. Regni Veg., Beih. 40/1: 384, 1937.

Loosely tufted annual herb; culms ± terete, 5−40 cm long, 0,5−1 mm ∅; leaves 2−12 cm long, 1−3 mm wide; inflorescence terminal with 1−4 ovoid spikes 2−7 × 2−5 mm; prophyll and glume 1−1,3 mm long.

Muddy swamps; 975 m alt.

Difficult to distinguish from well-developed specimens of *L. nana*; *L. leucaspis* may be a polyploid out of *L. nana*.

L. micrantha (Vahl) G. C. Tucker, non *Cyperus micranthus* Schult., nec *Lipocarpha micrantha* Peter, nom. nud. (= *L. hemisphaerica*); Gordon-Gray, Cyper. Natal: 122−123, 1995; Clarke & Mannheimer, Cyper. Namibia: 91, 66 (map), 1999; Flora Mesoamericana 6: 446−447, 1994; Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 280, 2012. – Icon.: Berhaut, Fl. ill. Sénégal 9: 269, 1988; Goetghebeur & Van den Borre, o. c.: 46, 1989.

bas.: *Scirpus micranthus* Vahl

syn.: *Isolepis micrantha* (Vahl) Roem. & Schult.; *Hemicarpha micrantha* (Vahl) Pax 1888; *H. micrantha* (Vahl) Britton 1888; *H. subsquarrosa* (Muhl.) Nees; *Isolepis subsquarrosa* (Muhl.) Schrad.; ***Cyperus subsquarrosus*** (Muhl.) Bauters; *Scirpus subsquarrosus* Muhl.; *Isolepis squarrosa* auctt., non (L.) Kunth (cf. Goetghebeur & Van den Borre, o. c.: 50); further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; Phytotaxa 166: 23−24, 2014.

Tufted annual herb; culms 2−20 cm tall, 0,3−0,5 mm ∅; leaves to 10 cm long, 0,5 mm wide; inflorescence pseudolateral, with 1−3 spikes 1−5 × 1−2 mm, ovoidal to spherical; spikelet *prophyll* reduced, *often deeply bifid*, or virtually absent; *glume absent*.

Bare, humid sands; sandy-clayey places on margins of ponds.

Namibia, S. Africa; Madagascar; wide distribution in the Americas, from Canada S-wards to Uruguay, West Indies.

May be confused with *L. hemisphaerica* (with only a solitary spike developed). In *L. micrantha* the prophyll may be lacking.

L. monostachya R. Gross & Mattf., non *Cyperus monostachyos* Link 1828, nec L. 1771; non *Cyperus monostachys* Boeckeler 1870; Fl. Trop. E. Afr., Cyper.: 348, 351, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 300, 1983; Goetghebeur & Van den Borre, o. c.: 46, 1989.

syn.: ***Cyperus lipomonostachyus*** Goetgh.

Tufted annual herb with dark red roots; culms 3−18 cm long, 0,2−0,3 mm ∅; leaves to 5 cm long × 0,5 mm wide, ± terete; sheaths dark red; inflorescence pseudolateral with 1 spike 1,5−5,5 × 1−3 mm, ovoidal to conical; spikelet prophyll and glume 0,3−0,5 mm long.

Stream plain; seepage areas or damp to boggy ground; usually on sand in the bushland/woodland zone; 70−1400 m alt.

Confused with *L. nana*.

L. nana (A. Rich.) Cherm. 1924, non *Cyperus nanus* Willd. 1797; Renier, Fl. Kwango 1: 68, 1948 (as *L. pulcherrima*); Clarke & Mannheimer, Cyper. Namibia: 91, 66 (map), 1999; Archer & Craven, Cyper. Namibia 23, 2004; Harvey & al., Pl. Bali Ngemba…: 136, 2004; Lisowski, Fl. Rép. Guinée 1: 405, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Goetghebeur & Van den Borre, o. c.: 46, 1989; Gordon-Gray, Cyper. Natal: 121 (nutlet) 124, 1995; Fl. Eth. & Eritrea 6: 392, 490, 1997; Fl. Trop. E. Afr., Cyper.: 350, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 58, 2017.

bas.: *Fuirena nana* A. Rich.

syn.: *Lipocarpha pulcherrima* Ridl., incl. fa. *luxurians* Merxm.; *L. atropurpurea* Boeckeler; *L. tenera* Boeckeler; *L. minima* Cherm.; *L. nana* (A. Rich.) J. Raynal 1967, comb. superfl.; *Hypaelyptum pulcherrimum* (Ridl.) K. Schum.; *Cyperus unistamen* T. Koyama; ***C. persquarrosus*** T. Koyama

Tufted annual herb; roots red; culms 2−40 cm tall, 0,3−0,8 mm ∅; leaves 2−8 cm long, 1,2 mm wide; inflorescence terminal (very rarely pseudo-lateral), with 1−9 spikes 2−8 × 1,5−4 mm, ovoidal to conical; spikelet prophyll and glume *present*, 0,3−0,8 mm long.

Rocky outcrops with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* sp., *Aloe* sp. and many annuals; seepage areas on rock; seasonally wet grassland; moist depressions in woodland and bushland; moist depressions on roadsides and overgrazed ground; sometimes in standing water; plentiful in sandy-clayey fields after a crop of *Sorghum*; growing with many other Scirpoideae and species of *Eriocaulon* forming dense cushions; swampy meadows growing with *Ascolepis*; sunny marshes; 250−2400 m alt.

Namibia, S. Africa, Lesotho, Swaziland; Madagascar.

Rare or perhaps overlooked. Near *L. leucaspis*.

L. perspicua S. S. Hooper – Icon.: Kew Bull. 41: 425, 1986; Goetghebeur & Van den Borre, o. c.: 59, 1989.

syn.: ***Cyperus perspicuus*** (S. S. Hooper) Bauters

Tufted annual herb; culms 5−15 cm long, 0,3−0,4 mm ∅; leaves to 10 cm long, 0,5 mm wide; inflorescence terminal or slightly pseudo-lateral, with 1 *erect* spike 4−6 × 3−4 mm, ovoidal to ellipsoid; spikelet prophyll and glume 2,5 mm long; stamen 1 (not 3 !).

Moist, humus-filled cracks of exposed laterite with *Brachyachne pilosa*.

Only known from the type collected in 1938.

Related to *L. nana*.

L. prieuriana Steud., excl. var. *crassicuspis* J. Raynal (= *L. crassicuspis*); Akoègninou & al., Fl. analyt. Bénin: 108, 2006; Lisowski, Fl. Rép. Guinée 1: 405, 2009; Fl. Trop. E. Afr., Cyper.: 353, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012 (map by Schmidt & al. in Phytotaxa 304: 137, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 298, 1983; Berhaut, Fl. ill. Sénégal 9: 270, 1988; Goetghebeur & Van den Borre, o. c.: 59, 78, 1989.

syn.: *L. schweinfurthiana* Boeckeler; ***Cyperus prieurianus*** (Steud.) T. Koyama

Tufted annual rarely perennial herb with an erect stolon c. 1 mm ∅; culms 5−60 cm tall, 0,5−1 mm ∅; leaves to 25 cm long, 2 mm wide; inflorescence terminal, a congested head of 1−5 reddish-brown spikes 3−10 × 2−4 mm, ovoidal; spikelet prophyll and glume 1−1,2 mm long, red brown spotted.

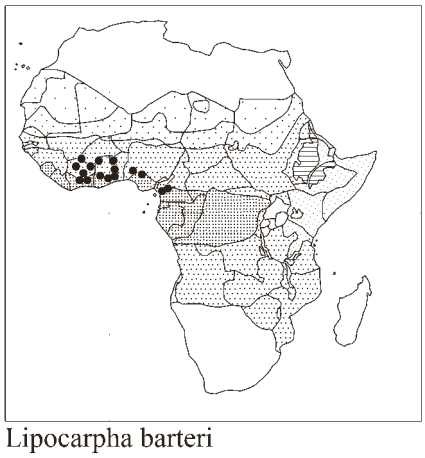
Temporarily wet sands, often near salty hollows in coastal dunes; rice-fields; damp places in savanna; hollows in sandy-clayey places; near sea-level to ? 1250 m alt.

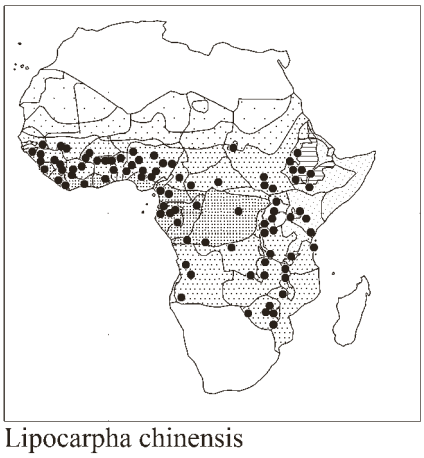
"It is possible that Andrews' record from Equatoria is incorrect, although this species is likely to occur in South Sudan" (Darbyshire & al., l.c.).

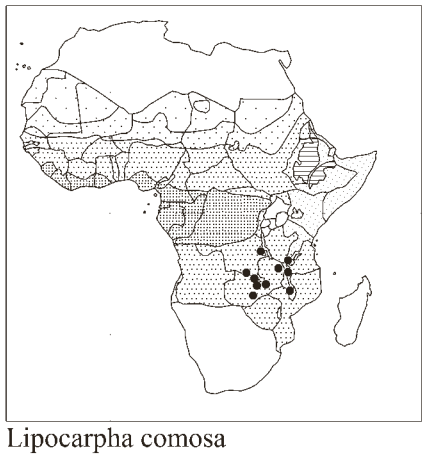
L. rehmannii (Ridl.) Goetgh., non *Cyperus rehmannii* Boiss. nec *Cyp. rehmannianus* (C. B. Clarke) Boeckeler ex Kuntze; Clarke & Mannheimer, Cyper. Namibia: 94, 66 (map), 1999; Fl. Trop. E. Afr., Cyper.: 352−353, 2010. – Icon.: Adansonia, Sér. 2, 8: 96, 1968; Haines & Lye, Sedges & rushes E. Afr.: 301, 1983; Goetghebeur & Van den Borre, o. c.: 63, 1989; Gordon-Gray, Cyper. Natal: 122, 1995 (nutlet); Fl. Eth. & Eritrea 6: 491, 1997; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 73, 2017 (under *Rikliella*).

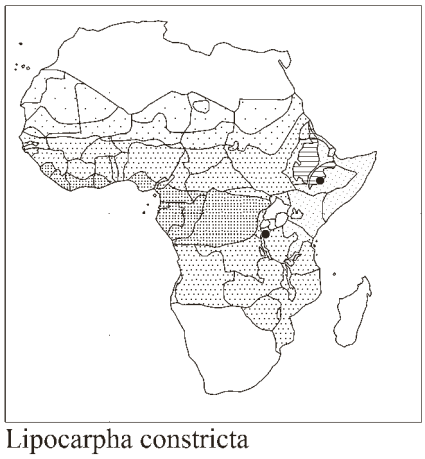
bas.: *Scirpus rehmannii* Ridl.; J. Raynal in Adansonia, Sér. 2, 8: 97, 1968.

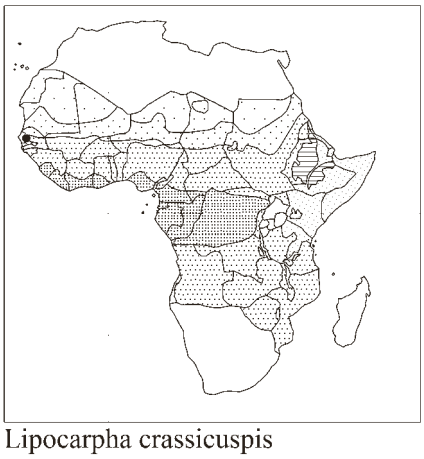
syn.: *Isolepis rehmannii* (Ridl.) Lye; *Rikliella rehmannii* (Ridl.) J. Raynal; *Scirpus hystricoides* B. Nord.; *S. hystrix* auctt., non Thunb.: Rendle, Cat. Welwitsch's Afric. pl. 2: 127, 1899; de Meneses in Garcia de Orta 4: 254, 1956; Podlech, Prodr. Fl. Südwestafr. 165: 49, 1967; etc.; *S. squarrosus* sensu auctt. non L.: Cufodontis, Enum. 1970−1971; C. B. Clarke, Fl. Trop. Afr. 8: 459, 1902, p.p. quoad specim. Whyte (See further Goetghebeur & Van den Borre, o. c.: 65); ***Cyperus hystricoides*** (B. Nord.) Bauters

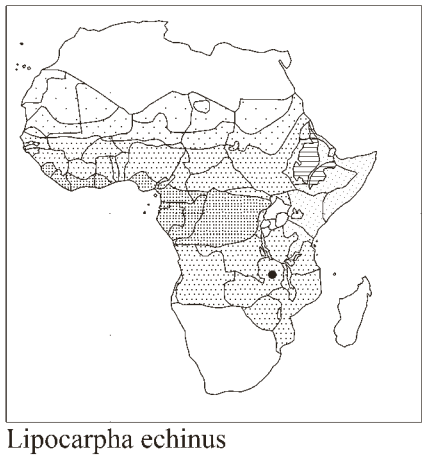

Lipocarpha barteri

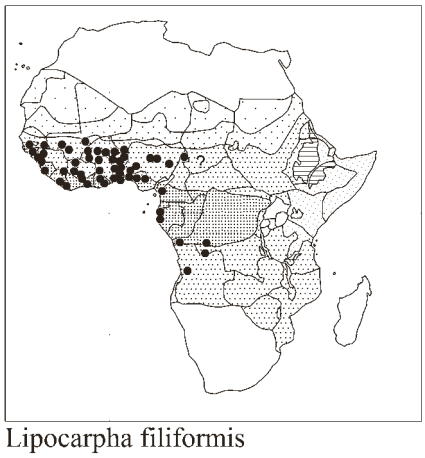

Lipocarpha chinensis

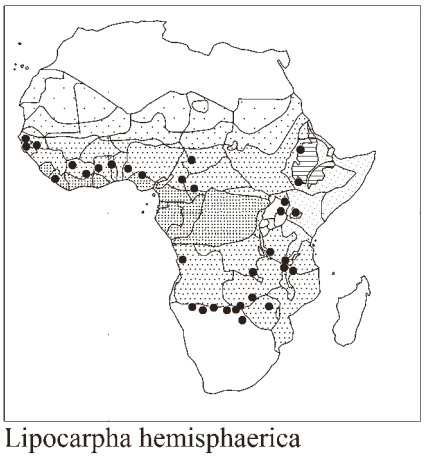

Lipocarpha comosa

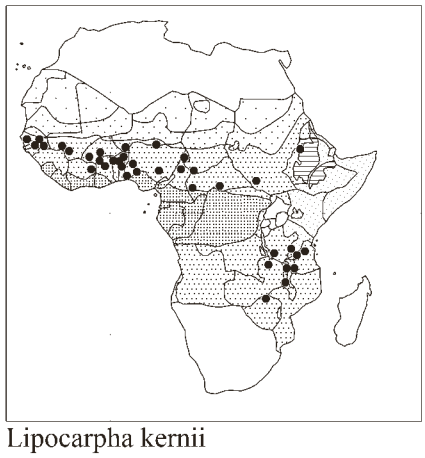

Lipocarpha constricta

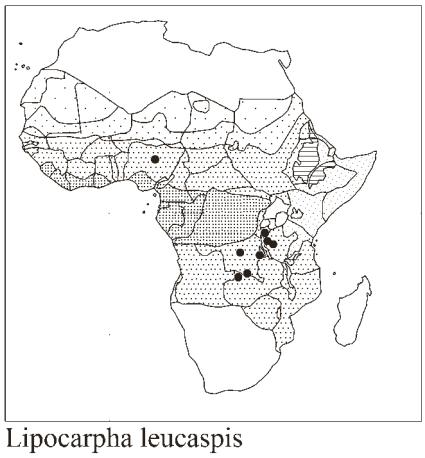

Lipocarpha crassicuspis

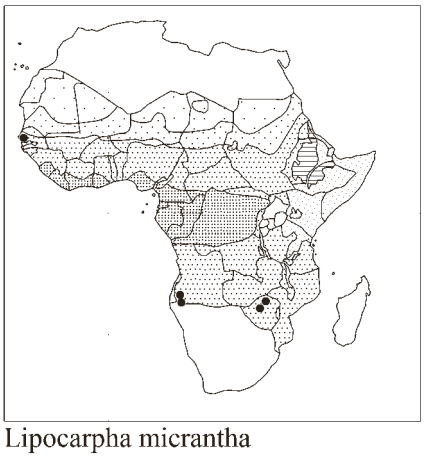

Lipocarpha echinus

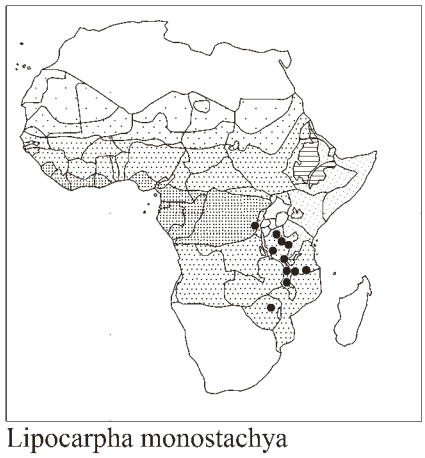

Lipocarpha filiformis


Lipocarpha hemisphaerica


Lipocarpha kernii


Lipocarpha leucaspis


Lipocarpha micrantha


Lipocarpha monostachya

LIPOCARPHA REHMANNII

Tufted annual herb with thin red roots; culms 2−28 cm tall, 0,5−1,5 mm ∅; leaves to 10−17 cm long, c. 1−1,5 mm wide; sheaths dark red to ± black at base; inflorescence terminal, a dense head of 3−12 ovoid spikes 3−10 × 3−5 mm, ± confluent, with long excurrent mucroes; spikelet prophyll and glume *absent*.

Seasonally moist grassland; seepage areas; damp clayey-sandy fields after corn harvest; in damp moss mats in shallow soil over rock outcrops (S. Afr.); 70−1750 m alt.

Namibia, S. Africa, Botswana, Lesotho; Madagascar.

The true *Scirpus hystrix* Thunb. [= **Isolepis hystrix** (Thunb.) Nees] is a plant from S. Africa (cf. Adansonia, Sér. 2, 8: 98, 1968).

Recent studies place this species in *Rikliella*: **R. rehmannii** (Ridl.) J. Raynal.

L. robinsonii J. Raynal, non *Cyperus robinsonii* Podlech; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Adansonia, Sér. 2, 7: 83, 1967; Haines & Lye, Sedges & rushes E. Afr.: 297, 1983; Goetghebeur & Van den Borre, o. c.: 63, 81, 1989.

syn.: ***Cyperus liporobinsonii*** Goetgh.

Rhizomatous perennial herb; culms *isolated* on a long-creeping, reddish, somewhat fleshy rhizome, covered by distant cataphylls c. 3 cm long; culms 50−90 cm tall, 1,5−3 mm ∅; leaves to 50 cm long, 3 mm wide, rather thick and *pungent*; inflorescence terminal, with 3−9 subequal spikes 3−7 × 2−4 mm, ovoidal; spikelet prophyll and glume 2,5−3 mm long.

Swamp constantly lightly flooded.

Habitus recalling a *Juncus*.

L. thermalis J. Raynal ex Goetgh. – Icon.: Goetghebeur & Van den Borre, o. c.: 67, 1989.

syn.: ***Cyperus lipothermalis*** Goetgh.

Tufted annual herb; culms 8−15 cm long, 0,3−0,5 mm ∅; leaves to 5 cm long, 0,5 mm wide; inflorescence pseudolateral, with 1 spike, 1−4 × 1−2 mm, ovoidal to spherical; spikelet prophyll and glume 0,9−1 mm long.

Hot springs on sandy ground, near the spring.

Only known from the type collected in 1949.

Resembling *L. hemisphaerica*, but *L. thermalis* has bracts of spikelets larger (c. 1 × 1 mm, not 0,5−1 × 0,4−0,7 mm), spikelet prophyll and glume longer (0,9−1 mm, not 0,5−0,7 mm), and 3 stamens (not 1) and style with 3 branches (not 2).

SYNONYMS:

Lipocarpha argentea (Kunth) R. Br. = **Lipocarpha chinensis**
argentea (Vahl) R. Br. = **L. chinensis**
atra Ridl. var. *atra* sensu Haines & Lye 1983 = **L. atra**
atra var. *barteri* (C. B. Clarke) J. Raynal = **L. barteri**
atra sensu auctt. (S. S. Hooper), non Ridl. = **L. abietina**
atropurpurea Boeckeler = **L. nana**
barteri sensu auct., non C. B. Clarke = **L. leucaspis**
bawangensis R. H. Miau = **L. chinensis**
debilis Ridl. = **L. chinensis**
gracilis (Rich. ex Pers.) Nees 1834 – See above under **L. filiformis**
gracilis sensu auctt. Afric. non (Rich. ex Pers.) Nees = **L. filiformis**
humboldtiana Nees – See above under **L. chinensis**
isolepis (Nees) R. W. Haines = **L. hemisphaerica**
laevigata (Roxb.) Nees = **L. chinensis**
micrantha Peter, nom. nud., non (Vahl) G. C. Tucker = **L. hemisphaerica**
minima Cherm. = **L. nana**

LIPOCARPHA

monocephala Turrill = **L. hemisphaerica**
multibracteata C. B. Clarke = **Ascolepis pusilla**
nana (A. Rich.) J. Raynal, comb. superfl. = **Lipocarpha nana**
paradoxa Cherm. = **Alinula paradoxa**
prieuriana Steud. var. *acuta* Cherm., nom. = **Lipocarpha abietina**
prieuriana var. *crassipes* J. Raynal = **L. crassipes**
pulcherrima Ridl., incl. fa. l*uxurians* Merxm. = **L. nana**
purpureolutea Ridl. = **L. albiceps**
rautanenii Boeckeler ex Schinz = **L. hemisphaerica**
schweinfurthii Boeckeler = **L. prieuriana**
senegalensis (Lam.) T. Durand & H. Durand = **L. chinensis**
sphacelata (Vahl) Kunth var. *barteri* C. B. Clarke, nom. nud. = **L. filiformis**
sphacelata sensu auctt. Afric., non (Vahl) Kunth = **L. filiformis**
tenera Boeckeler = **L. nana**
triceps (Roxb.) Nees var. *latinux* Kük. = **L. abietina**

MACHAERINA / *1*

syn.: *Baumea* Gaudich.

Genus of 51 species in the Old and New Worlds tropics and subtropics, from E. Africa (1 species), Madagascar, Mascarene Isl., SE Asia, Malesia, SE Australia, New Zealand, New Caledonia, Pacific Isl., tropical S. America and West Indies (Viljoen & al. in Amer. J. Bot. 100: 2496, 2013).

Machaerina flexuosa (Boeckeler) J. Kern subsp. **polyanthemum** (Kük.) Lye – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 325, 1983; Fl. Trop. E. Afr., Cyper.: 370, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 59, 2017.

bas.: *Cladium flexuosum* (Boeckeler) C. B. Clarke var. *polyanthemum* Kük.

syn.: *Scirpus iridifolius* Poir.; *Lepidosperma iridifolium* Willd. ex Link; *Mariscus iridifolius* (Willd. ex Link) Kuntze

Perennial, stout herb to 1,5 m tall, with rhizomes; culms tussocky, 0,9−1,2 m long, 5−6 mm ∅; leaves with long blades 0,6−1,2 cm wide, apex acuminate; inflorescence a panicle 25−50 cm long of 5−8 fascicles, each with 2−4 primary branches to 7 cm long; spikes at the end of primary and secondary branches, 6−10 mm ∅, consisting of 2−4 crowded (sub-)sessile spikelets 5−6 mm long with glumes mostly distichously arranged, 6−12-flowered.

Growing in solitary tufts by stream; 300−450 m alt.

Comoro Isl., Madagascar.

Subsp. **flexuosa** [syn.: *Baumea iridifolia* (Nees) Boeckeler] in Comoro Isl., Madagascar; – subsp. **laevinux** (J. Raynal) Lye [bas.: *Baumea iridifolia* subsp. *laevinux* J. Raynal] in Madagascar (under *Baumea* by Raynal in Adansonia, Sér. 2, 12: 107, 108, 111, 1972).

(MALACOCHAETE)

Malacochaete pterolepis Nees = **Schoenoplectus subulatus**

MAPANIA / *21*

Genus of 71 species (Mohd & al. in Reinwardtia 15: 129, 2016) (or ? 84) "widely distributed throughout the tropics, occurring mainly in primary rainforest" (Mesterházy & al. in Kew Bull. 72: § 36: 1, 2017). "Gabon is the African country with the highest diversity in species of the genus Mapania" (Lye in Nord. J. Bot. 32: 137−138, 2014).

Plants are perennial with rhizomes or stolons and thick roots. Spikelets have few to numerous densely spirally arranged persistent glumes.

BROWNING, J. & A. MESTERHÁZY (2016). *Hypolytrum and Mapania (Cyperaceae) of West Africa. An illustrated guide to species* (Version 2).

SIMPSON, D. A. (1992). *A revision of the genus Mapania (Cyperaceae)*. The Board of Trustees of the Royal Botanic Gardens, Kew. 189 pp.

Mapania africana Boeckeler, excl. subsp. *occidentalis* J. Raynal (= *M. mangenotiana*); Onana & Cheek, Red Data Book flow. pl. Cameroon: 367−368, 2011; Onana, Fl. Cameroun 40: 223, 2013. – Icon.: Simpson (1992): 126, 178 (subsp. *africana*); Fl. Gabon 44, Cyper.: 155 (as var. *africana*), 159 (var. *filipes*), 2012.

Robust herb; rhizome 1 cm ∅, scale-leaves ovate to lanceolate, to 4,5 × 0,3 cm; culms several, lateral, erect *or* arcuate-deflexed, c. 11−42 cm long, 0,4−2 mm ∅, terete to obscurely trigonous, glabrous, green; leaves basal, to 1 m or more long; blade linear, 21−73 × 2,3−4 cm, apex abruptly narrowed, acuminate, base abruptly narrowed into pseudopetiole 5−19 cm long; inflorescence terminal, 0,9−1,5 cm wide, mid-brown, with 1−12 spikes; these ovate to narrowly oblong, 0,4−2 × 0,3−0,5 cm, obtuse, distinct.

Humid forest, sometimes with *Calpocalyx heitzii*, *Sacoglottis gabonensis*, *Lophira alata*; secondary forest; also along rivers and brooks; 150−500 m alt.

Comprises 2 subspp.: – subsp. **africana** (syn.: *M. africana* var. *africana* J. Raynal; *M. dolichostachya* K. Schum.) with ± erect wider culms (0,2−2 mm ∅) and inflorescence with 3 or more spikes; – subsp. **filipes** (J. Raynal) D. A. Simpson (bas.: *M. africana* var. *filipes* J. Raynal) with thinner arcuate-deflexed culms (0,4−0,7 mm ∅) and inflorescence with 1−2 spikes. – Because an intermediate plant was found in Gabon, Lye & Thery (l. c.) treated the infraspecific taxa at variety level (as did already J. Raynal).

M. pallescens is slightly similar.

(***M. afro-orientalis Lye***) – See above under **Hypolytrum testui** Cherm.

M. amplivaginata K. Schum.; Jacques-Félix in Bull. Mus. Natl. Hist. Nat., Sér. 2, 19: 88, 89 (fig.), 417, 1947 (as *Langevinia monosperma*); Compt. Rend. Hebd. Séances Acad. Sci. 224: 211, 1947; Browning & Mesterházy (2016): 4. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 6, 1974; Simpson (1992): 141, 176; Fl. Gabon 44, Cyper.: 161−162, 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 389, 2014.

syn.: *M. oblonga* C. B. Clarke, nom. nud., and var. *elliptica* C. B. Clarke, nom. nud.; *M. mildbraedii* Graebn., nom. nud.; *M. monosperma* (Jacq.-Fél.) Maguire & T. Koyama; *Langevinia monosperma* Jacq.-Fél. (in *Rapateaceae*); *Apartea le-testui* Pellegr. in Bull. Soc. Bot. France 77: 473, 1930 (in *Rapateaceae*), corrig. ibid. 78: 180, 1931 (Cf. Lebrun & Stork, Tropical African Flowering Plants … 7: 135, 2012, Rapateaceae).

Rhizomatous to stoloniferous herb; rhizome 0,3−0,7 cm ∅; culm solitary, erect, central, 10−30 cm long, 1−4 mm ∅, trigonous, glabrous, green; leaves basal, to 70 cm or more long; blade lanceolate, 15−40 × 2,4−8,5 cm, apex abruptly narrowed, acute or shortly acuminate, base narrowed into pseudo-petiole 4,2−24 cm long 2,5−9,3 cm wide; inflorescence terminal, globose, 1,5−2,5 cm wide, composed of numerous indistinct spikes.

Deep shade and wet places in forest; sometimes by water; secondary forests; sometimes along rivers and watercourses; 40−1000 m alt.

Bioko/Fernando Poo.

M. baldwinii Nelmes; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 113, 2012. – Icon.: Lorougnon in Mém. ORSTOM 58: 70, 1972; Adam, Fl. descr. Mts Nimba 6: 2144, 1983; Simpson (1992): 176 (nutlet); Browning & Mesterházy (2016): 14.

syn.: *M. comoensis* A. Chev. ex Hutch. & Dalziel 1936, descr. angl. (sine lat.).

Perennial herb; rhizome to 2 cm ∅; culms several, erect, lateral, 11−24 cm long, 1,3−1,8 mm ∅, terete to obscurely trigonous, glabrous, green to dull red; leaves basal, to 75 cm long; blade ± oblong, 19−59 × 4−8 cm, apex abruptly narrowed, obtuse to rounded, cuspidate, base abruptly narrowed into pseudopetiole, *dark green*, light green below; pseudopetiole 7,5−14 × 0,4−1 cm; sheaths inflated; inflorescence globose, terminal, 1,8−3,3 cm wide, light brown, with to 20 spikes ovate to elliptic, 8−17 × 5 mm, acute, distinct when young, becoming less so when mature.

Rain-forest, along streams; damp places in forest; 60−533 m alt.

Pollination by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

(***M. camerunensis*** Lye) – See above under **Hypolytrum subcompositum** Lye & D. A. Simpson

(***M. chevalieri*** (Nelmes) Lye) – See above under **Hypolytrum chevalieri** Nelmes

M. coriandrum Nelmes; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 113, 2012. – Icon.: Lorougnon in Mém. ORSTOM 58: 75, 1972; Adam, Fl. descr. Mts Nimba 6: 2144, 1983; Simpson (1992): 175 (nutlet); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 390, 2014; Browning & Mesterházy (2016): 15.

Perennial herb; rhizome 0,5−1,5 cm ∅; culms 1−2, erect, central, 0,18−1,15 m tall, 2−6 mm ∅, trigonous to subtriquetrous, glabrous, greenish to reddish brown; leaves basal, to 1,3 m or more long; blade linear, 66−93 cm long, 2,5−5,5 cm wide, apex gradually narrowed, acuminate, and base gradually narrowed into sheath, coriaceous, mid-green, often tinged with purple when young; pseudo-petiole absent; inflorescence terminal, globose, 3−7 cm wide, mid- to dark reddish brown, composed of numerous, closely compact spikes; these linear, to 1,5 cm long, usually indistinct; spicoid bracts bright red in living material.

Marshy ground; edges of swamps in (high) forest; sandy thalweg of rivulet in forest with *Maschalocephalus*; termite mound in forest; sporadically distributed along mountain streams; 450−600 m alt.

Bioko/Fernando Poo.

Pollinated by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

(**M. deistelii** K. Schum., Notizbl. Königl. Bot. Gart. Berlin 3: 106, 1901).

"Doubtful species" in Simpson (1992): 167. "Described from a single specimen collected in Cameroon". Hutchinson & Dalziel,

Fl. W. Trop. Afr., ed. 1, 1936, cited several specimens, "three of which are now assigned to *M. coriandrum*, *M. ivorensis* and *M. rhynchocarpa*."

The type (B) was destroyed in World War II … "it is difficult to visualise the plant from the brief description given by Schumann".

M. ferruginea Ridl., incl. var. *subcomposita* C. B. Clarke, nom. nud.; Simpson (1992): 137−138; Cheek & al., Pl. Kupe…: 191−192, 2004; Onana & Cheek, Red Data Book flow. pl. Cameroon: 368, 2011; Onana, Fl. Cameroun 40: 223, 2013; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 124, 2014 (in key). – Icon.: Ridley in Bol. Soc. Brot. 5: pl. F/Fig. B facing p. 208, 1887.

syn.: *M. subcomposita* (C. B. Clarke) C. B. Clarke, nom. illeg.

Perennial herb with rhizome 3−5 mm ∅; culm solitary, erect, central 35−45 cm tall, 2−3 mm ∅, subtriquetrous, glabrous, green; leaves basal, to 75 cm long; blade linear, 40−60 × 2,6−2,9 cm, apex narrowed, acute, base gradually narrowed into sheath, green; pseudopetiole absent; sheath 8−17 × 2−2,2 cm, apex very gradually narrowed, reddish brown; inflorescence terminal, globose 2−3,5 cm wide, mid-reddish brown, consisting of numerous (25) spikes (indistinct).

Forest undergrowth; 1100−2000 m alt.

S. Tomé, Príncipe.

First record on continental Africa, Cameroon, in July 1996, Mt Kupe (Onana & Cheek 2011: 368), subsequently in Bakassi Mts (1998).

"Care should be taken to separate this taxon from the similar *M. soyauxii* … at lower altitudes in Cameroon" (Onana & Cheek, l. c.).

(***M. heteromorpha*** (Nelmes) Lye) – See above under **Hypolytrum heteromorphum** Nelmes

(***M. heterophylla*** (Boeckeler) Lye) – See above under **Hypolytrum heterophyllum** Boeckeler

M. ivorensis (J. Raynal) J. Raynal; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 114, 2012. – Icon.: Lorougnon in Mém. ORSTOM 58: 76, 1972; Simpson (1992): 176 (nutlet); Browning & Mesterházy (2016): 16.

bas.: *M. macrantha* (Boeckeler) H. Pfeiff. subsp. *ivorensis* J. Raynal

syn.: *M. superba* sensu Lorougnon, Contribution à l'étude des Hypolytrées de Côte d'Ivoire: 43, 1963, non C. B. Clarke, nec Hutch.

Perennial herb with rhizome 4−8 cm ∅; culm solitary, erect, central, 36−64 cm tall, 2−5 mm ∅, obscurely triquetrous, glabrous, green; leaves basal, to 1,25 m or more long; blade linear, 43−90 × 3−5,6 cm, apex (abruptly) narrowed, acute, base gradually narrowed into sheath, coriaceous, mid-green; sheath lanceolate, 15−22 × 1,2−2,8 cm, apex gradually narrowed, coriaceous, brownish or greenish brown; inflorescence terminal, globose, 2−5,5 cm wide, brown, composed of numerous spikes (to 1 cm long, indistinct).

Forest; primary forest along river; 60−126 m alt.

Pollinated by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

Formerly confused with *M. jongkindii*.

M. jongkindii A. Mesterházy in Kew Bull. 72/3: § 36: 3, 2017. – Icon.: ibid.: 5; Browning & Mesterházy (2016): 17.

Perennial herb with rhizome 12−15 mm ∅; culms few, erect, lateral, 22−28 cm long, 2−5 mm ∅, terete, glabrous, green to dark brown; leaves basal; blade linear, 62−74 × 3−4 cm, apex gradually narrowed, acuminate, base gradually narrowed into pseudopetiole, coriaceous, dark green; sheath linear, 4−6 × 2,3−3 cm, apex gradually narrowed into pseudopetiole, dark brown to reddish; inflorescence subglobose, terminal, 2,5−3,5 cm wide, with 40−50 or more spikes; these elliptic, to 15 × 3 mm, acute, distinct.

Dense primary rain-forest with *Lophira alata, Milicia regia, Morus mesozygia, Tarrietia utilis, Terminalia ivorensis*; 538−579 m alt.

Endemic to Nimba Mts (Liberia). General appearance resembling that of *M. linderi*, but *M. jongkindii* has wider leaves (3−4 cm vs. 2−3 cm) and wider leaf sheath (23−30 mm vs. 10−24 mm) and number of spikes greater.

(***M. lancifolia*** (C. B. Clarke) Lye) – See above under **Hypolytrum lancifolium** C. B. Clarke

M. liberiensis D. A. Simpson; Mesterházy in Lidia 7/5: 114, 2012. – Icon.: Simpson (1992): 135, 176; Browning & Mesterházy (2016): 18; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 60, 2017.

Perennial herb with rhizome 1 cm ∅; culm solitary, erect, central, to 1,08 m tall, 4−5 mm ∅, triquetrous, glabrous, green; leaves basal, to 1,5 m or more long; blade linear, 0,9−1,29 m × 4,7−5,7 cm, apex abruptly narrowed, acute to subobtuse, base gradually narrowed into sheath, coriaceous, green; pseudopetiole absent; sheath linear-lanceolate, 20−23 × 3,2−4,2 cm, apex gradually narrowed, greenish to reddish brown; inflorescence terminal, globose, 4,2−5,5 cm wide, dark brown, composed of numerous spikes, these elliptic, linear-elliptic or elliptic-lanceolate, 1,2−1,8 cm × 4−5 mm, (sub)obtuse, distinct.

Primary forest along river; 124 m alt.

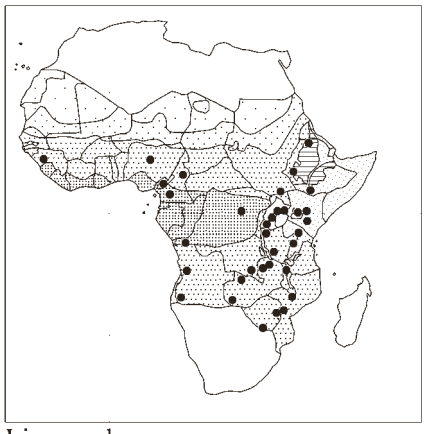
Formerly named as *M. ivorensis* (confusion). Probably more closely related to *M. macrantha*, *M. raynaliana*.

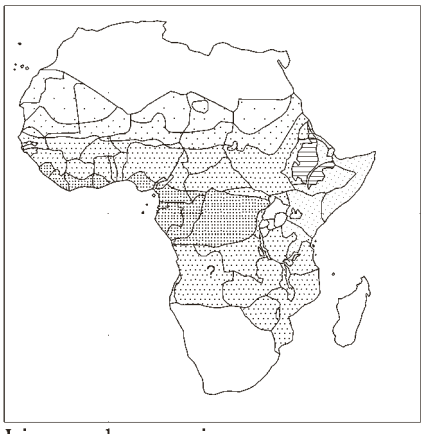
M. linderi Hutch. ex Nelmes, Kew Bull. 6: 422, 1951 (!); Jaeger & Adam, Végét. vascul. Mts Loma 2: 224, 1981; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 635, 1985; Simpson & Inglis in Kew Bull. 56: 328, 2001; Lisowski, Fl. Rép. Guinée 1: 405, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 114, 2012; Marshall & Hawthorne, Checklist north. Nimba County, Liberia: 431, 2013. – Icon.: Lorougnon in Mém. ORSTOM 58: 71, 1972; Adam, Fl. descr. Mts Nimba 6: 2144, 1983; Simpson (1992): 177 (nutlet); Browning & Mesterházy (2016): 19; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 60, 2017.

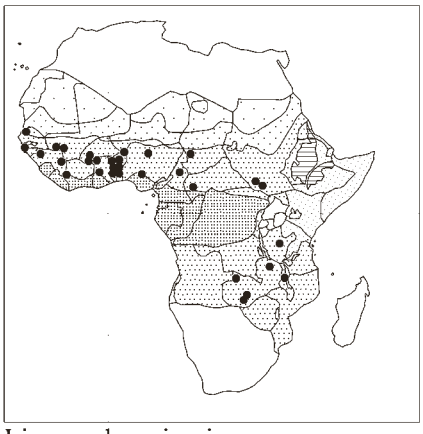
Perennial herb with rhizome 0,5−2 cm ∅; culms several, erect, lateral, arising from axils of the lower leaves, 8−21 cm long, 0,9−1,5 mm ∅, terete, rarely obscurely trigonous, glabrous, green to reddish-brown; leaves basal, to 1,44 m long; blade linear, 31−70 × 1,7−3,5 cm, apex gradually to abruptly narrowed, acuminate to broadly obtuse, base gradually to abruptly narrowed into pseudopetiole, coriaceous, dark green; pseudopetiole 4−28 × 1−2 cm; sheath ± linear 4,5−9 × 1−2,4 cm, apex gradually to abruptly narrowed into pseudopetiole, coriaceous, dark green to reddish; inflorescence subglobose, terminal 1,5−2,4 cm wide, with to 30 or more spikes; these linear to elliptic, to 1 × 0,5 cm, ± acute, usually indistinct.

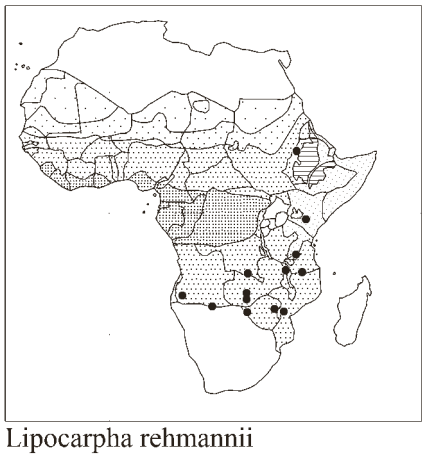
Riverine forest; forest on white sand or quartzite or granite; drained high forest; 80−600 m alt.

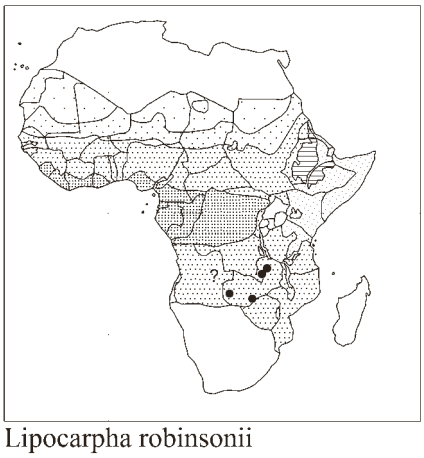
In general appearance similar to *M. jongkindii* (See above).

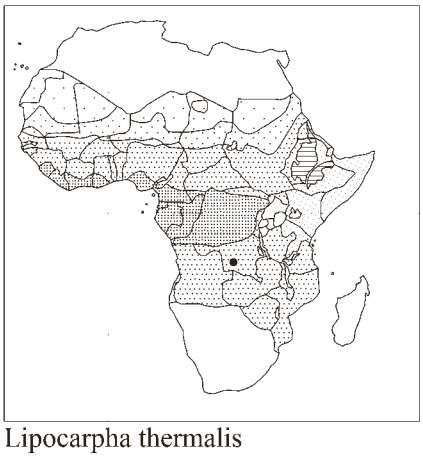

Lipocarpha nana

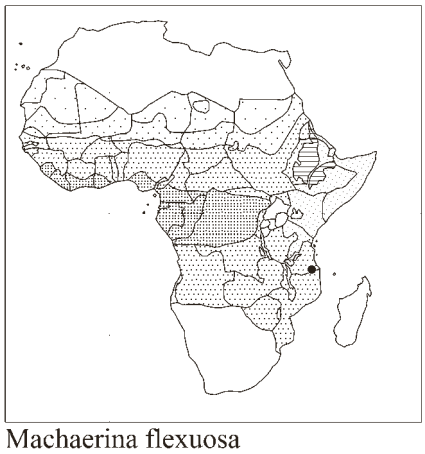

Lipocarpha perspicua

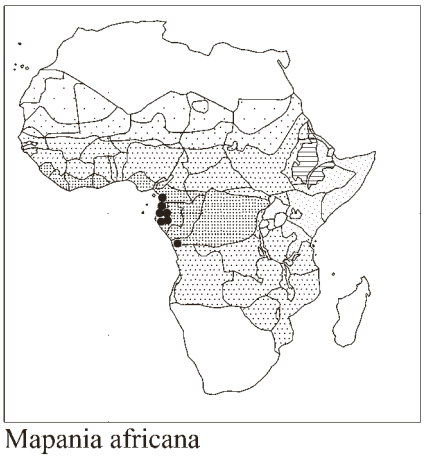

Lipocarpha prieuriana

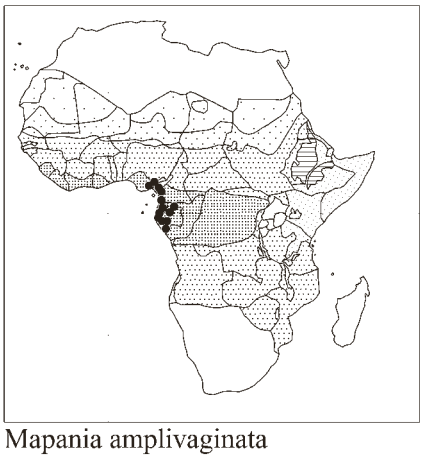

Lipocarpha rehmannii

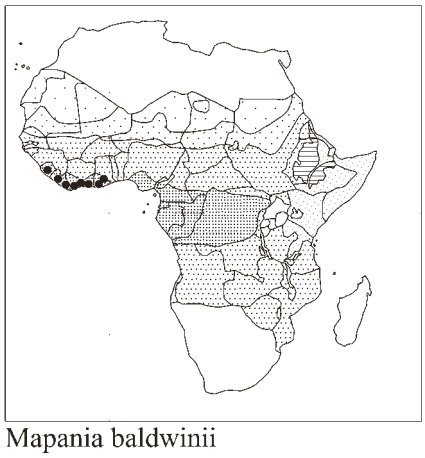

Lipocarpha robinsonii

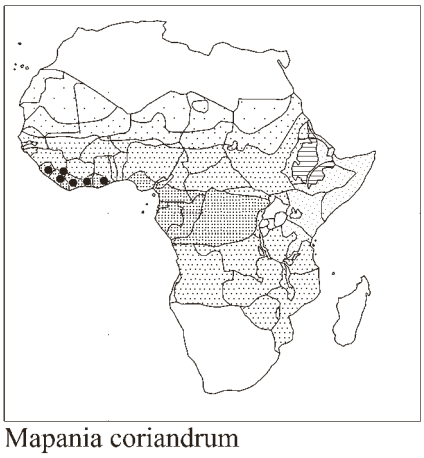

Lipocarpha thermalis

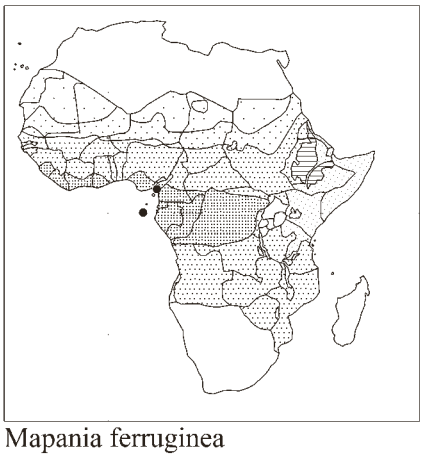

Machaerina flexuosa
subsp. polyanthemum


Mapania africana


Mapania amplivaginata


Mapania baldwinii


Mapania coriandrum


Mapania ferruginea

M. macrantha (Boeckeler) H. Pfeiff., *excl*. subsp. *ivorensis* J. Raynal (= *M. ivorensis*) and var. *minor* Nelmes (= *M. minor*); Simpson (1992): 130−131; Onana, Fl. Cameroun 40: 223, 2013. – Icon.: Fl. Gabon 44, Cyper.: 165, 2012 (nutlet); Velayos & al., Fl. Guinea Ecuat. 11: 391, 2014.

bas.: *Hypolytrum macranthum* Boeckeler

syn.: *Mapania superba* C. B. Clarke, nom. illeg. superfl.

Perennial herb with rhizome 4−6 mm ∅; culm solitary, erect, central, 42−96 cm tall, 4−6 mm ∅, subtriquetrous, glabrous, green; leaves basal, to 1,7 m or more long; blade ± linear, 1,08−1,49 m × 4,9−6,3 cm, apex gradually narrowed, acute, rarely acuminate, base gradually narrowed into sheath, coriaceous, green; pseudopetiole absent; sheath lanceolate, 20−21 × 3,6−4 cm, apex very gradually narrowed, often indistinct from blade, greenish to reddish green; inflorescence terminal, globose 3,8−5,4 cm wide, mid- to dark brown, with numerous spikes; these oblanceolate to elliptic-oblanceolate, 1,5−1,7 m long, obtuse to rounded, often indistinct.

Primary and secondary forests, often along rivers and brooks; 0−1400 m alt.

Bioko/Fernando Poo. Not in Nigeria (= *M. rhynchocarpa*) nor in Ivory Coast.

Rarely collected. Closely related to *M. purpuriceps* and distinguished from the latter by "more dense cluster of smaller, often indistinct spikes".

M. mangenotiana Lorougnon; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Mesterházy in Lidia 7/5: 114, 2012. – Icon.: Lorougnon in Bull. Jard. Bot. Etat Brux. 34: 299, 1964; idem in Mém. ORSTOM 58: 73, 1972; Simpson (1992): 175 (nutlet); Browning & Mesterházy (2016): 20.

syn.: *M. africana* Boeckeler subsp. *occidentalis* J. Raynal; *M. africana* sensu auctt., non Boeckeler: Chevalier, Explor. Bot. Afr. Occid.: 707, 1920; Lorougnon, Contribution à l'étude des Hypolytrées de Côte d'Ivoire (thèse): 41, 1963; *M. dolichostachya* auct., non K. Schum.: Lorougnon (1963): 41.

Perennial herb with rhizome 0,5−1,5 cm ∅; culms several, erect or somewhat flexuose, lateral, 6−23 cm long, 0,7−1,2 mm ∅, terete to subtrigonous, glabrous, green or light brown; leaves basal, to 1 m or more long, strongly 3-ranked; blade linear, 47−79 × *1−2,2 cm*, apex gradually narrowed, acute to acuminate, base gradually narrowed into sheath, coriaceous, mid-green; pseudopetiole *absent*; sheath linear, 5−15 × 0,6−1,2 cm, apex very gradually narrowed, green to light brown; inflorescence half-globose, terminal, 1−3 cm wide, mid-brown, with to 14 spikes; these elliptic, rarely linear, 0,8−2 cm × 3−4 mm, acute to obtuse, distinct.

Lowland primary forest, rain-forest; c. 138 m alt.

Pollinated by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

M. pallescens is very similar.

M. mannii C. B. Clarke; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010 (as *M. bieleri*); Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011 (subsp. *bieleri*). – Icon.: Simpson (1992): 176 (nutlet); Fl. Gabon 44, Cyper.: 167, 2012 (nutlet); Velayos & al., Fl. Guinea Ecuat. 11: 392, 2014 (subsp. *mannii*).

Perennial herb with rhizome 0,2−0,5 cm ∅; culm solitary, erect, central, 16,5−49 cm long, 1,5−2,8 mm ∅, subtriquetrous, glabrous, green or reddish; leaves basal, to 60 cm or more long; blade ± elliptic, 10,5−37 × 2,2−6 cm, apex narrowed, acute to broadly obtuse, base abruptly narrowed into pseudopetiole, green; pseudopetiole 5−17 cm long, 2,5−6 mm wide; sheath lanceolate, 3−9,5 × 1,6−3 cm, apex (abruptly) narrowed, dark reddish purple; inflorescence pseudolateral, globose, 2,1−4,5cm ∅, light- to mid-brown, with up to 30 spikes; these linear-elliptic, 0,8−2,8 cm × 2−4 mm, acute, distinct.

Primary and secondary forests, sometimes along rivers and watercourses; 40−700 m alt.

Size and form of leaves variable.

Bioko/Fernando Poo.

Comprises 2 subspp.: – subsp. **mannii**, with spikes 1−2,8 cm long, and keel of lower 2 floral bracts narrowly winged, denticulate-hispid, with a wide geographical distribution; – subsp. **bieleri** (De Wild.) J. Raynal ex D. A. Simpson (bas.: *M. bieleri* De Wild.), with smaller spikes (0,8−1,2 cm long), and keel of lower 2 floral bracts wingless, hispid, in Congo-Gabon-Zaire. – The 2 subspecies are doubtfully distinct.

Ornamental (Simpson & Inglis in Kew Bull. 56: 328, 2001).

Near *M. amplivaginata*.

M. minor (Nelmes) J. Raynal; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011. – Icon.: Lorougnon in Mém. ORSTOM 58: 79, 1972; Simpson (1992): 175 (nutlet); Browning & Mesterházy (2016): 21.

bas.: *M. macrantha* (Boeckeler) H. Pfeiff. var. *minor* Nelmes

Perennial herb with vertical rhizome 7−14 mm ∅; culm solitary, erect, central, 22−53 cm long, 2−3,5 mm ∅, trigonous, glabrous, green to mid-brown; leaves basal, to 1,4 m or more long; blade linear, 0,66−1,28 m × 2,1−3,6 cm, apex gradually narrowed, acuminate, base gradually narrowed into sheath, green; sheath lanceolate, 8−13 × 2−2,2 cm, apex very gradually narrowed, sometimes indistinct from blade, light brown to green; inflorescence terminal, globose, 2,5−4 cm wide, dull brown, composed of numerous spikes; these elliptic to elliptic ovate, 0,5−1 × 0,3−0,4 cm, acute, distinct.

Forest.

Type from Liberia not Ivory Coast (Baldwin 6074, Webo distr., halfway up Pah Mountain), but very near the frontier to Ivory Coast.

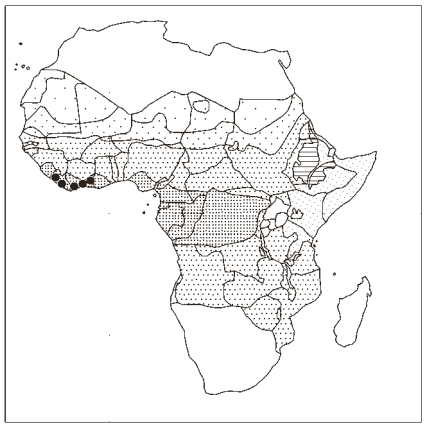
Pollinated by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

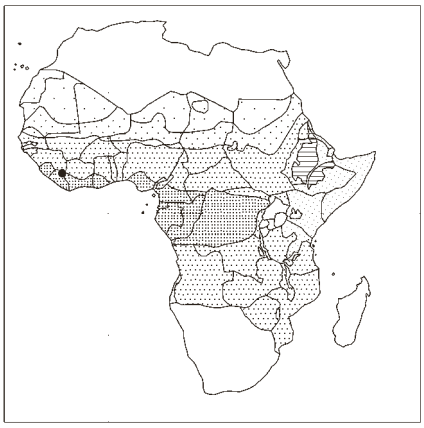
M. pallescens Lye, Fl. Gabon 44, Cyper: 168, 2012, French descr. only, with illustration p. 167, nutlet; Nord. J. Bot. 32: 137, 2014, with illustration p. 138.

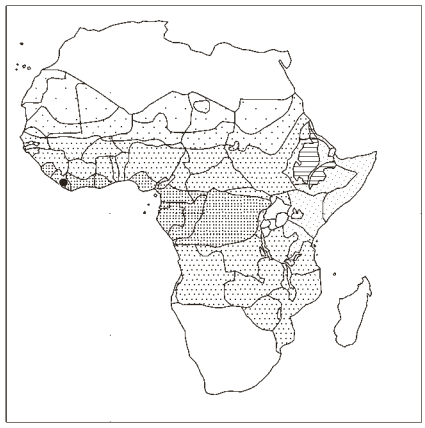
Perennial herb with a very short rhizome and a short erect stem with leaves and 1−6 fertile culms; culms lateral, green, 5−15 cm long, 0,4−0,8 mm ∅; leaves basal, c. 7−10; sheaths green to reddish brown-purplish, gradually transferred into the blades; blades 40−60 cm long, linear, 1−1,3 cm wide, with an attenuate basal pseudopetiole c. 3 mm wide and an upper blade 1−1,3 cm wide, margins scabrid; inflorescence terminal, globose, pallid to light brown, 1−1,8 cm ∅, of 10−20 obscure spikes; these c. 5 mm ∅, with 10−20 spreading spicoids.

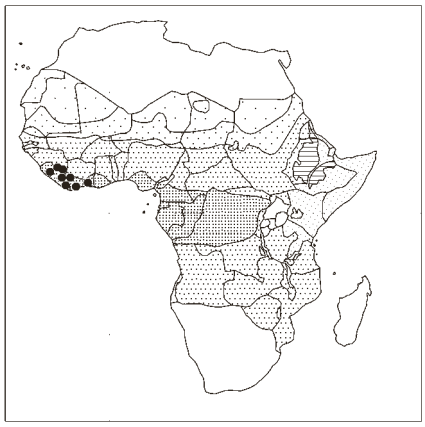
Primary and old secondary forests; 340−430 m alt.; "as it grows on ridges it is probably less adapted to withstand seasonal flooding than other [*Mapania*] species. It does not grow in sites where water is assembled during heavy rains, and will therefore be strongly negatively affected by logging due to drying out of its habitat."

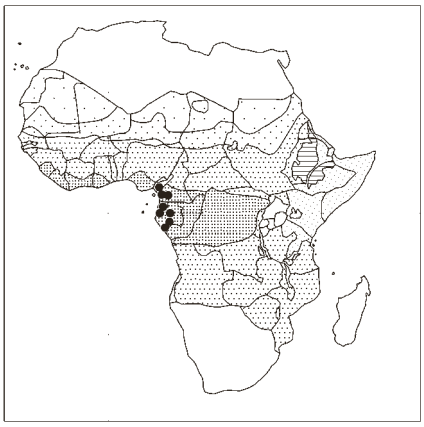
Superficially resembling *M. mangenotiana*; similar to *M. africana*.

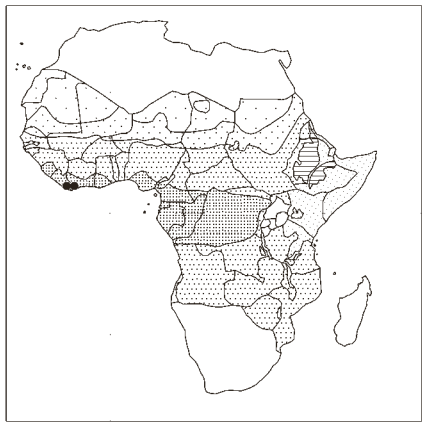

Mapania ivorensis

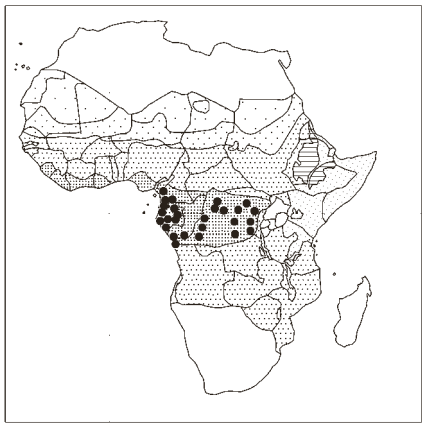

Mapania jongkindii

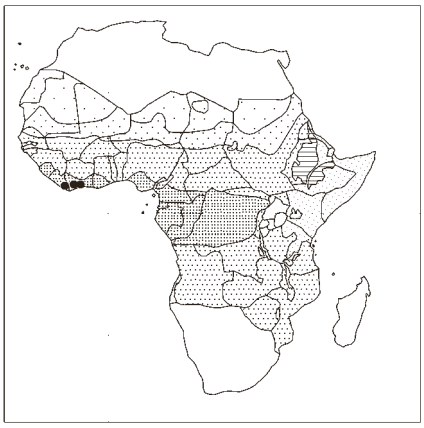

Mapania liberiensis

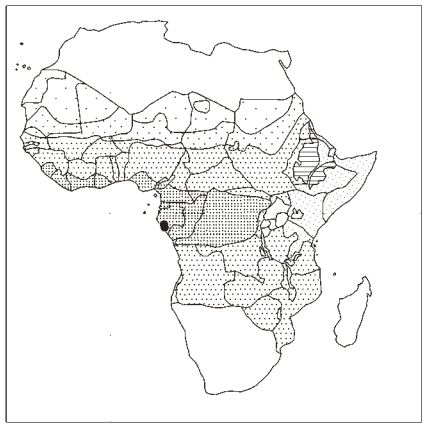

Mapania linderi

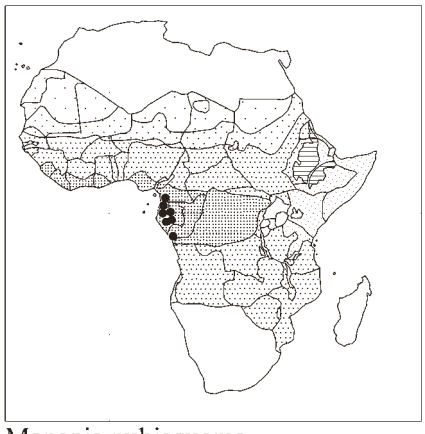

Mapania macrantha

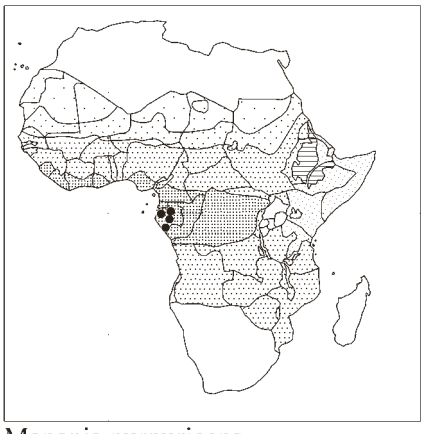

Mapania mangenotiana

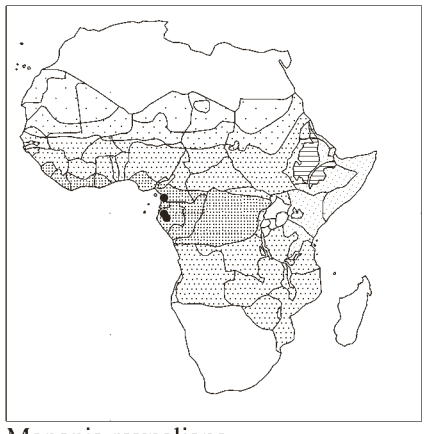

Mapania mannii


Mapania minor


Mapania pallescens


Mapania pubisquama


Mapania purpuriceps


Mapania raynaliana

Only 2 localities known (Gabon); plants collected in 2003 and 2005.

(***M. poecilolepis*** (Nelmes) Lye) – See above under **Hypolytrum poecilolepis** Nelmes

(***M. polystachya*** (Cherm.) Lye) – See above under **Hypolytrum polystachyum** Cherm.

(***M. pseudomapanioides*** (D. A. Simpson & Lye) Lye) – See above under **Hypolytrum pseudomapanioides** D. A. Simpson & Lye

M. pubisquama Cherm. – Icon.: Simpson (1992): 123, 175; Fl. Gabon 44, Cyper.: 169, 171, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 393, 2014.

Perennial herb with rhizome 2−4 mm ∅; culm solitary, erect, central, 20−45 cm tall, 1,7−4,5 mm ∅, triquetrous, glabrous, green; leaves basal, to 1,55 m long; blade linear, 0,21−1,03 m × 1,4−4,4 cm, apex gradually narrowed, acute or shortly acuminate, base gradually narrowed into pseudopetiole, green; pseudopetiole 7−22 × 0,4−1 cm; sheath linear-lanceolate, 10−23 × 1,4−2,6 cm, apex very gradually narrowed, reddish brown; inflorescence globose, pseudolateral, 2,8−3 cm wide, mid- or dark reddish brown, with to 50 spikes; these linear to elliptic, 1,2−2,2 × 0,3−0,6 cm, acute to obtuse, distinct.

Primary or secondary forests; often along rivers and brooks; 50−500 m alt.

Variable, especially in size of leaves.

(***M. purpurascens*** (Cherm.) Lye – See above under **Hypolytrum heterophyllum** Boeckeler

M. purpuriceps (C. B. Clarke) J. Raynal; Simpson (1992): 129−130. – Icon.: Fl. Gabon 44, Cyper.: 173, 2012 (nutlet).

bas.: *M. subcomposita* C. B. Clarke var. *purpuriceps* C. B. Clarke

Perennial herb with rhizome 3−4 mm ∅; culm solitary, erect, central, 33−40 cm long, 2,9−4,5 mm ∅, trigonous to subtriquetrous, glabrous, or angles sometimes scabrid, dark purplish or green; leaves basal, to 1,5 or more long; blade widely linear, 0,8−1,3 m × 4−6 cm, apex narrowed, acute, base gradually narrowed into sheath, mid- to dark green; pseudopetiole absent; sheath lanceolate, 12−17 × 2,6−3,4 cm, apex very gradually narrowed, often indistinct from blade, dark green to dark reddish brown; inflorescence terminal, globose, 3−5 cm wide, *purplish*, with numerous spikes; these broadly elliptic to obovate, 1−2 × 1,7 cm, obtuse, distinct.

Primary or secondary forest; often along rivers and brooks; 0−500 m alt.

Resembling *M. macrantha*.

(***M. pynaertii*** De Wild.) – See above under **Hypolytrum pynaertii** (De Wild.) Nelmes

M. raynaliana D. A. Simpson; Onana & Cheek, Red Data Book flow. pl. Cameroon: 368, 2011; Onana, Fl. Cameroun 40: 223, 2013. – Icon.: Simpson (1992): 132, 175; Fl. Gabon 44, Cyper.: 175, 2012.

syn.: *M. macrantha* var. *clarkeana* J. Raynal, nom. nud. provis.; *M. superba* C. B. Clarke p.p. quoad specim. Mann 1639.

Perennial herb with rhizome 4−6 mm ∅; culm solitary, erect, central, 53−76 cm long, 4−6 mm ∅, subtriquetrous, glabrous, green; leaves basal, to 1,15 m long; blade ± linear, 0,79−1,03 m × 3,8−5,4 cm, apex gradually narrowed, acute, base gradually narrowed into sheath, green; pseudopetiole absent; sheath linear-lanceolate, 14 × 3 cm, apex gradually narrowed into sheath, greenish to reddish brown; inflorescence terminal, globose 3,5−5,5 cm wide, mid- to dark brown, with numerous spikes; these ovate to elliptic, 1−1,5 × 0,4−0,6 cm, subobtuse, distinct.

Primary or secondary forests; often along rivers and brooks; 300−600 m alt.

Formerly included in *M. macrantha*.

M. rhynchocarpa Lorougnon & J. Raynal; Lowe & Stanfield, Fl. Nigeria: Sedges: 93, 1974 (as *M. macrantha*, specim. Okafor & Daramola FHI 36327); Jaeger & Adam, Végétaux vascul. Mts Loma 2: 224, 1981; Simpson (1992): 136−137; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011. – Icon.: Adansonia, Sér. 2, 8: 418, 421, 1968; Lorougnon Mém. ORSTOM 58: 77, 1972; Bot. Not. 129: 65, 1976 (partly); Browning & Mesterházy (2016): 22.

syn.: *M. macrantha* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 335, 1972, p.p. quoad specim. Richards 5148, Okafor & Daramola FHI 36327, non (Boeckeler) H. Pfeiff.; idem in Lowe & Stanfield, cited above.

Perennial rhizomatous herb; culm solitary, erect, central, 43 cm tall, 3,5 mm ∅, trigonous, glabrous, green; leaves basal; blade linear, 60−93 × 2,9−3,2 cm, apex narrowed, acute or shortly acuminate, base gradually narrowed into sheath, green; pseudopetiole absent; sheath linear, 13−14 × 2−2,2 cm, apex gradually narrowed, light to mid-brown; inflorescence terminal, globose, 4−6 cm ∅, *whitish*, composed of numerous indistinct spikes; nutlet *tuberculate* with *persistent style-base*.

Primary forest with *Cephaelis biaurita* on hillsides; forest with *Heritiera utilis*; c. 160−1000 m alt.

Also in Ghana, Congo ?

Pollinated by animals (Lorougnon in Bull. Jard. Bot. Natl. Belg. 43: 35, 1973).

Similar to *M. ivorensis* but inflorescence whitish, larger.

(***M. scaberrima*** (Boeckeler) C. B. Clarke) – See above under **Hypolytrum scaberrimum** Boeckeler

(***M. secans*** K. Schum.) – See above under **Hypolytrum secans** (K. Schum.) J. Raynal

(***M. senegalensis*** (L. C. Rich.) Lye) – See above under **Hypolytrum senegalense** L. C. Rich.

M. soyauxii (Boeckeler) H. Pfeiff. – Icon.: Simpson (1992): 176; Fl. Gabon 44, Cyper.: 179, 2012 (nutlet).

bas.: *Hypolytrum soyauxii* Boeckeler

syn.: *H. aschersonianum* Boeckeler; *Mapania aschersoniana* (Boeckeler) H. Pfeiff.; *M. dwanensis* Cherm.

Perennial herb with rhizome 3−5 mm ∅; culm solitary, erect, central, 20−45cm tall, 1,5−4 mm ∅, compressed-trigonous to trigonous, glabrous, green; leaves basal; blade linear, 50−120 × 1,5−3 cm, apex gradually narrowed, acuminate, base gradually narrowed into sheath, mid-green; pseudopetiole absent; sheath ± lanceolate, 8−14 × 1,2−1,6 cm, apex very gradually narrowed, light- to mid-brown; inflorescence terminal, globose, 1,8−5 cm wide, dark reddish brown, composed of numerous

spikes; these elliptic to ovate-elliptic, 7−10 × 3−5 mm, acute to obtuse, ± distinct.

Primary-or secondary forests; often along rivers and brooks; 1−700 m alt.

M. sylvatica Aubl. subsp. **gabonica** (Cherm.) D. A. Simpson; Kew Bull. 44: 140, 1989. – Icon.: Simpson (1992): 6, 45, 171; Fl. Gabon 44, Cyper.: 176, 2012.

bas.: *M. gabonica* Cherm.

Perennial herb with rhizome to 2 mm ∅; culm solitary, erect, central, 20−60 cm long, 1,4−3 mm ∅, terete to subtrigonous, glabrous, green; blade absent; sheath ± ovate, 2,5−18 × 1−3 cm, acute to shortly acuminate, often disintegrating in older plants, dark reddish; inflorescence terminal, composed of 1−2, rarely more spikes; these elliptic to oblong, rarely oblong- lanceolate 1,2−2,7 × 0,8−1,4 cm, obtuse to rounded, reddish brown, distinct; involucral bracts 3, leaf-like, ± elliptic, 12−30 × 3−6 cm.

Primary- or secondary forest; often along forest tracks and streams; probably c. 100−400 m alt.

The only *Mapania* species which occurs in both S. America and Africa. Subsp. **sylvatica** in S. America from French Guyana – Guyana – Surinam – Venezuela – Brazil. There are differences between the two subspecies in the spicoid bracts, together with the geographical separation.

Morphology-anatomy studied by A. de Lima Silva & al., Feddes Repert. 130: 65−77, 2019.

M. testui Cherm., Bull. Soc. Bot. France 77: 278, 1930, non *Hypolytrum testui* Cherm., ibid.: 277, 1930; Fl. Gabon 44, Cyper.: 180−181, 2012. – Icon.: Simpson (1992): 176 (nutlet).

Perennial herb with rhizome 0,1−0,18 cm ∅; culm solitary, erect, central, 25−41 cm long, 1,4−1,8 mm ∅, subtriquetrous, glabrous, green or reddish particularly towards base; leaves basal, to 60 cm or more long; blade ± elliptic, 10−36 × 1,5−2 cm, apex abruptly narrowed, acuminate, base abruptly narrowed into pseudopetiole, mid-green; sheath linear-lanceolate to lanceolate, 3,5−7 × 0,8−1 cm, apex gradually narrowed, greenish; inflorescence pseudolateral, half-globose to globose, 1,4−2,1 cm wide, mid-brown, with to 20 spikes; these elliptic, 7−8 × 2−3 mm, acute, indistinct to distinct.

Primary or secondary forests; often along rivers and brooks, 250−700 m alt.

(***M. unispicata*** (Sosef & D. A. Simpson) Lye ined.) – See above under **Hypolytrum unispicatum** Sosef & D. A. Simpson

SYNONYMS:

Mapania africana sensu auctt., non Boeckeler
= **Mapania mangenotiana**
africana Boeckeler var. *filipes* J. Raynal
= **M. africana** subsp. **filipes**
africana subsp. *occidentalis* J. Raynal = **M. mangenotiana**
afro-orientalis Lye = **Hypolytrum testui**
afro-orientalis Lye p.p., quoad specim. ex Côte d'Ivoire
= **H. heterophyllum**
angolensis (Nelmes) Lye = **H. heterophyllum**
aschersoniana (Boeckeler) H. Pfeiff. = **Mapania soyauxii**
bieleri De Wild. = **Mapania mannii** subsp. **bieleri**
cacumina (Nelmes) Lye = **Hypolytrum cacuminum**
camerunensis Lye = **H. subcompositum**
chevalieri (Nelmes) Lye = **H. chevalieri**
comoensis A. Chev. ex Hutch. & Dalziel 1936, descr. angl.
= **Mapania baldwinii**

costata Lye = **Hypolytrum pahiense**
deistelii K. Schum. = ? (See above under that name)
dolichostachya K. Schum. = **Mapania africana** subsp. **africana**
dolichostachya sensu Lorougnon, non K. Schum.
= **M. mangenotiana**
dwanensis Cherm. = **M. soyauxii**
gabonica Cherm. = **M. sylvatica** subsp. **gabonica**
grandis (Uittien) T. Koyama = **Principina grandis**
heteromorpha (Nelmes) Lye = **Hypolytrum heteromorphum**
heterophylla (Boeckeler) Lye = **H. heterophyllum**
ivorensis auctt., non (J. Raynal) J. Raynal = **Mapania jongkindii**, **M. liberiensis**
lancifolia (C. B. Clarke) Lye = **Hypolytrum lancifolium**
longiscaposa (C. B. Clarke) Lye = **H. senegalense**
macrantha sensu Fl. W. Trop. Afr., ed. 2, 3/2: 335, 1972, p.p., non (Boeckeler) H. Pfeiff. = **Mapania rhynchocarpa**
macrantha (Boeckeler) H. Pfeiff. var. *clarkeana* J. Raynal, nom. nud. provis. = **M. raynaliana**
macrantha subsp. *ivorensis* J. Raynal = **M. ivorensis**
macrantha var. *minor* Nelmes = **M. minor**
mildbraedii Graebn., nom. nud. = **M. amplivaginata**
monosperma (Jacq.-Fél.) Maguire & T. Koyama
= **M. amplivaginata**
oblonga C. B. Clarke, nom. nud., and var. *elliptica* C. B. Clarke, nom. nud. = **M. amplivaginata**
poecilolepis (Nelmes) Lye = **Hypolytrum poecilolepis**
polystachya (Cherm.) Lye = **H. polystachyum**
pseudomapanioides (D. A. Simpson & Lye) Lye
= **H. pseudomapanioides**
purpurascens (Cherm.) Lye = **H. heterophyllum**
pynaertii De Wild. = **H. pynaertii**
scaberrima (Boeckeler) C. B. Clarke = **H. scaberrimum**
secans K. Schum. = **H. secans**
senegalensis (L. C. Rich.) Lye = **H. senegalense**
subcomposita (C. B. Clarke) C. B. Clarke, nom. illeg.
= **Mapania ferruginea**
subcomposita var. *purpuriceps* C. B. Clarke
= **M. purpuriceps**
superba C. B. Clarke = **M. macrantha**
superba C. B. Clarke p.p. quoad specim. Mann 1639
= **M. raynaliana**
superba sensu Lorougnon 1963, non C. B. Clarke
= **M. ivorensis**

(MARISCOPSIS)

Mariscopsis hyalinus (Vahl) Ballard
= **Queenslandiella hyalina**
suaveolens Cherm. = **Q. hyalina**

(MARISCULUS)

Marisculus peteri (Kük.) Goetgh. = **Alinula peteri**

MARISCUS / *65 + 9 + 4* ?

Mariscus Vahl 1805, nom. conserv.

syn.: *Cyperus* L. sect. *Mariscus* (Vahl) Endl. 1836; *Cyp*. subgen. *Mariscus* (Vahl) C. B. Clarke 1884 [Kükenthal in Engler,

Pflanzenreich IV. 20/101: 402−566, 1936, comprising 13 sections (= n°s 44−56)]; *Monandrus* Vorster ms.

"One of us … believes that if *Kyllinga* and *Pycreus* are treated as separate genera from *Cyperus*, as they are in this treatment [also in our compilation], then *Juncellus* and *Mariscus* should also be separated from *Cyperus* on account of their distinct morphological characters" (Flora of China 23, Texts: 165, 2010).

Mariscus was included in *Cyperus* by Goetghebeur (in K. Kubitzki, The Families and Genera of Vascular Plants IV: 170, 1998). He wrote: "*Mariscus* is kept separate by several authors, is rarely maintained at subgeneric level when included in *Cyperus*, and is often divided into sections of widely scattered affinities. The polyphyletic nature of *Mariscus* has convincingly been demonstrated by Lye (1992) and is recognized even by authors (Raynal 1973: 166) who maintained it as a separate genus".

A historical review of the treatment of *Mariscus* is given by Reynders & al. in Taxon 60: 889−890, 2011, with the names of subdivisions cited. In older floras, such as Flora of West Tropical Africa (ed. 2, 3/2, 1972) *Mariscus* is maintained as separate, but the recent Flora of Tropical East Africa, Cyperaceae (2010), includes *Mariscus* in *Cyperus*, although other segregate genera are maintained. On writing up our present compilation we checked other (more) recent treatments. It seems that authors of "local" floras or checklists keep *Mariscus* as a distinct genus (e. g., Lisowski, Flore de la République de Guinée, 2009; Malaisse, Guide floristique du Parc National de Cantanhez, Guinée-Bissau, 2010; Chatelain & al., Cartes de distribution des plantes de la Côte d'Ivoire, 2011; Thiombiano & al., Catalogue des plantes vasculaires du Burkina Faso, 2012; etc.). Even Browning & Goetghebeur in Sedge … genera of Africa & Madagascar (2017), present *Mariscus* as a separate entity (p. 61).

We can also cite Gordon-Gray, who in Cyperaceae in Natal (Strelitzia 2: 124−125, 1995), made a pragmatic decision:

"From anatomy, physiology, karyology and phytochemistry, information is steadily accumulating that *Mariscus* species are more naturally positioned within *Cyperus* and *Pycnostachys* than collectively in a taxon *Mariscus* at either generic or subgeneric rank … Nevertheless, in the present work *Mariscus* is maintained as Natal species are well known under that genus and *Cyperus* is already cumbersome with the greatest number of species in Natal for Cyperaceae as a whole".

Lowe & Stanfield (Flora of Nigeria: Sedges: 93, 95, 1974) described *Mariscus* as follows. A large and difficult genus [c. 200 species], in characters of habit and inflorescence the species are variable, and no clear feature links them. In floral characters, they resemble *Cyperus* in having 3 stigmas, and *Kyllinga* in that the spikelets fall entire when mature. However, the spikelet character is not easy to observe, except in a few species which have very short few-flowered spikelets with all their achenes ripening together. Some species are much like *Torulinium* in that the rhachis of the inflorescence bears persistent scales after the spikelets have fallen.

Browning & Goetghebeur (l.c.) give a summary of characters "previously used to differentiate *Mariscus* from *Cyperus*: 1. spikelets disarticulating as a unit; 2. leaf blades usually well developed; 3. less than 5 nutlets per spikelet; 4. winged rachilla."

Our main list comprises 65 species, and 9 species of *Cyperus* are added as probably belonging to *Mariscus*; another 4 species are uncertain in our area. Among the 65 species listed 1 species has no fruit, and 7 species are known only from the type and further 2 from only 2 collections (in all c. 13 %).

MUASYA, A. M. & al. (2002). Phylogenetic relationships in Cyperpus L. s. l. (Cyperaceae) inferred from plastid DNA sequence data. *Bot. J. Linn. Soc.* 138: 145−153.

MARISCUS

Mariscus absconditicoronatus (Bauters, Reynders & Goetgh.) J.-P. Lebrun & Stork, **comb. nov**. in Candollea 74: 147, 2019. – Icon.: Novon 20: 134−135, 2010.

bas.: *Cyperus absconditicoronatus* Bauters, Reynders & Goethgh., Novon 20: 133, 2010. Angola, Bié, Falls of Cutato River, S of [Kuvango] – Cuchi Rd., 15 Sept. 1952; H. & E. Hess 52/262 (GENT holo-).

Perennial herb; rhizome 6−9 mm ∅ with conspicuous red-brown scales that split crown-like as rhizome thickens; culms 0,55−1 m tall, c. 2 mm ∅, triangular, ciliated on ribs, scabrous; leaves all basal, 4 to 8, lowest ones reduced to their sheath (to 13 cm, cinnamon coloured); highest leaves with blades (35−65 × 0,5−0,7 cm); inflorescence a single, terminal, spherical head 1,5−1,6 cm ∅; spikelets 5−8 × 1−1,2 mm.

River falls; miambo woodland; 1200 m alt. (Angola).

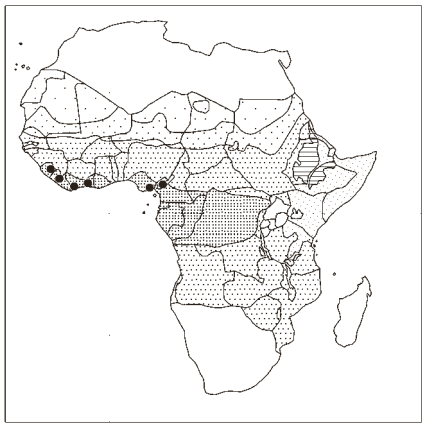
M. albomarginatus C. B. Clarke in Fl. Cap. 7: 187, 1897 (description); Fl. Trop. Afr. 8: 387−388, 1902; non *Cyperus albomarginatus* (Mart. & Schrad. ex Nees) Steud. 1854 (bas.: *Pycreus albomarginatus* Mart. & Schrad. ex Nees); nec *Cyperus albomarginatus* (C. B. Clarke) K. Schum. 1895, nom. illeg. (a synonym of *M. albomarginatus* C. B. Clarke, See below).

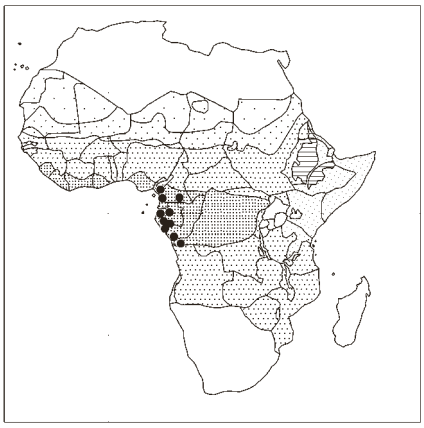
There is much doubt about the circumscription of this taxon. Flora of Tropical East Africa, Cyperaceae, 2010 (p. 220−221) treats *M. albomarginatus* C. B. Clarke 1897 as a synonym of ***Cyperus vestitus*** Hochst. ex C. Krauss 1845, but the World Checklist of Selected Plant Families, Cyperaceae, consulted in 2017, gives *Mariscus albomarginatus* as a synonym of ***Cyperus indecorus*** Kunth 1837 var. ***inflatus*** (C. B. Clarke) Kükenthal 1936.

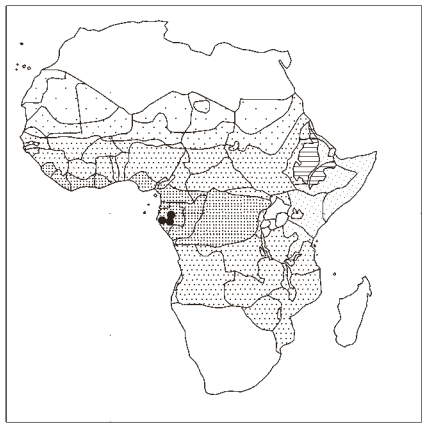
In this species complex Gordon-Gray (Cyperaceae in Natal: 126, 131, 133−134, 1995) "tentatively maintained 3 species, viz. *Mariscus albomarginatus* C. B. Clarke, *M. indecorus* (Kunth) Podlech, and *M. rehmannianus* C. B. Clarke, because "intensive field work … and breeding experiments are needed for confirmation" (p. 126). Moreover, *M. indecorus* "differs from *M. albomarginatus* … in the arrangement of spikelets on the spikes of the anthelate inflorescence … and in the longer spikelets and glumes of *M. indecorus* (but there is overlap in the parameters). The criteria are not reliably divisive" … Also, "varieties within *M. indecorus* are not upheld …" (p. 131). *M. rehmannianus* "in its most distinctive form with glume apices conspicuously recurved, … is easily identified. However such plants are not common in Natal … It is intimately a part of the plexus formed by *M. albomarginatus* … and *M. indecorus*… There are continuous size gradients for *M. albomarginatus*, *M. indecorus* (including var. *namaquensis*) and *M. rehmannianus* for spikelet and glume dimensions. All have in common, similar reddish pigmentation of the glumes (slightly purplish in *M. indecorus*), a narrow, often curved achene and well-developed sclerenchymatous strands in the leaves. Known distiribution patterns are not discordant with the concept of a continuous plexus" (p. 133−134).

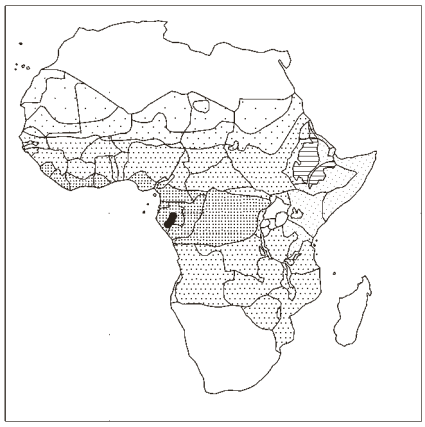
In this complex situation we have chosen to follow the treatment under *Cyperus vestitus* Krauss in Flora of Tropical East Africa, but adding to this *Mariscus indecorus* (Kunth) Podlech [= *Cyperus indecorus* Kunth var. *inflatus* (C. B. Clarke) Kük., and var. *namaquensis* Kük.; but excluding *Cyp. indecorus* var. *indecorus* which we treat under *Mariscus sumatrensis* (Retz.) J. Raynal = *Cyperus cyperoides* (L.) Kuntze].

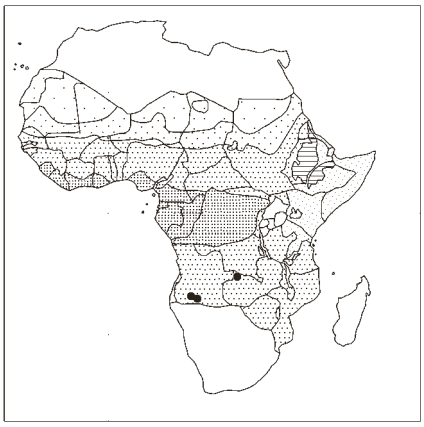
On the other hand, we keep *Mariscus rehmannianus* C. B. Clarke [= *Cyperus decurvatus* (C. B. Clarke) C. Archer & Goetgh.] as a separate entity, because it seems to be "the most distinctive form with glume apices conspicuously recurved", and "easily identified" (fide Gordon-Gray, o.c.: 133−134).

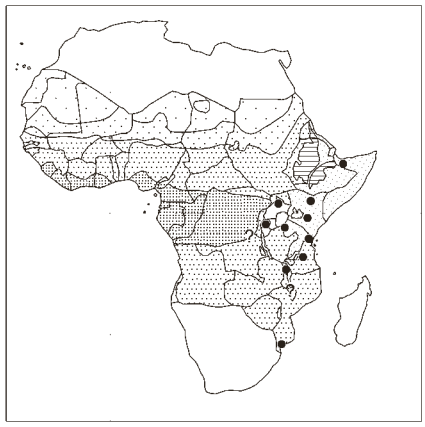

Mapania rhynchocarpa

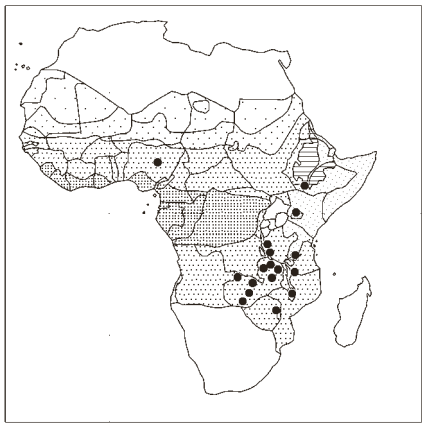

Mapania soyauxii

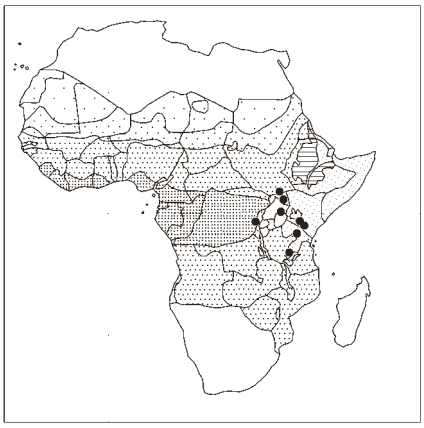

Mapania sylvatica subsp. gabonica

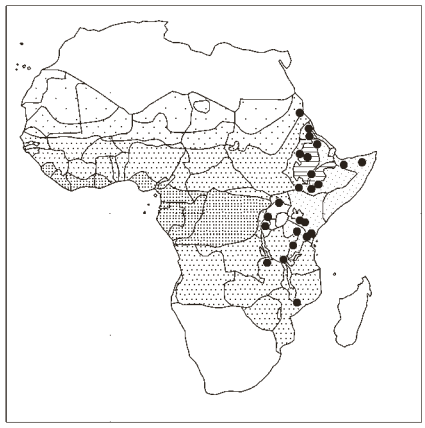

Mapania testui

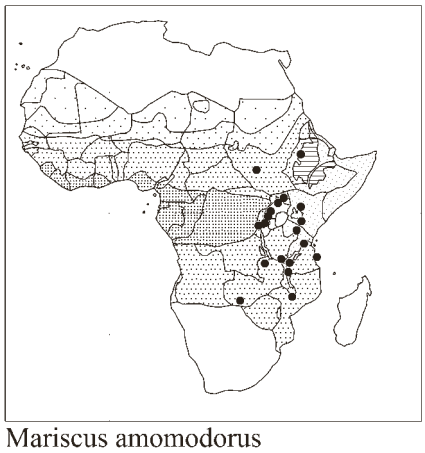

Mariscus absconditicoronatus

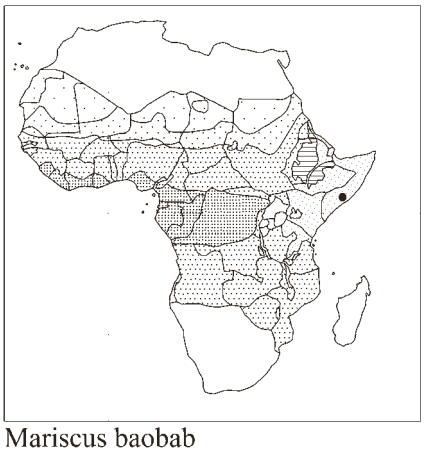

Mariscus albomarginatus

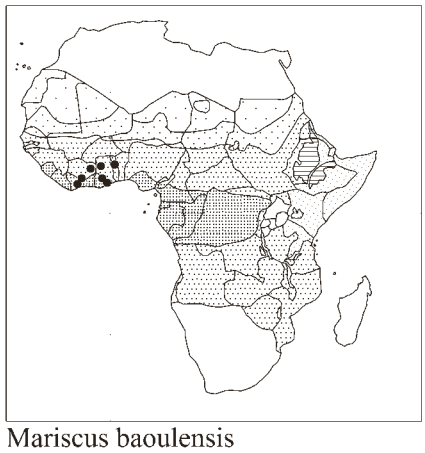

Mariscus albopilosus


Mariscus albosanguineus


Mariscus amauropus


Mariscus amomodorus


Mariscus baobab


Mariscus baoulensis

MARISCUS ALBOMARGINATUS

References with illustrations (*Mariscus albomarginatus*): Kükenthal in Engler, Pflanzenreich IV. 20/101: 544, 1936 (as *Cyperus vestitus* var. *pseudocallistus*); Haines & Lye, Sedges & rushes E. Afr.: 212, 1983 [as *Cyp. vestitus* and *Cyp. pseudo-vestitus* sensu eor. auctt. non (C. B. Clarke) Kük.]; Troupin, Fl. Rwanda 4: 463, 1998 (as *Mariscus vestitus*); Gordon-Gray, Cyper. Natal: 127, 1995 (nutlet).

syn.: *Mariscus vestitus* (Hochst. ex C. Krauss) C. B. Clarke, Fl. Capensis 7: 188, 1897 (fide Gordon-Gray, Cyper. Natal in Strelitzia 2: 126, 1995, p.p.; and Fl. Trop. Afr. 8: 385, 1902, p. max. p.); *M. obsoletenervosus* (Peter & Kük.) Greenway; *M. inflatus* C. B. Clarke; *M. binucifer* (C. B. Clarke) C. B. Clarke; *M. albomarginatus* C. B. Clarke var. *binucifera* C. B. Clarke; *M. indecorus* (Kunth) Podlech var. *inflatus* (C. B. Clarke) Podlech, and var. *namaquensis* (Kük.) Podlech; *Cyperus albomarginatus* (C. B. Clarke) K. Schum. 1895, non (Mart. & Schrad. ex Nees) Steud. 1854; ***Cyp. indecorus*** Kunth var. ***inflatus*** (C. B. Clarke) Kük., and var. ***namaquensis*** Kük.; *Cyp. pseudocallistus* Kük., incl. var. *angustialatus* Kük.; ***Cyp. vestitus*** Hochst. ex C. Krauss and var. *pseudocallistus* (Kük.) Kük.; *Cyp. obsoletenervosus* Peter & Kük.; *Cyp. pseudovestitus* sensu Haines & Lye, l. c., non (C. B. Clarke) Kük. but also cited as a synonym of *Mar. schimperi* (= *Cyperus neoschimperi* in Fl. Trop. E. Afr., Cyper.: 172, 2010, i.e. *Cyp. cruentus* Rottb.).

Perennial succulent herb 30−70 cm tall, with or without long stolons; culms thickened at base or with an ovoid pseudobulb to 4 cm ∅; culms glossy, 9−60 cm long, 0,3−2,1 mm ∅, trigonous, glabrous; leaves to 30 cm long; sheath pale to red-brown with wide translucent margin, 3−6 cm long, covering the pseudobulb, sometimes splitting into fibres; blade linear, 5−50 cm × 1,4−6 mm, flat, margin and primary vein scabrid, apex acuminate; inflorescence a simple anthela; primary branches 0−6, 0−7 cm long; spikes ovoid, 1−2,5 × 1−2 cm; spikelets in loose clusters, sessile and at end of primary branches, 7−16 per cluster, ± linear, 5−13,5 × 1−2,8 mm. – Spikelets basically cream-coloured: *closely* packed on inflorescence branches, usually slightly ascending (*M. albomarginatus* s. str.); *loosely* packed on inflorescence branches, usually spreading (*M. indecorus*). – Cf. also under *M. rehmannianus*.

Grassland; woodland; rocky bushland; often on rocky outcrops; greens; 0−2100 m alt.

Namibia, S. Africa, Swaziland.

According to Fl. Trop. E. Afr., Cyper.: 172, 2010, "*Cyperus neoschimperi* Kük." [= "*Mariscus schimperi* Steud." = *Cyp. cruentus* Rottb.] is close to *Cyp. obsoletenervosus* Peter & Kük. but stolons are lacking. In this same flora (p. 221) *Cyp. vestitus* (= *Mariscus albomarginatus*) is described as a plant *with or without stolons*. On the other hand, *Cyp. neoschimperi* is characterised by a short creeping rhizome with several tufted culms. Among the synonyms cited under "*Cyperus neoschimperi*" there is *Cyp. pseudovestitus* sensu Haines & Lye, Sedges & rushes E. Afr.: 212, fig. 427, 1983, non (C. B. Clarke) Kük. However, this same reference also appears among the synonyms of *Cyp. vestitus*, i.e. *Mariscus albomarginatus* (p. 221). This seems contradictory.

Among the synonyms cited (Fl. Trop. E. Afr., Cyper.: 172, 2010) under *Cyp. neoschimperi* (= *Cyp. cruentus*) there is also *Cyp. vexillatus* Peter ex Kük., a taxon said to be intermediate between *Cyp. vestitus* (= *Mariscus albomarginatus*) and *Cyp. pseudovestitus* (C. B. Clarke) Kük. (= *Mariscus pseudovestitus*) by Kükenthal in Engler, Pflanzenreich IV. 20/101: 547, 1936.

The circumscription of the taxa cited above needs clarification.

MARISCUS

M. albopilosus C. B. Clarke; Kew Bull. 40: 781−782, 1985 (map); Fl. Trop. E. Afr., Cyper.: 155, 2010 (under *Cyperus*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 217, 1983 (under *Cyperus*); Nord. J. Bot. 13: 509, 1993 (idem); Fl. Eth. & Eritrea 6: 467, 1997 (idem).

syn.: ***Cyperus albopilosus*** (C. B. Clarke) Kük.

Perennial herb with *horizontal* somewhat moniliform rhizome; culms few, 15−47 cm long, 0,7−1,3 mm ∅, trigonous, minutely but densely hairy; leaves to 21,5 cm long; sheath pale green, 2,5−10,5 cm long; blade linear, flat, rather stiff, 1−11 cm × 3−4 mm, *upper surface densely hairy*, apex acute; inflorescence *whitish* or *pale yellow*, *capitate*, *globose*, with 1 spike 7−9 mm long, 8−10 mm wide; spikelets many per inflorescence, lanceolate, 3,2−5,5 × 1−1,3 mm.

Grassland; wooded grassland; open woodland; 800−2000 m alt.

M. albopilosus has a strong resemblance to some *Kyllinga* species. Its geographical distribution is disjunct.

M. albosanguineus (Kük.) Napper; Simpson & Inglis in Kew Bull. 56: 281, 2001 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 184, 2010 (idem); Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015 (idem). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 556, 1936 (idem); Haines & Lye, Sedges & rushes E. Afr.: 215, 1983 (idem).

bas.: ***Cyperus albosanguineus*** Kük.

Perennial herb; culms tufted, 5−50 cm tall, 0,7−2,5 mm ∅, trigonous; base swollen, covered with *fibrous remains of old leaf sheaths*; sheaths pale or reddish-brown, 3−8 cm long; blade linear, 4,2−23 cm × 1−2,4 mm, glabrous to slightly scabrid on margin, apex acute to acuminate; inflorescence capitate, ovoid to rounded, 0,8−1,3 cm long, 1−1,3 cm wide; spikelets in dense spikes, ovoid, 3−5 × 1,3−2 mm; lower glumes *dark purple*, the middle and upper creamy white.

Loudetia arundinacea grassland, forming very tough tussocks on otherwise bare rocky outcrops; seasonally wet grasslands, moorland, in rock crevices; on lava; 1550−4000 m alt.

M. amauropus (Steud.) Cufod., incl. var. *amauropus* fa. *amauropus* and fa. *conglobatus* (Kük.) Cufod., and var. *friesii* (Kük.) Cufod.; in the following quotations figuring under *Cyperus*: Harris & al. in Kew Bull. 66: 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015. – Icon.: Nord. J. Bot. 3: 214, 1983; Haines & Lye, Sedges & rushes E. Afr.: 213, 1983; Troupin, Fl. Rwanda 4: 463, 1988; Fl. Eth. & Eritrea 6: 466, 1997; Wood, Handbook Yemen flora: 325, 1997; Väre in Ann. Bot. Fenn. 42: 44−45, 2000 (lectotype; treated under *Cyperus cruentus*); Fl. Trop. E. Afr., Cyper.: 238, 2010.

bas.: ***Cyperus amauropus*** Steud. 1854.

syn.: *Cyp. cruentus* Rottb. subsp. *amauropus* (Steud.) Lye; *Cyp. leptophyllus* Hochst. ex Steud., 1854, in syn., and fa. *conglobata* Kük., and var. *deliciosus* Kük., and var. *friesii* (Kük.) Kük., and var. *ibeensis* (K. Schum.) Kük.; *Cyp. ibeensis* K. Schum. 1895; *Cyp. friesii* Kük.; *Cyp. leptolepis* Peter ex Kük.; *Cyp. concinniformis* Kük.; *Mariscus concinnus* C. B. Clarke; *M. leptophyllus* (Hochst. ex Steud.) C. B. Clarke

Perennial succulent herb with a slightly swollen pseudobulb to 1 cm ∅, with a short rhizome and sometimes with 1−5 cm long stolons; culms tufted, 15−60 cm long, 1−3 mm ∅, trigonous, glabrous; leaves many at base, to 40 cm long; sheath uncoloured or pale brown, sometimes partly purplish, 3−8 cm long; blade linear, 16−34 cm × 1,3−5 mm, margin scabrid, apex acuminate; inflorescence a simple anthela, sometimes very loosely capitate;

primary branches 0−4, 0−3,7 cm long; spikelets in loose clusters, sessile and at end of primary branches, 3−10 per cluster, spreading or reflexed, linear-lanceolate, 5,8−24 × 1,6−3,7 mm.

Grassland; wooded grassland; rocky hills; on shallow soil covering rocks; savannas; greens; sclerophyllous forests; dry bushland; often in bare soil; 450−2700 m alt.

Saudi Arabia, Yemen (Hall & al. in Edinb. J. Bot. 65: 132, 2008, under *Cyperus*).

Pseudobulbs eaten in Kenya (Simpson & Inglis in Kew Bull. 56: 283, 2001, under *Cyperus*).

M. amomodorus (K. Schum.) Cufod., incl. var. *amomodorus*, var. *bulbocaulis* (Boeckeler) Cufod., and var. *mollipes* (C. B. Clarke) Cufod., but *excl*. var. *paolii* (Chiov.) Cufod. (= *Mar. paolii* Chiov., a dubious species); Troupin, Fl. Rwanda 4: 464−465, 1988; Fl. Eth. & Eritrea 6: 468, 1997 (as *Cyperus mollipes*; *Cyp. circumclusus* p. 467, in synonymy of *Cyp. plateilema*); Gereau & al., Lake Nyasa florist. checklist: 46, 2012 (as *Cyp. mollipes*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 218 (as *Cyp. circumclusus* & *Cyp. amomodorus)*, 219 (as *Cyp. globifer*), 1983.

bas.: *Cyperus amomodorus* K. Schum.

syn.: ***Cyp. mollipes*** (C. B. Clarke) K. Schum., incl. var. *bulbocaulis* (Boeckeler) Kük., var. *amomodorus* (K. Schum.) Kük., and var. *globifer* (C. B. Clarke) Kük.; *Cyp. macropus* Boeckeler 1879, nom. illeg.; *Cyp. submacropus* Kük., incl. var. *abbreviatus* Kük., var. *calocephalus* Peter ex Kük., and var. *fuscofibrosus* Peter ex Kük.; *Cyp. globifer* (C. B. Clarke) Lye; *Cyp. firmipes* (C. B. Clarke) Kük.; *Cyp. circumclusus* (C. B. Clarke) Kük.; *Kyllinga bulbocaulis* Boeckeler 1875; *Mariscus boeckeleri* C. B. Clarke; *Mar. mollipes* C. B. Clarke; *Rhynchospora bulbocaulis* Boeckeler 1879 non *Cyperus bulbocaulis* (Hochst.) Boeckeler 1844; *Mariscus globifer* C. B. Clarke; *Mar. macropus* (Boeckeler) C. B. Clarke, nom. illeg.; *Mar. firmipes* C. B. Clarke; *Mar. circumclusus* C. B. Clarke; *Mar. oblonginux* C. B. Clarke; *Ascopholis gamblei* C. E. C. Fisch. (India).

Perennial tufted herb; culms few to many and crowded, 8−60 cm tall, 0,5−3,5 mm ∅, with base bulbous or tuberous, covered by rather thick brown or blackish old fibres from leaf sheaths; culm trigonous to triquetrous, glabrous; leaf sheath pale to dark brown, 3−7 cm long; blade linear, 5−30 × 0,1−0,7 cm, attenuate, primary vein and margin scabrid; inflorescence capitate, hemispherical or irregular, *white* or *cream*, 0,8−2,1 cm ∅; spikelets many per head, lanceolate, 4−8 × 0,7−2 mm, 2−4-flowered.

Protea grassland; open *Acacia* bushland; open woodland; scattered trees grassland; heavy / black soils; occasionally on thin soil over rock; locally common; savannas; 0−2400 m alt.

Very variable species (See discussion in Fl. Trop. E. Afr., Cyper.: 181−182, 2010).

India to Burma [cited as *Ascopholis gamblei* by Prasad & Singh, Sedges Karnataka (India): 42, 2002].

(**M. aster** C. B. Clarke ex Cherm.)

syn.: ***Cyperus aster*** (C. B. Clarke ex Cherm.) Kük. with var. **biflorus** Peter & Kük. in Engler, Pflanzenreich IV. 20/101: 551, 1936.

Cited in Fl. Trop. E. Afr., Cyper.: 252, 2010, as a "species with inadequate data".

See below at end of **Mariscus** as a "species in need of further study" (p. 275).

M. baobab (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019. – Icon.: Thulin, Fl. Somalia 4: 131, 1995 (with English description p. 134); Nord. J. Bot. 16: 368, 371 (map), 372 (nutlet), 1996.

bas.: ***Cyperus baobab*** Lye, Nord. J. Bot. 16: 371−372, 1996. Type : Somalia, Shabeelaha Dhexe (2°18'N × 45°52'E), G. Moggi & R. Bavazzano 344 (FT holo-).

Very tussocky perennial herb, with numerous closely set narrow ovate pseudobulbs c. 2 cm long, 5 mm ∅, that are formed by crowded succulent leaf sheaths; culms to c. 10 cm tall, 0,5−1,5 mm ∅, distinctly triangular with prominently irregular scabrid angles or ± terete; leaves from basal (2−2,5 cm) part of culm only; blades to c. 5 cm long, 0,5−1,5 mm wide, very thick, margins uncoloured, denticulate; sheaths ± whitish above, darker and succulent below; inflorescence of 4−10 crowded sessile spikelets forming a head 1,5−2,5 cm ∅; spikelets lanceolate, *compressed*, 7−12 × 3−4,5 mm, 10−20-flowered.

Calcareous (consolidated) sand-dunes; < 150 m alt.

M. baoulensis (Kük.) Hutch. (Fl. W. Trop. Afr. 2: 485, 1936) ex J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019; Fl. W. Trop. Afr., ed. 2, 3/2: 287, 1972 (as *Cyperus baoulensis*); Brunel & al., Fl. analyt. Bénin in Englera 4: 537, 1984 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 220, 2011 (idem).

bas.: ***Cyperus baoulensis*** Kük. in Engler, Pflanzenreich IV. 20/101: 467, 1936; type: Côte d'Ivoire, Nord-Baule, Distr. Kordiokoffi, A. Chevalier 22336 (P holo-).

syn.: *Mariscus baoulensis* Hutch. in Hutchinson & Dalziel, Fl. W. Trop. Afr. 2: 485, 1936, English description only; *Cyperus baoulensis* (A. Chev.) Kük., nom., Repert. Spec. Nov. Regni Veg. 29: 199, 1931; *Pycreus baoulensis* A. Chev. 1920, nom. nud.

Perennial herb with short rhizome growing in tufts; culms 0,8−2 m tall, triquetrous, with bulbous base and bearing leaves in lower part; leaves shorter than culm, rigid, 2 mm wide; sheath *dark brown*; inflorescence a simple anthela with 6 rays to 20 cm long that are slender, suberect, very unequal in length; spikes ovate, 3−3,5 cm ∅, each with 3−10 spikelets, these linear-lanceolate, 2 cm × 3 mm, 10-flowered; glumes *very large*, deltoid, 5 × 4 mm, with spreading tips, light brown.

Marshy grassland.

M. boreochrysocephalus (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019; Fl. Trop. E. Afr., Cyper.: 149−150, 2010 (under *Cyperus*); Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015 (idem). – Icon.: Lye in Nord. J. Bot. 3: 216, 1983 (idem); Haines & Lye, Sedges & rushes E. Afr.: 219−220, 1983 (idem).

bas.: ***Cyperus boreochrysocephalus*** Lye, Nord. J. Bot. 3: 216, 1983; type: Uganda, Karamoja Distr., 5−6 km N of Lothaa, 10 April 1970, 1180 m alt.; Lye 5462 (MHU, Makerere Univ. Uganda holo-; C, EA, K, P, UPS, iso-).

Perennial to 61 cm tall herb with swollen fleshy culm-base covered by fleshy brown scales, the outer ones usually splitting up into blackish fibres; culms few, 12−60 cm long, 0,5−2 mm ∅, trigonous; leaves many, 10−36,5 cm long; sheaths 2,4−6,5 cm long; blade 6−30 cm long, 1,2−4 mm wide; inflorescence capitate, globose-ovate, 8−16−20 mm long, 8−15 mm wide, dense, bright *yellow* (as in *Kyllinga chrysantha*, *Cyperus chrysocephalus* and some *Ascolepis*, e.g. *A. protea* var. *anthemiflora*); spikelets ± linear, 6−7 × 0,5−1 mm, 2-flowered.

Grassland, bushed grassland; open woodland; *Acacia* savanna; 1100−2200 m alt.

Near *M. chrysocephalus* but: involucral bracts 3−5 (not 1−2), and stem-base swollen and covered by fleshy scales.

? Perhaps the same as *Mariscus* (*Cyperus*) *remotus* C. B. Clarke (Fl. Trop. Afr. 8: 382, 1901) from S Zaire (fide Fl. Trop. E. Afr., Cyper.: l. c.). Our map (p. 257) represents both taxa. See also under *Cyperus remotus* above (p. 135) and *Mariscus remotus* below (p. 268).

M. boreohemisphaericus (Lye) J.-P. Lebrun & Stork, **comb. nov.**; Fl. Eth. & Eritrea 6: 457, 1997 (under *Cyperus*); Simpson & Inglis in Kew Bull. 56: 285, 2001 (idem); Naczi & Ford, Sedges: uses…: 81, 2008 (idem).

bas.: **Cyperus boreohemisphaericus** Lye in Lidia 3: 77, 1993; type: Ethiopia, Keffa, Mt Karkarha, 16 km SSE Mezan Tefari, 6°58'N × 35°25'E, 1800 m alt.; Ash 3401, 18 Febr. 1976 (K holo-; FT iso-).

Perennial herb with slender stolons 20 cm long, 1−3 mm ∅, covered with scales; culms solitary or a few together, 5−70 cm tall, 0,15−0,35 cm ∅, 3-angled, glabrous; leaves 10 or more per culm; blades 10−30 cm long, 0,3−0,8 cm wide, flat, densely scabrid at least on margin and midrib near tip; inflorescence a lax or somewhat congested anthela, 2−7 × 2−8 cm; spikes sessile or on up to 3 cm long peduncles with 10−20 spreading linear spikelets, each 5−12 × 1−2 mm, only slightly flattened, 4−12-flowered, *falling off entire when mature*.

Grassy places in forest; also near cultivations; weed in perennial and rotation crops; 1700−2300 m alt.

M. capensis (Steud.) Schrad.; Gordon-Gray, Cyper. Natal: 126, 128 (*M. capensis*), 136 (*M. uitenhagensis*), 1995. – Icon.: ibid.: 127 (nutlet).

bas.: *Kyllinga capensis* Steud.

syn.: *Mariscus marlothii* C. B. Clarke (non Boeckeler) var. *globospica* C. B. Clarke; *M. uitenhagensis* Steud.; ***Cyperus capensis*** (Steud.) Endl. with var. *pseudomarlothii* Kük., and fa. *globospica* (C. B. Clarke) Kük., but *excl*. var. *polyanthemus* Kük. (= *Mariscus chersinus*).

Tufted perennial herb, leafy; culm bases swollen into pseudobulbs covered in persistent dark brown sheaths; culms 8−12 cm tall, trigonous, smooth; leaves ± as long as culms, 1 mm wide; inflorescence simple, 3−4-radiate, rays sessile or to 2 cm long; bracts 3−5; spikes ovate, dense, green to orange tinted, 5−7 mm long, 5 mm wide; spikelets ovate, 3 mm long, 1-flowered, straw-coloured to pallid when dry, completely hiding the short axes.

In S. Africa growing in shallow soil often over rock, rocky hills; in Mozambique ecology not given.

S. Africa, Swaziland, Lesotho.

Chermezon (Bull. Soc. Bot. France 82: 336, 1935) cites *Mariscus capensis* from Mombasa, SE Kenya (Humbert 4295). He thinks that it is an introduction from S. Africa.

(**M. chaetophyllus** Chiov.); Kükenthal in Engler, Pflanzenreich IV. 20/101: 551, 1936; Thulin, Fl. Somalia 4: 138−139, 1995.

syn.: ***Cyperus chaetophyllus*** (Chiov.) Kük.

Densely tussocky perennial herb with a short woody rhizome producing many swollen culm-bases, some fertile but many with leaves only; culm 5−50 cm long, 0,5−0,7 mm ∅, obtusely triangular to compressed, glabrous; leaf sheaths light to medium reddish-brown or blackish with age, glabrous, sometimes splitting into fibres, the inner succulent; blades filiform, to 30 cm long, 0,2−0,6 mm wide, glabrous or minutely scabrid on margin; inflorescence of 1 spike with 3−5 spreading spikelets, these lanceolate, to c. 8 × 1−1,5 mm, slightly compressed, 8−15-flowered; flowers not developed, nutlet unknown.

Granitic rocks with shallow soil; 200−500 m alt.

Taxon of uncertain status: the type (Paoli 731, Somaliland, S1: "Bur Meldac") is almost without an inflorescence, and the other collection cited is very immature (Thulin, Fl. Somalia 4: l.c.). – Not mapped by us.

M. chersinus N. E. Br.; Podlech in Mitt. Bot. Staatssamml. München 4: 112, 1961 (as *M. angularis*); Gordon-Gray, Cyper. Natal: 128, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 73 (map), 1999; Archer & Craven, Cyper. Namibia: 24, 2004. – Icon.: Bothalia 13: 444, 1981.

syn.: *M. angularis* Turrill; *M. bullatus* (Kük.) Podlech; ***Cyperus chersinus*** (N. E. Br.) Kük., incl. var. *angularis* (Turrill) Kük.; *Cyp. bullatus* Kük.; *Cyp. capensis* var. *polyanthemus* Kük.

Perennial tufted herb with short rhizome; culm 20−90 cm tall, trigonal, swollen basally into a poorly developed pseudobulb; leaves longer than culm, 3−6 mm wide; inflorescence simple with 5−10 rays, each ray 4−6 cm long, spreading; spikes cylindrical, 1−2 × 0,6−1,2 cm; spikelets 3−5 × 1 mm, 1−2-flowered.

Ecology unknown in Zambia; 1200 m alt.; sandy places in Mozambique.

N Nambia (frequent), Botswana, S. Africa.

"Further study may reveal that *M. chersinus* is the tropical phase of *M. uitenhagensis*" [= *M. capensis*], fide Gordon-Gray, l.c.

See also under *Cyperus trigonellus* Suess. (in Rhodesia Sci. Assoc. 43: 154−155, 1951) and below (pp. 145, 276).

M. chionocephalus Chiov. – Icon.: [E. Chiovenda & G. Cufodontis] Miss. Biol. Paese Borana 4, Racc. Bot., Angiosp. – Gymnosp.: 293, 1939.

syn.: ***Cyperus chionocephalus*** (Chiov.) Chiov. ex Chiarugi

Perennial densely tufted herb, with stolons 1−2 mm ∅ covered with pale-chestnut scales; base of culms thickened into an oblong bulb 4−5 cm long, 1−1,5 cm ∅; outer sheaths of culms splitting into brown reddish fibres; basal leaves as long as or longer than culm, linear, 2 mm wide at base, apex long-attenuate, setaceous; culms slender, rounded at base, triangular above, glabrous; inflorescence a simple anthela, hemispherical, 1−1,5 cm ∅, white; spikelets elliptic-lanceolate, 6−7,5 × 2,5 mm; glumes 4 mm long, 2 mm wide, white.

Wooded savanna; frequent; also in wadi with *Juniperus*.

Said to be close to *M. scleropodus* (Chiov.) Cufod., a taxon of uncertain status in N Somalia (N3).

M. chionocephalus is known from 2 localities in S Ethiopia (not in Somalia).

Not figuring in Fl. Eth. & Eritrea 6, 1997.

M. chrysocephalus K. Schum.; Figueiredo & Smith, (Kunene Exp. Baum) Bothalia 39: 195, 2009; Fl. Trop. E. Afr., Cyper.: 150, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 220, 1983.

syn.: ***Cyperus chrysocephalus*** (K. Schum.) Kük.

Perennial herb with a somewhat swollen tussocky base, covered by black and dark brown fibrous remains of leaf sheaths; culms tufted, 18−77 cm long, 0,6−1,6 mm ∅, trigonous, glabrous; leaves to 42 cm long, sheaths black, breaking up into fibres when older, 4−8 cm long; blade linear, 13−34 cm long, 1,3−2 mm wide, apex often showing signs of burning; inflorescence a dense globose

head, 0,7−1,2 cm long, 0,7−1,1 cm wide; spikelets many per head, linear-lanceolate, 5,2−9 × 1,1−1,3 mm; *glumes yellow*.

Boggy grassland; temporary swamps; on thin soil overlying rock; 950−1800 m alt.

Four aberrant specimens from around Lake Victoria are cited at end of **Mariscus** (**M.** sp. nov. ? Hoenselaar ined.) p. 276.

[***Cyperus congensis*** C. B. Clarke 1896 – See at end of **Mariscus** p. 275.]

M. congestus (Vahl) C. B. Clarke, incl. var. *glanduliferus* C. B. Clarke, but *excl*. var. *brevis* (Boeckeler) C. B. Clarke (= *Cyperus crassipes* Vahl); Clarke & Mannheimer, Cyper. Namibia: 92, 73 (map), 1999; Ngwenya in Sabonet News 8/1: 18, 2003 (S Mozambique); Archer & Craven, Cyper. Namibia: 24, 2004; Naczi & Ford, Sedges: uses…: 72, 82, 2008 (under *Cyperus*). – Icon.: Gordon-Gray, Cyper. Natal: 127, 1995 (nutlet); Pooley, Field guide wild flow. Kwazulu-Natal …: 505, 504 (map), 1998.

bas.: ***Cyperus congestus*** Vahl 1805, non Poir. 1806.

syn.: *Chlorocyperus congestus* (Vahl) Palla; *Pycreus congestus* (Vahl) Hayek; *Cyperus bulbosus* Lag. 1816, nom. illeg., non Vahl 1805; *Cyperus congestus* Vahl var. *glanduliferus* (C. B. Clarke) Kük., and var. *grandiceps* Kük., and var. *pseudonatalensis* Kük.; *Cyp. cooperi* (C. B. Clarke) K. Schum.; *Mariscus cooperi* C. B. Clarke; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tufted herb appearing annual in the first year of growth and flowering, with a persistent rhizome, *never stoloniferous*; culms 30−80 cm tall, base swollen, bulbous, clothed in purplish leaf sheaths; leaves basal, shorter or as long as culm, 4−10 mm wide, long-acuminate, scabrous on margin and midrib; inflorescence branched with 2−7 rays of unequal length, to 12 cm long, and ending in large reddish-brown spikes 2−3,5 cm ∅; spikelets dense, linear-lanceolate, 0,8−2 cm long, c. 2 mm wide, compressed, 8−16-flowered, tardily disarticulating from the spike axis.

In S. Africa growing on damp streambanks and estuaries; moist depressions in grassland; margins of temporary water bodies; drainage ditches; weed of disturbed areas, cultivations, gardens; also grown as ornamental.

Often misidentified as (*Cyperus distan*s =) *Mariscus longibracteatus*, *Cyperus natalensis* (the leafy form), *Cyp. crassipes* (for details, See Gordon-Gray & al. 2006: 137).

S. Africa, Namibia, Lesotho; introduced in S Europe (C Portugal, Spain, Italy), Caucasus, E Asia, Japan, Australia, Hawaii, Tristan da Cunha. – Seems absent from tropical Africa (eventual presence in W Africa, Sierra Leone, cited in Fl. W. Trop. Afr., ed. 2, 3/2: 296, 1972, as *Mariscus* sp. A).

(**M. cufodontii** Chiov.) – Icon.: E. Chiovenda & G. Cufodontis, Miss. Biol. Paese Borana 4, Racc. Bot., Angisp.-Gymosp.: 295, 1939.

Tufted perennial herb; base of culm bulbous, bulb pyriform-oblong, 3−4,5 × 1−1,5 cm; outer leaf sheaths disintegrating into greyish-brown fibres; basal leaves shorter than culm, 3−4 mm wide, margins scabrid-ciliate; culms 11−23 cm long; inflorescence a simple anthela, white, globose, 1−1,5 cm ∅; spikelets linear-lanceolate, 2−3-flowered.

Forest and clearings towards the plain; c. 1700 m alt.

Said to be related to *Mariscus chionocephalus*, but spikelets few-flowered; and close to *M. plateilema* but basal fibres (of

leaf-sheaths) *greyish-brown* and spikes entirely confluent, and spikelets perhaps with 2−3 nutlets.

Taxonomic status uncertain; not mapped.

M. cundudoensis / **cunduduensis** (Chiov.) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019; Fl. Eth. & Eritrea 6: 465, 1997. – Icon.: Thulin, Fl. Somalia 4: 135, 1995 (both citations under *Cyperus*).

bas.: ***Cyperus cundudoensis*** Chiov. in Malpighia 35: 65 (!), 1939 (volume present at K Library, and text seen by us; cited as *Cyperus cundud**o**ensis*). – *Cyperus cundud**u**ensis* Chiov. cited in Index Kewensis, Supplement X (1936−1940): p. 68 (Oxonii 1947) with reference to Atti R(eale) Accad. Ital(ia), Mem. Cl. Sc(i). Fis. etc. 11: 60, 1940. A copy of Chiovenda's article, Plantae novae aut minus notae ex Aethiopia, ibid.: 17−67, is present at G (Library), dated on cover page 1940−XVIII, but at the end of the article Roma, 1941−XIX. The article arrived at the Academy on 22 August, 1939, and was presented on 18 November 1939. – Type: Gortani (& Jaboli ?), n. 1, 18, on the flat top of Gara Cundudo / Cundudu, basaltic soil, 2800 m alt., 5 XII. 1937, fl. fr. (FT holo-).

Densely tussocky perennial herb; culm bases crowded, swollen, covered by conspicuous pale sheaths; culms 3−15 cm long, 0,3−0,5 mm ∅, 3-angular, smooth; leaves from the basal 2−3 cm only, usually 5−8 per culm; blades linear, 3−5 cm × 0,5−1 mm, with a very conspicuous white marginal border; inflorescence a terminal globose head 1,5−2,5 cm wide, of 4−10 sessile spikelets; these linear, 5−18 × 2−4 mm, occasionally somewhat curved, 10−20-flowered.

Limestone escarpment; sand dunes; stony ground; gravelly plains; open woodland or scrubland; 0−2800 m alt.

Very similar to *Cyperus wissmannii* O. Schwartz from Yemen or *Cyp. rubicundus*.

M. deciduus (Bockeler) C. B. Clarke; Lidia 3: 48, 1992; Clarke & Mannheimer, Cyper. Namibia: 92, 73 (map), 1999; Archer & Craven, Cyper. Namibia: 24, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 301, 2005; Fl. Trop. E. Afr., Cyper.: 204−205, 2010 (under *Cyperus*). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 472, 1936; Nord. J. Bot. 1: 60, 1981; Haines & Lye, Sedges & rushes E. Afr.: 166, 1983; Lidia 3: 49, 1992.

bas.: ***Cyperus deciduus*** Boeckeler

syn.: *Cyp. wittei* Cherm.

Perennial herb with a woody, horizontal rhizome to 10 cm long; culms 21−52 cm tall, 0,6−1 mm ∅, trigonous, smooth; leaf sheaths grey to reddish-brown, 2−5,5 cm long; blades 8−18 cm long, 1,6−2,1 mm wide, scabrid on margins and veins, apex acute; inflorescence a simple anthela with primary branches 2−4, 1−3,5 cm long; spikelets in digitate clusters, sessile and on primary branches, 2−8 per cluster, linear, 6,3−13,7 × 1,2−1,6 mm.

Boggy or wet grassland; usually on shallow soil; 960−1500 m alt.

Namibia, S. Africa, Botswana, Swaziland.

M. diurensis (Boeckeler) C. B. Clarke, *excl*. var. *longistolon* (Kük.) Podlech, Mitt. Bot. Staatssamml. München 4: 112, 1961 [= *Pycreus longistolon* (Peter & Kük.) Napper]; Chermezon in Bull. Soc. Bot. France 82: 335, 1935; Fl. Trop. E. Afr., Cyper.: 166−167, 2010 (under *Cyperus*); Darbyshire & al., Pl. Sudan & S. Sudan: 105, 2015 (idem). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 223, 1983; Troupin, Fl. Rwanda 4: 463, 1988; Fl. Eth. & Eritrea 6: 468, 1997 (under *Cyperus*).

MARISCUS DIURENSIS

bas.: ***Cyperus diurensis*** Boeckeler

syn.: *Cyp. diurensis* var. *acuminatosquamatus* Kük., var. *gondanus* (Boeckeler) Kük., and var. *laetevirens* Peter & Kük.; *Cyp. gondanus* Boeckeler

Perennial herb with a slightly swollen culm base with 1−10 cm *long slender stolons*; culms few, 25−80 cm tall, 0,7−2,5 mm ∅, trigonous, glabrous; leaf sheath 2,5−9 cm long; blade linear, 22−39 cm × 2−3,8 mm; scabrid on margin and primary vein, apex acuminate; inflorescence a solitary *whitish* globose head, 1−2 cm long, 1,1−2,2 cm wide; spikelets many per inflorescence, ± lanceolate, 6,5−14 × 2−4 mm, falling off entire when mature.

Stony ground in *Acacia* formation; grassland; humid meadow; fallows; rocky outcrops; (sclerophyllous) scrub savanna; 0−1800 m alt.

Presence in Zimbabwe uncertain.

(**M. dregeanus** Kunth, Enum. pl. 2: 120, 1837, non *Cyperus dregeanus* Kunth, Enum. pl. 2: 31, 1837). – Icon.: Gordon-Gray, Cyper. Natal: 127, 1995 (nutlet).

syn.: ***Cyperus austroafricanus*** C. Archer & Goetgh.

According to Gordon-Gray (o.c.: 131, 1995) "*M. dubius, M. capensis* … and *M. dregeanus* represent an interrelated plexus (*M. dregeanus* incorporating products of hybridisation and back-crossing derived from the other two species as putative original parents). The three taxa should be investigated karyologically and reproductively before further attemps are made to treat them systematically … it seems most suitable and convenient to include *M. dregeanus* within the limits of *M. dubius*."

M. dregeanus is cited in Fl. Trop. E. Afr., Cyper.: 256, 2010 under "Species of doubtful occurrence". C. B. Clarke in Fl. Trop. Afr. 8: 380−381, 1902, says that this species occurs in Ghana (Gold Coast: Accra) and Nigeria (Old Calabar), in the island of S. Tomé, W-most Zaire (Matadi), in Angola (Loanda), as well as in E. Africa (Zanzibar, Usambara, Dar es Salaam) as well as in the Flora Zambesiaca area and S. Africa, Mascarene Isl., India, Borneo. For the Flora of Trop. E. Africa treatment no specimens were seen.

M. dregeanus s. str. occurs in S. Africa, Namibia (map by Clarke & Mannheimer, Cyper. Namibia: 74, 1999, in NE Namibia on the Angolan frontier), Swaziland, and also in Mozambique (cited by Pires de Lima in Bol. Soc. Brot., Sér. 2, 2: 130, 1924 from Palma, 10°48'S × 40°29'E; and by Rendle in J. Linn. Soc., Bot. 40: 222, 1911, from Beira, Madanda Forests, 20°20'S × 33°40'E). Not mapped by us.

See under **M. dubius** below.

M. dubius (Rottb.) Kük. ex G. E. C. Fischer; Cable & Cheek, Pl. Mt Cameroon: 154, 1998 (under *Cyperus*); Simpson & Inglis in Kew Bull. 56: 291, 2001 (idem); Clarke & Mannheimer, Cyper. Namibia: 92, 74 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 257−258, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 301, 2005; Lisowski, Fl. Rép. Guinée 1: 405, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011; Fl. Trop. E. Afr., Cyper.: 186−187, 2010 (under *Cyperus*); Darbyshire & al., Pl. Sudan & S. Sudan: 105−106, 2015 (idem). – Icon.: Rottboell, Descr. & Icon. rar. pl.: pl. IV/5, 1773 (as *Cyperus dubius*); C. B. Clarke, Ill. Cyper.: pl. XXI/1−6, 1909 (*Mariscus dregeanus*); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 253, 1955 (as *Cyp. dubius* var. *macrocephalus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 96, 1974; Bothalia 13: 445, fig. 16, 1981; Haines & Lye, Sedges & rushes E. Afr.: 468, 1983 (*Cyp. dubius* subsp. *macrocephalus*); Gordon-Gray, Cyper. Natal: 127, 130, 1995; Fl. Eth. & Eritrea 6: 468, 1997 (under *Cyperus*); Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 73, 2002; Fl. Gabon 44, Cyper.: 51, 2012; Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 161, 2014 (under *Cyperus*); Browning & Goetghebeur, Sedge genera of Afr. & Madag.: 61, (2017); Fl. Mascareignes 202, Cyper.: 53, 2018 (under *Cyperus*).

MARISCUS DUBIUS

bas.: ***Cyperus dubius*** Rottb.

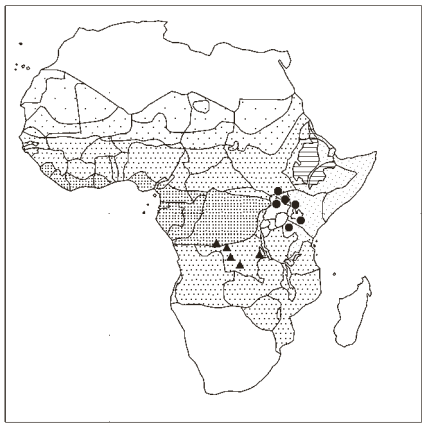
syn.: *Mariscus dregeanus* Kunth; and See below under the subspecies.

Perennial herb; culms with a bulbous base, tufted, many, crowded, sometimes semi-succulent, 8−40−75 cm tall, 0,5−2 mm ∅, bluntly to sharply triangular, glabrous; leaves many; sheath pale brown, the lower somewhat thicker, brown and occasionally splitting into fibres, to 4 cm long; blade bright green or glaucous, linear, 5−33 cm × 1−8 mm, scabrid on at least margin and primary vein, apex attenuate; inflorescence capitate, green or greenish-white or white tinged green, hemispherical to ovoid, 5−15−20 mm ∅, of 3−6 congested sessile spikes; spikelets ovoid, 2−6 × 1−2 mm.

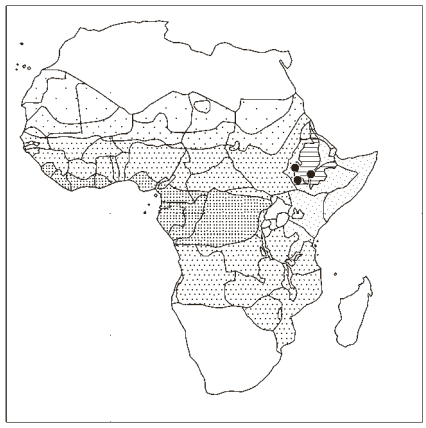
Loudetia arundinacea grassland with scattered trees, on rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals; recent lava (eruption of Rumoka, 1912); open sclerophyllous forests; sandy soil; soil pockets of rocky outcrops in woodland or bushland or grassland; forest margins and clearings; bushland and grassland near the sea; foreshore; riverine forest; widespread as a weed; specimens from W Cameroon with the leaf sheaths forming a large bulbous base c. 3 cm across and having very small spikelets may represent a form resulting from burning (fide F.W.T.A., ed. 2, 3 (2): 295, 1972); riverine or lake shores; on wooded rocks growing with *Ophioglossum vittatum*; in shallow seasonally wet soil on rock-outcrops, inselbergs (Porembski & Brown in Candollea 50: 359, 1995); weed in open rice fields, sandy sites, rotation crops, roadsides, sea coasts; 0−2600 m alt.

S. Tomé, Príncipe, Annobón (Figueiredo & al. in Bothalia 41: 52, 2011); Namibia, S. Africa, Botswana, Swaziland; Madagascar, Indian Ocean islands; SW Asia (Yemen: perhaps an error for *Mariscus schimperi* var. *viridis*, fide Wood, Handbook Yemen flora: 328, 1997); India, Sri Lanka E-wards to Malesia, China, Philippines, Pacific islands; naturalized in SE Australia.

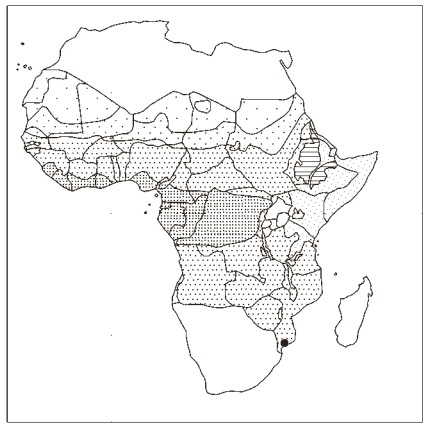
Comprises 2 subspp.: – subsp. **dubius** [syn.: ***Cyperus dubius*** var. ***dubius***, and var. *buchananii* (C. B. Clarke) Kük., var. *caespitosus* Boeckeler, var. *capitatus* (Cherm.) Kük., var. *coloratus* (Vahl) Kük. and subsp. *coloratus* (Vahl) Lye, var. *decaryi* (Cherm.) Kük., var. *detersus* (C. B. Clarke ex Cherm.) Kük., var. *polyactis* Peter ex Kük., var. *stenactis* Peter ex Kük.; *Cyperus coloratus* Vahl; *Cyp. kyllingioides* Vahl, incl. var. *incrassatus* (C. B. Clarke) Kük.; *Cyp. capitatus* Poir.; *Mariscus coloratus* (Vahl) Nees; *M. kraussii* Hochst. and var. *capitatus* Cherm.; *Kyllinga mariae* Steud.; *K. multinervia* Steud.; *Isolepis boeckeleri* Oliv.]; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; – subsp. **macrocephalus** (C. B. Clarke) J.-P. Lebrun & Stork [bas.: *Mariscus coloratus* (Vahl) Nees var. *macrocephalus* C. B. Clarke 1902; syn.: ***Cyperus dubius*** Rottb. subsp. *macrocephalus* (C. B. Clarke) Lye and var. ***macrocephalus*** (C. B. Clarke) Kük. and fa. *macrocephalus* Boeckeler 1879, nom. nud.].; – *Cyperus dubius* var. *detersus* (C. B. Clarke ex Cherm.) Kük. (bas.: *Mariscus detersus* C. B. Clarke), cited by Kükenthal in Engler, Pflanzenreich IV. 20/101: 565−566, 1936, from Uluguru Mts, Tanzania (Schlieben 3848) is not cited in Fl. Trop. E. Afric., Cyper.: 186, 2010. It is a synonym of *Mariscus dubius* subsp. *dubius*. – The differences between the 2 subspecies cited above are: subsp. **dubius** with leaves 1−5 mm wide, inflorescence head 5−15 mm ∅; subsp. **macrocephalus** with leaves 4−8 mm wide, inflorescence head 13−20 cm ∅.



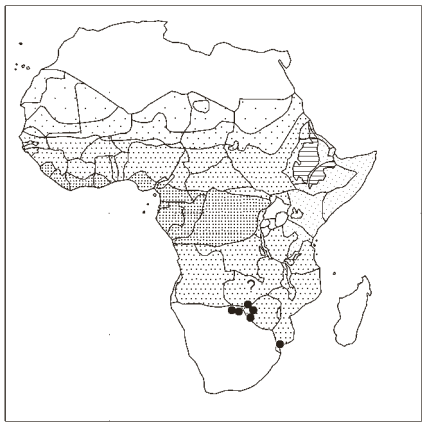
Mariscus boreochrysocephalus
Mariscus (Cyperus) remotus ▲



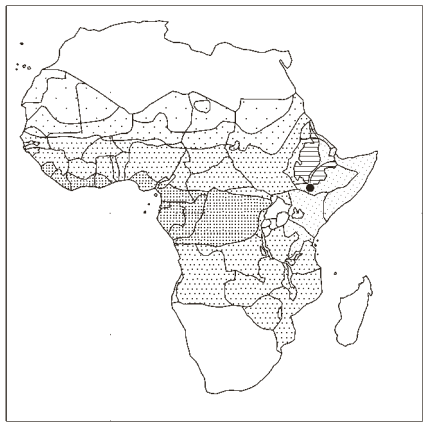
Mariscus boreohemisphaericus



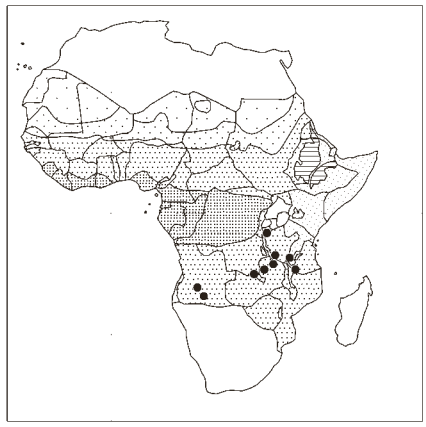
Mariscus capensis



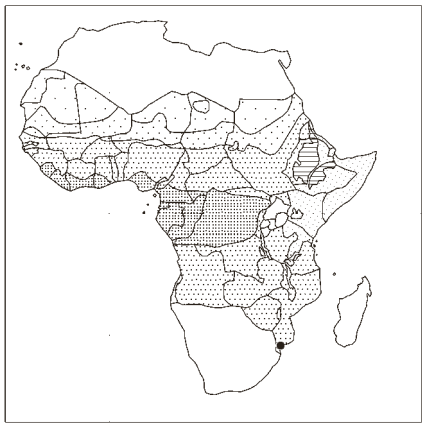
Mariscus chersinus



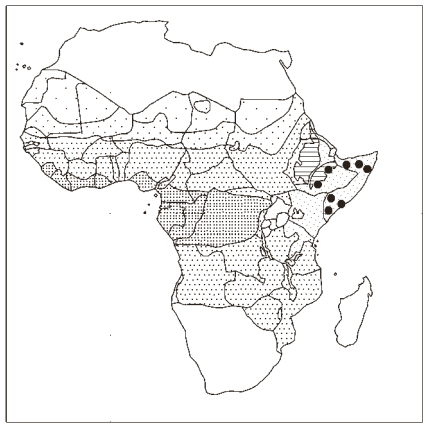
Mariscus chionocephalus



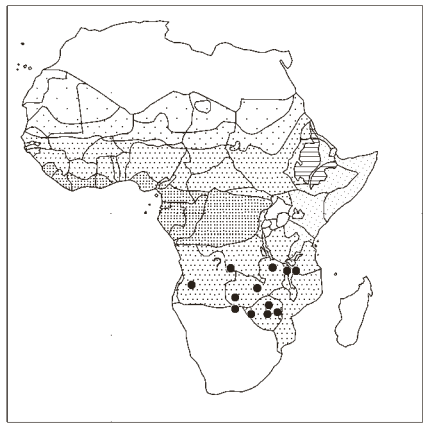
Mariscus chrysocephalus



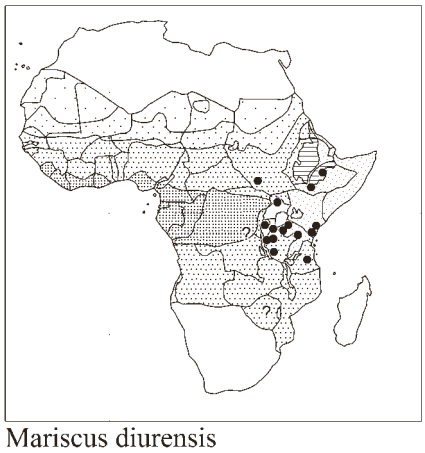
Mariscus congestus



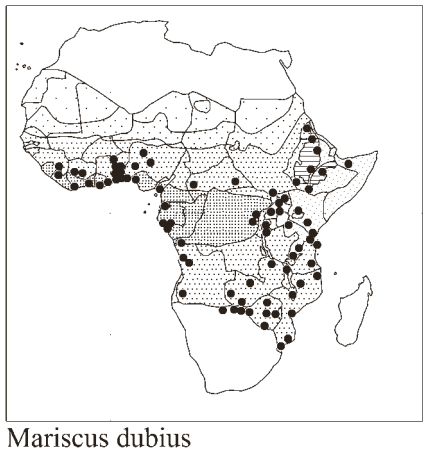
Mariscus cundudoensis



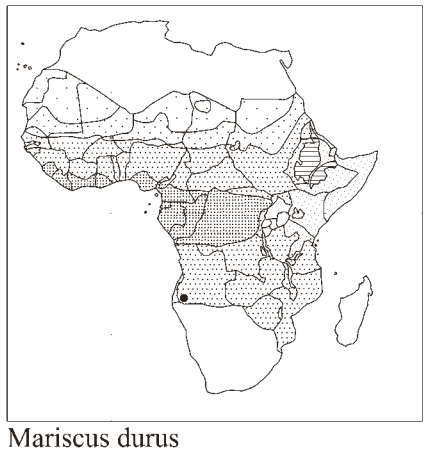
Mariscus deciduus



Mariscus diurensis



Mariscus dubius



Mariscus durus

For comments on relationships *Mariscus dregeanus – M. dubius – M. capensis*, See above under **M. dregeanus**.

"*Mariscus dubius* may be confused with some species of *Kyllinga* which have a swollen base (e.g. *K. tenuifolia*), but a close examination of the spikelets of *M. dubius* shows that the glumes … do not completely enclose each other; also *Mariscus* has trigonous achenes, whereas those of *Kyllinga* are convex" (Lowe & Stanfield, o.c.: 97, 1974).

M. durus (Kunth) C. B. Clarke – Icon.: Arnold & Vorster in Bothalia 13: 442, 1981.

bas.: ***Cyperus durus*** Kunth

syn.: *Cyperus laetus* sensu Ridl. in Transact. Linn. Soc., Ser. 2, 2: 138, 1884, p.p., non J. Presl & C. Presl

Perennial herb with slender stolons, wiry, subterranean, 2−12 cm long, 2−3 mm ∅, clothed in light brown lanceolate papery scales; culms 40−75 cm tall, rounded and obtusely trigonous at top, base woody, notably thickened, covered by old leaf bases; leaves sometimes longer than culms, olive-green, c. 8 mm wide, glabrous, erect, rigid; inflorescence a contracted umbel 2,5−7,5 cm ∅, of 3−8 very unequal rays, terminal but appearing lateral or sublateral; the subcorymbose spikes nearly congested into compound heads at end of each ray, chestnut-red or ferruginous-brown, globose-ovate, 1,2−1,8 cm ∅; spikelets oblong, dense.

Wet wooded places "now almost dried up".

S. Africa.

Superficially similar to *Ficinia arenicola* Arnold & Gordon-Gray var. *erecta* Arnold & Gordon-Gray from S. Africa (Bothalia 13: 441−443, 1981).

M. ferrugineoviridis (C. B. Clarke) Cherm.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 246, 1955 (as *Cyperus bequaertii*); Podlech in Mitt. Bot. Staatssamml. München 4: 112, 1961; Thulin, Fl. Somalia 4: 132, 1995; Fl. Trop. E. Afr., Cyper.: 231−232, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 202, 1983; Troupin, Fl. Rwanda 4: 463, 1988.

bas.: *Cyperus maranguensis* K. Schum. var. *ferrugineoviridis* C. B. Clarke

syn.: ***Cyp. ferrugineoviridis*** (C. B. Clarke) Kük., *incl*. var. *distantiformis* Kük., and var. *luteiformis* Kük.; *Cyp. bequaertii* (Cherm.) Robyns & Tournay; *Mariscus bequaertii* Cherm.

Perennial herb with stolons to 15 cm long, 0,5−3 mm ∅, with or without rhizome; culms few, 0,2−1,2 m long, 2−4 mm ∅, base swollen, trigonous, sometimes almost triquetrous, glabrous; leaves on lower half of culm, to 58 cm long; sheath green to brownish above, dark brown to purple near culm-base, 3−12,5 cm long; blade 15−45 cm long, 5−12 mm wide, scabrid on margins and primary vein, apex acute; inflorescence a lax anthela with 5−10 main branches; spikelets in loose clusters, sessile at end of primary (sometimes secondary) branches, 10−30 per cluster, linear-lanceolate, 7,2−24 × 0,9−1,6 mm.

Grassland; cleared forest; also weed in cultivated land; savannas; rocky outcrops; termite mounds; grassy clearing in sclerophyllous forest; 0−2450 m alt.

Presence in S. Africa doubtful.

(***M. firmipes*** C. B. Clarke); Fl. Trop. Afr. 8: 382, 1902; Kükenthal in Engler, Pflanzenreich IV. 20/101: 562, 1936 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 257, 2010 (as "excluded species").

Described from one specimen (Whyte s. n.) from Malawi, Zomba and plains, 2500−3500 ft. (750−1050 m). Basal parts lacking; spikelets 2−3-flowered. Kükenthal (l. c.) gives 5 further specimens, from Tanzania (300−1250 m alt.).

Name now cited as a synonymy of **Mariscus amomodorus** (K. Schum.) Cufod. [= ***Cyperus mollipes*** (C. B. Clarke) K. Schum.].

M. flabelliformis Kunth 1816, non *Cyperus flabelliformis* Rottb. 1773 (= *Cyperus alternifolius* L. subsp. *flabelliformis* Kük.); incl. var. *aximensis* (C. B. Clarke) S. S. Hooper; Renier, Fl. Kwango 1: 71, 1948; Lowe & Stanfield, Fl. Nigeria: Sedges: 97, 99, 101 (*M. luridus*), 1974; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 635, 1985; Lisowski, Fl. Rép. Guinée 1: 405, 2009 (incl. *M. luridus*); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011 (incl. *M. luridus*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012 (incl. *M. luridus*). – Icon.: Berhaut, Fl. ill. Sénégal 9: 274, 1988; Fl. Gabon 44, Cyper.: 73, 2012 (nutlet; as *Cyperus tenuis*); Velayos & al., Fl. Guinea Ecuat. 11, Cyper.: 360, 2014 (idem).

syn.: ***Cyperus tenuis*** Sw. 1788, non Muhl. 1817; incl. var. *aximensis* (C. B. Clarke) Kük., var. *brevior* Kük., var. *eurystachys* (Ridl.) Kük., var. *fulvescens* Kük., var. *grandiceps* Kük., and var. *luridus* (T. Durand & De Wild.) Kük.; *Cyp. flabelliformis* (Kunth) Spreng. 1825, nom. illeg., non Rottb. 1773; *Cyp. dussii* Boeckeler; *Cyp. dussianus* Duss.; *Mariscus luridus* T. Durand & De Wild.; *M. tenuis* (Sw.) Nelmes 1952, nom. illeg.; *M. aximensis* C. B. Clarke; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb sometimes small and slender with solitary culms from a thin rhizome, but often densely tufted, 16−50 cm tall; culms 1−4 mm ∅, glabrous, trigonous, swollen at base; leaves in lower part of culm; sheath purple; blade 10−40 cm long, 1−3 mm wide; inflorescence a simple anthela, 2−8 cm wide, with 1−5 (sub-) sessile and 5−10 pedunculate spikes, peduncles 2−4,5 cm long; spikes cylindric, 0,8−3 × 0,6−2 cm, each with 20−30 spikelets, these linear, pointed, 4−13 × 0,6−1,5 mm, 4−10-flowered, erect and perpendicular to spike axis.

Open damp ground; fallows; often under shadow; weed in lawns, cultivations; sometimes very common; troublesome weed in, especially, nurseries; survives herbicide spraying; 0−1750 m alt.

Bioko/Fernando Poo; tropical C. & S. America from Mexico to Brazil (Fl. Mesoamericana 6: 433−434, 1994, as *Cyperus tenuis*), West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 271, 2012; idem).

M. gypsophilus (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019; Davies in Cyperaceae Newsl. 16/4: 15, 1998 (under *Cyperus*); Lye in Biol. Skr. 54: 204, 2001 (idem). – Icon.: Thulin, Fl. Somalia 4: 137, 1995 (under *Cyperus*; English descr. only); Nord. J. Bot. 16: 374 (map), 375, 1996.

bas.: ***Cyperus gypsophilus*** Lye, Nord. J. Bot. 16: 374, 1996; type: Somalia, Nugaal region, 3 km E of Anod, O. J. Hansen & H. Heemstra 6323, 30 June 1979 (K holo-; C, EA, WAG iso-).

Perennial herb with poorly developed short rhizome; culms with woody bases, 10−20 cm long, 1−1,5 mm ∅, glabrous, obscurely triangular above, almost terete below; leaves c. 10 per culm, all basal or in the basal 3 cm of culm; sheaths pale to straw-coloured with a thick 7−15-nerved central part and scarious pale margin; blades 2−10 cm long, 1−1,5 mm wide, ± semiterete, smooth or minutely scabrid on margin, often curved towards apex; inflorescence a dense terminal irregular cluster of spikelets 1−2 cm ∅, consisting of 8−15 crowded sessile spikelets, each

0,8−1 cm × 2−3 mm, linear-lanceolate, only slightly compressed, 10−15-flowered.

Limestone or gypsum hill; 700−900 m alt.

Only known from the type collected in 1979.

M. hamulosus (M. Bieb.) S. S. Hooper; Berhaut, Fl. ill. Sénégal 9: 274, 1988; Clarke & Mannheimer, Cyper. Namibia: 92, 74 (map), 1999; Archer & Craven, Cyper. Namibia: 24, 20, 2004; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010. – Icon.: Raynal in Adansonia, Sér. 2, 6: 583, 585 (map), 1967.

bas.: ***Cyperus hamulosus*** M. Bieb.

syn.: *Scirpus hamulosus* (M. Bieb.) Steven; *S. lugardii* C. B. Clarke; *S. pitardii* Trab. ex Pit.; *Dichostylis hamulosa* (M. Bieb.) Nees; *Isolepis hamulosa* (M. Bieb.) Kunth; *Cyperus aristatus* Rottb. var. *hamulosus* (M. Bieb.) Boeckeler and subsp. *hamulosus* (M. Bieb.) Asch. & Graebn., and subsp. *hamulosus* var. *pitardii* (Trab. ex Pit.) Maire; *Cyperus pygmaeus* Cav. 1801, nom. illeg., non Rottb. 1773, nec Retz. 1786, nec Nutt. 1835.

Annual tufted herb with a spicy smell; culms 2−15 cm long, flattened to trigonous; leaves few; sheaths purple; blades < 1 cm to 15 cm long, 0,5−1 mm wide; inflorescence a dense compound head or pseudo-umbel with 1−6 spikes sessile or stalked, ovate, starry, each 6−8-flowered, 3−5 mm long.

Hollows in sandy soil subject to occasional flooding; temporarily humid hollows in coastal sands; marigot side; in pure sand of dry river bed.

Fragmented distribution (4 different regions) in subdesert zones (mean annual rainfall 300−500 mm) in Africa, SE Europe – W Asia: Morocco, (not in Tunesia fide Le Floc'h & al., Fl. Tunisie: 344, 2010); Namibia, Botswana, Lesotho; E Europe: Romania, Bulgaria, Greece, Russia, Ukraine; W Asia: Transcaucasus, Kazakhstan, Turkmenistan, Uzbekistan (map by Raynal, o.c.: 585).

Near *M. squarrosus*, and both have a spicy smell of foenogreek (*Trigonella*).

Glumes not arranged in 2 rows and the plant looks more like a *Scirpus* than a *Mariscus* (Lowe & Stanfield, Fl. Nigeria: Sedges: 99, 1974).

M. hemisphaericus (Boeckeler) C. B. Clarke; Thulin, Fl. Somalia 4: 132, 1995 (under *Cyperus*); Simpson & Inglis in Kew Bull. 56: 296, 2001 (idem); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 77, 2006 (idem); Fl. Trop. E. Afr., Cyper.: 173, 2010 (idem). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 207, 1983.

bas.: ***Cyperus hemisphaericus*** Boeckeler

syn.: *Cyp. hemisphaericus* var. *gregorii* (C. B. Clarke) Kük., and var. *longibracteatus* Kük.; *Cyp. hildebrandtii* Boeckeler; *Mariscus gregorii* C. B. Clarke

Perennial tussocky herb with a short creeping rhizome; culms tufted, 0,15−1,15 m long, 2−9 mm ∅, trigonous, sometimes almost rounded, with longitudinal grooves, glabrous; leaves many, crowded at base, 0,1−1,3 m long; sheath dark purple at base, (pale) brown higher up, 3,5−10 cm long; blade 0,15−1,25 m long, 0,6−1,3 cm wide, primary vein and margin scabrid, apex acuminate; inflorescence a simple anthela, sometimes much congested to almost capitate with primary branches 0−9 cm long; spikelets lanceolate, sessile at end of primary branches, 12 to many per spike, each 0,9−1,6 cm × 1,3−2,2 mm.

Open grassland; *Brachystegia* woodland; wooded grassland; 0−1850 m alt.

Madagascar.

Uncertain in S Somalia (S1, S3); specimens young and poor; identification tentative.

M. hirtellus Chiov.; Fl. Trop. E. Afr., Cyper.: 226, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 210, 1983.

syn.: ***Cyperus hirtellus*** (Chiov.) Kük.; *Mariscus rhodesicus* Podlech

Perennial herb with stolons to 12 cm long, *1−2 mm* ∅, covered by pale brown or greyish scales; culms slightly swollen at base, few, 14−60 cm long, 1,6−4 mm ∅, trigonous, hairy at least above; leaf sheaths grey or brown, 3−10 cm long; blade linear, 16−41 cm × 3−7mm, *hairy*, apex acuminate; inflorescence a simple anthela with primary branches 2−8, 0,5−10 cm long; spikelets in spikes 1,2−2,2 cm long that are sessile and at end of primary branches; spikelets many per cluster, spreading, ± lanceolate, 7−13 × 0,7−1,5 mm, rhachis straight.

Open bushland and woodland; sandy loamy soils; 900−2900 m alt.

M. impubes (Steud.) Napper (var. i*mpubes*); Fl. Trop. E. Afr., Cyper.: 240−241, 2010 (under *Cyperus*). – Icon.: Miss. Biol. Paese Borana, Racc. Bot., Angiosp.-Gymnosp. 4: 297, 1939 (Chiovenda & Cufodontis); Haines & Lye, Sedges & rushes E. Afr.: 209, 1983 (under *Cyperus*); Fl. Eth. & Eritrea 6: 458, 1997 (idem).

bas.: ***Cyperus impubes*** Steud. [*excl.* var. *rohlfsii* (Boeckeler) Kük. = *Mariscus rohlfsii*].

syn.: *Cyp. quadriflorus* Boeckeler; *Cyp. impubes var. brevispiculosus* Kük.; *Mariscus procerus* A. Rich. 1850, non Schrad. ex Nees 1842 nec (J. R. Forst. & G. Forst.) Kuntze 1891; *M. richardii* Steud.; *M. cupreus* Hochst. ex Boeckeler; *M. moniliferus* Chiov.

Perennial herb with culms clustered or slightly spaced from a thick horizontal rhizome; culms trigonous, 40−80 cm long, 1,5−3 mm ∅, glabrous; leaf sheaths 2−10 cm long, pale reddish-brown; blade 10−50 cm long, 3−7 mm wide, margins and midrib scabrid, apex acute to acuminate; inflorescence simple, with 1 sessile and 5−9 stalked spikes, stalks to 5 cm long; spikes cylindric, *1,2−5,5* × 0,7−1,7 cm, with *many* densely set *spikelets*; these spreading, linear-lanceolate, *5−9* × 1−1,3 mm; glumes reddish.

Stream sides; forest clearings and -margins; secondary vegetation derived from forest; rocky sites; 1350−2250 m alt.

Soqotra – Cited from "Somalia", probably "Gara Mulata" in Ethiopia (9°05'N × 41°45'E).

Cyperus impubes Steud. var. **fallax** (Cherm.) Kük. [bas.: *Mariscus fallax* Cherm.; syn.: *M. fallax* var. *major* Cherm.; *Cyp. impubes* fa. *major* (Cherm.) Kük.] in Madagascar; *Cyp. impubes* var. **viguieri** (Cherm.) Kük. [bas.: *Mariscus viguieri* Cherm. and var. *contractus* Cherm.] in Madagascar, Mauritius.

Mariscus procerus A. Rich. 1850 is included in this species by Kükenthal, and also here by us. In Flora of Tropical East Africa, Cyperaceae: 234, 2010, this name is cited (erroneously ?) as a synonym of *Cyperus procerus* Rottb. 1773.

(***M. indecorus*** (Kunth) Podlech var. ***indecorus***); Kükenthal in Engler, Pflanzenreich IV. 20/101: 543, 1936; Gordon-Gray, Cyper. Natal: 131, 1995.

bas.: ***Cyperus indecorus*** Kunth 1837.

syn.: *Cyp. luzuliformis* Boeckeler; *Mariscus luzuliformis* (Boeckeler) C. B. Clarke; *M. albomarginatus* C. B. Clarke 1902 (Fl. Trop. Afr. 8: 388, 1902).

Perennial herb with short rhizome; culms 30−45 cm tall, trigonous, thickened at base in an ovate-oblong pseudobulb; leaves ± as long as culms; sheaths red-brown; blades 2−3 mm wide; inflorescence

a simple anthela with usually *spreading branches*; spikes ovoid, 1−1,5 × 1−1,2 cm; *spikelets loosely packed*, linear, 6−7 × 1 mm.

A plant from S. Africa, but also cited from Malawi (Buchanan 1432) and Mozambique in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (consulted 2017). – Cf. below under **M. sumatrensis**.

Under *M. albomarginatus* C. B. Clarke (p. 250) we discuss the relationships within the species complex also comprising *M. indecorus* (Kunth) Podlech and *M. rehmannianus* C. B. Clarke. Gordon-Gray (l. c.) tentatively maintained the 3 taxa as distinct entities, stating that *M. indecorus* differs from *M. albomarginatus* "in the arrangement of spikelets on the spikes of the anthelate inflorescence… and in the longer spikelets and glumes … (but there is overlap …)". All these entities have in common a similar reddish pigmentation of the glumes. Gordon-Gray did not uphold varieties within *M. indecorus*.

Under *M. albomarginatus* we treat *M. indecorus* var. i*nflatus* (C. B. Clarke) Podlech and var. *namaquensis* (Kük.) Podlech as synonyms [= ***Cyperus indecorus*** Kunth var. **inflatus** (C. B. Clarke) Kük. and var. **namaquensis** Kük.], plants from S. Africa. However, we exclude ***Cyperus indecorus*** var. ***indecorus***, which we cite as a synonym under **Mariscus sumatrensis** (Retz.) J. Raynal [= ***Cyperus cyperoides*** (L.) Kuntze].

Cyperus indecorus var. *decurvatus* (C. B. Clarke) Kük. – See below under **Mariscus rehmannianus**.

Not mapped by us.

M. karisimbiensis Cherm. 1935; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 251, 1955; Fl. Trop. E. Afr., Cyper.: 184−185, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 221, 1983; Troupin, Fl. Rwanda 4: 463, 1988.

syn.: *M. karisimbiensis* Cherm. ex Staner 1933, nom. nud.; *M. maritimus* C. B. Clarke 1896, non *Cyperus maritimus* Poir. 1806; ***Cyperus karisimbiensis*** (Cherm.) Kük., incl. var. *longinux* (Kük.) Kük.; *Cyp. coloratus* Vahl var. *longinux* Kük.

Perennial tussocky herb; culms slightly swollen at base covered by thin grey to brown leaf sheaths, the oldest sometimes splitting into soft fibres; culms few, 13−46 cm long, 0,8−1,5 mm ∅, trigonous, glabrous; leaves many; sheath grey to brown, 6−11,5 cm long; blade flat, linear, 10−16 cm × 1−2,5 mm, scabrid at least on margin and primary vein, apex acuminate; inflorescence capitate; spikelets in a solitary hemispherical or irregular head, many per head, lanceolate, 4,4−7,3 × 0,8−1,5 mm, 3−6-flowered.

Woodland; clearings; swamps; wet grassland and lawns, often near streams; 1800−3300 m alt.

M. kerstenii (Boeckeler) C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 183−184, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 215, 1983.

bas.: ***Cyperus kerstenii*** Boeckeler

syn.: *Cyp. kerstenii* var. *irregularis* Kük.; *Cyp. vaginatissimus* K. Schum.

Perennial tussocky herb; culms few, with a swollen base, covered by old brown leaf sheaths splitting into fibres; culms 34−78 cm long, 1,8−2,2 mm ∅, trigonous, glabrous; leaf sheath greyish-brown above, dark brown below, 6,5−12 cm long; blade linear, flat, 35−51 × 0,3−1,2 cm, margin and primary vein strongly scabrid, apex acuminate; inflorescence capitate, 1,5−2 cm long, 1−2 cm wide; spikelets lanceolate, 6,2−8 × 1,5−2,1 mm, 2−4-flowered.

Grassland; moorland; bogs; next to streams; 2400−3800 m alt.

M. kitaleensis J.-P. Lebrun & Stork, **nom. nov.** in Candollea 74: 148, 2019 ; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 185, 2010. – Icon.: Nord. J. Bot. 3: 218, 1983 (as *Cyperus kyllingaeformis*); Haines & Lye, Sedges & rushes E. Afr.: 224, 1983 (idem).

bas.: ***Cyperus kyllingiformis*** Lye ("kyllingaeformis"), Nord. J. Bot. 3: 218, 1983; type: Kenya, Kitale, in wooded grassland (*Combretum* savanna), 1400 m alt., 12 May 1953, A. Bogdan 3726 (K holo-; EA iso-).

Perennial herb to 42 cm tall, with a strongly bulbous culm base covered by fibrous remains of old leaf sheaths, 1,5−2,7 cm ∅; culms few, 15−40 cm long, 0,6−2 mm ∅, terete, trigonous above; leaves from the lower 3−10 cm only, to 25,5 cm long; upper sheath greyish, 3−5,5 cm long, very thin; blade linear, 5−20 cm long, 2−3 mm wide, apex acuminate; inflorescence *Kyllinga*-like, capitate, 6−11 mm long, 5−12 mm ∅, consisting of 1 ovate spike or, usually few-many crowded smaller spikes; spikelets ovoid, very variable in size, *falling off entire*, 3−5 mm long, 2−5-flowered.

Wooded grassland; 1400 m alt. Very rare.

Known only from the type collected in 1953. – Thought to be extinct, "as this habitat is under severe pressure" (Fl. Trop. E. Afr., Cyp.: l.c.). The replacement name refers to the collecting site of the type, i.e. Kitale (Kenya).

"Perhaps most similar to *M. amomodorus*".

M. laxiflorus Turrill 1914, non *Cyperus laxiflorus* Poir. 1806; Clarke & Mannheimer, Cyper. Namibia: 92, 74 (map), 1999; Archer & Craven, Cyper. Namibia: 24, 2004; Fl. Trop. E. Afr., Cyper.: 241, 2010 (as *Cyperus turrillii*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 202, 1983 (idem).

syn.: ***Cyperus turrillii*** Kük.; ? *Cyp. pratensis* Boeckeler var. *laxus* C. B. Clarke (Engler, Pflanzenreich IV. 20/101: 467, 1936).

Perennial herb with short creeping rhizome; culms rather crowded, 30−50 cm long, 1−2,1 mm ∅, basal part bulbous (6−8 mm ∅), trigonous, glabrous; leaf sheath grey to pale reddish-brown, only at very base torn into fibres, 4−7,5 cm long; blade flat, linear, 15−31 cm × 2,3−5 mm, scabrid at least along margin, apex acuminate; inflorescence a simple anthela with primary branches 1−5, 1,5−8 cm long; spikelets in loose clusters, sessile and at end of primary branches, 4−15 per cluster, often (or sometimes ?) *reflexed*, linear, 4,7−9,2 × 2,4−3,3 mm, spreading when nutlets mature, *lax-flowered*.

Brachystegia woodland on sand; 800−900 m alt.

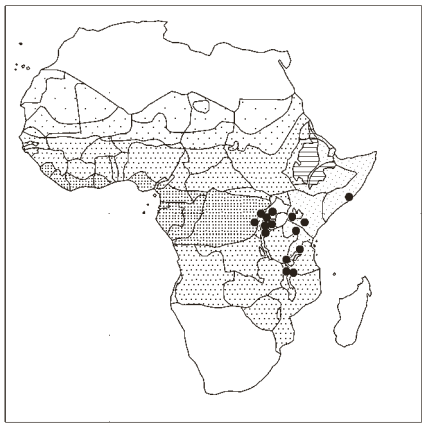
Namibia, Botswana; Zaire ?

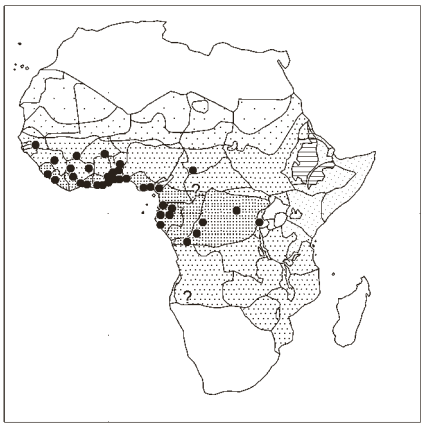
Recognised by its lax-flowered spikelets and by the spikes which have rather few reflexed spikelets.

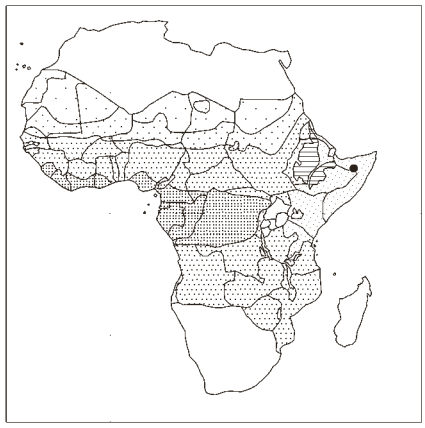
M. ligularis (L.) Urb.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 636, 1985; Simpson & Inglis in Kew Bull. 56: 298, 2001 (under *Cyperus*); Akoègninou & al., Fl. analyt. Bénin: 94, 2006 (idem); Naczi & Ford, Sedges: uses…: 42, 2008 (idem); Lisowski, Fl. Rép. Guinée 1: 405, 2009; Longhi-Wagner & al. in Kew Bull. 65: 457, 2010 (*Cyper. Raddianae*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 225, 2011. – Icon.: Nelmes & Baldwin in Amer. J. Bot. 39: 384, 1952; Lowe & Stanfield, Fl. Nigeria: Sedges: 98, 1974; Berhaut, Fl. ill. Sénégal 9: 276, 1988; Fl. Gabon 44, Cyper.: 58, 2012 (under *Cyperus*); Velayos & al., Fl. Guinea Ecuat. 11: 351, 2014 (idem); Fl. Mascareignes 202, Cyper.: 53, 2018 (idem).

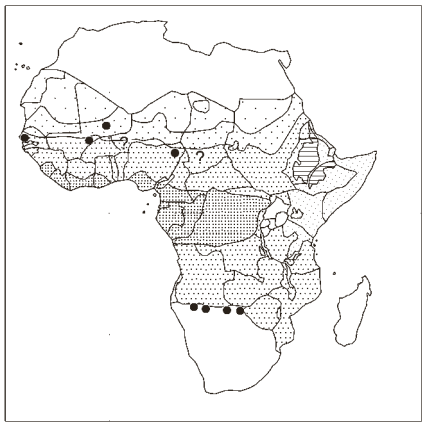
bas.: ***Cyperus ligularis*** L.

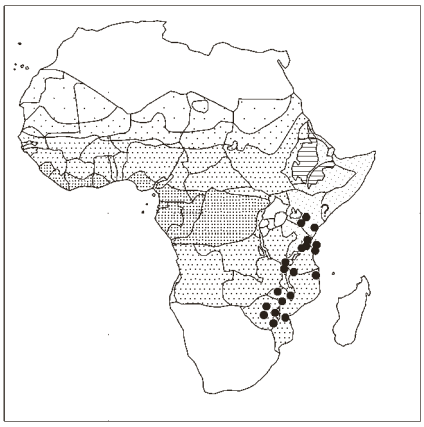
syn.: *Cyperus rufus* Kunth; *Cyp. spicatocapitatus* Steud. ("Steud.") in Jardin, nom. in Nouvelles Annales Marine

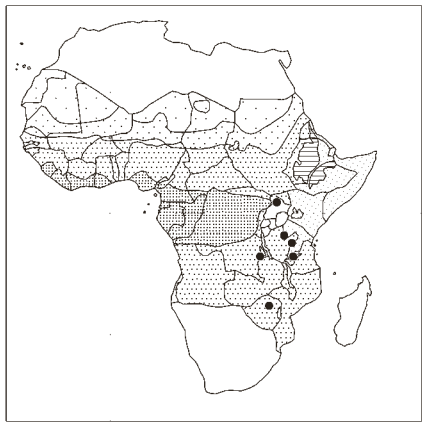

Mariscus ferrugineoviridis

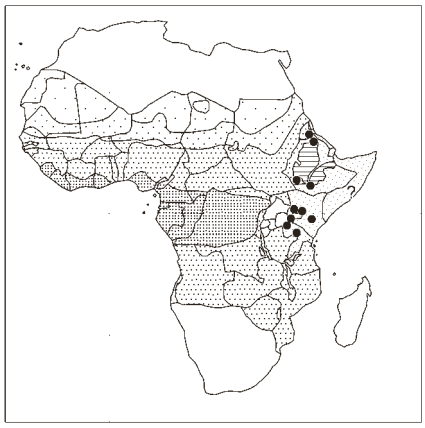

Mariscus flabelliformis

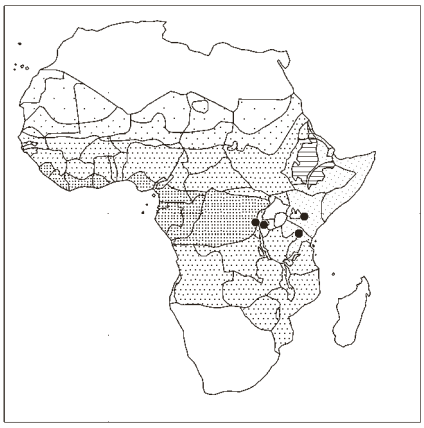

Mariscus gypsophilus

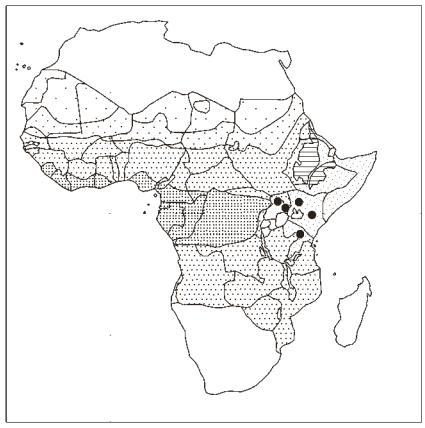

Mariscus hamulosus

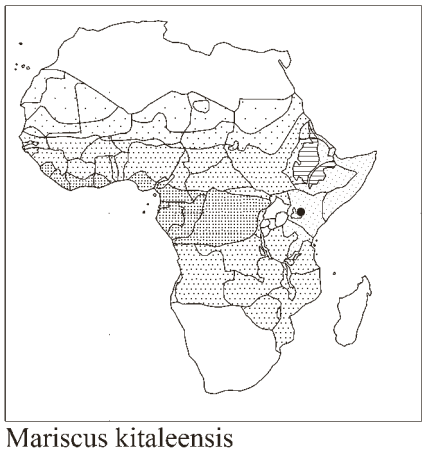

Mariscus hemisphaericus

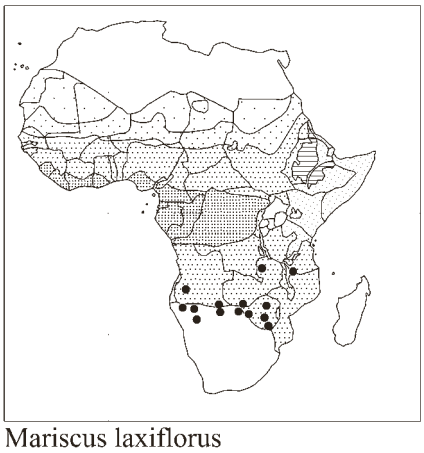

Mariscus hirtellus

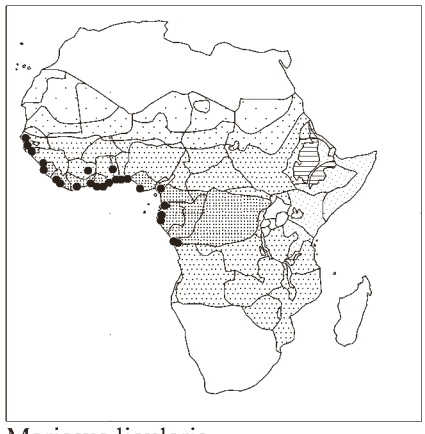

Mariscus impubes


Mariscus karisimbiensis


Mariscus kerstenii


Mariscus kitaleensis


Mariscus laxiflorus


Mariscus ligularis

& Colonies 4: 52, 1850 ! (a copy at G, Library), and Steud., Syn. Pl. Glumac. 2/7: 27, 1854; *Cyp. ligularis* var. *spicatocapitatus* ["(Jardin)"] (Steud.) Kük. 1936; *Cyp. thyrsiflorus* Boeckeler 1869, nom. illeg., non Jungh. ex Schtdl. 1831 (American sp.); *Cyp. rionensis* Boeckeler; *Cyp. sintenisii* Boeckeler; *Cyp. trigonus* Boeckeler; *Cyp. glaucoviridis* Boeckeler; *Mariscus ligularis* var. *spicatocapitatus* ["(Jardin)"] Nelmes 1952; *M. rufus* Kunth, incl. var. *subcapitatus* C. B. Clarke 1895; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. – *Cyperus spicatocapitatus* described by Steudel in 1854, is based on the collection made between 1845 and 1848 by Jardin at Loango, Congo-Brazzaville.

Perennial herb in vigorous tufts; culms 0,3−1,3 m long, 0,3−1,2 cm ∅, obtusely triquetrous towards top, smooth, covered at base with persistent sheaths; leaves basal; blade glaucous green 0,3−1 m long, 0,8−1,5 cm wide, V-folded, margin and primary vein scabrous-denticulate; inflorescence a pseudo-umbel with 5−12 unequal rays (0−1,2 cm long) with one spike or a fascicle of 2−5 dense spikes, mottled yellow-brown and greenish-yellow when young becoming brownish, 1−2,5 × 0,6−1 cm, with many crowded spikelets, reflexed or spreading, 3−8−12 mm long, 3−5-flowered, often galled (gall-fly).

Swamps, marshes; mangrove swamps; brackish water; lagoons; humid hollows in coastal dunes; creek margins; coconut plantations; lakes; isolated or in stands covering several m²; generally near the sea.

Cape Verde islands; Bioko/Fernando Poo, Annobón, Príncipe (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 119, 1899, as *Mariscus rufus*); Mascarenes, Aldabra; tropical and subtropical N. (SE U.S.A., a frequent weed of disturbed sites), C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 267, 2012, under *Cyperus*); West Pacific islands.

Sometimes cultivated as an ornamental. Culms used for making brushes.

"Not tolerant of prolonged cold temperatures".

"Readily identified by its robust caespitose habit, … greyish-green foliage; umbelliform inflorescence of dense oblong-cylindric, often branched spikes; and reddish-brown floral scales" (Naczi & Ford, l.c.).

M. longibracteatus Cherm.

"Extremely variable … The species also offers difficulty because of irregularities in the breaking up of spikelets. This has meant that some phases of the species have been placed in *Cyperus*, others in *Mariscus* – *M. keniensis* (Kük.) S. S. Hooper, based on *Cyperus keniensis* Kük. 306 (1925), the type from Kenya; *M. longibracteatus* Cherm.: 407 (1919b), the type from Madagascar, *M. rubrotinctus* Cherm.: 407, (1919b) the type from Madagascar" (Gordon-Gray, Cyper. Natal: 56, 1995, who placed all these entities under *Cyperus distans* s. l.). [Chermezon, H. (1919b) = in Bull. Mus. Hist. Nat. 25: 405−410.] Flora of Tropical East Africa, Cyper.: 249−250, 2010, follows this concept. In our compilation below we use the name *Mariscus longibracteatus* Cherm.

Readers should be aware of the fact that authors of ("older") floras and flora lists deal with this species complex under two or three names, viz. *Cyperus distans* L. f., and *Mariscus longibracteatus* Cherm., and sometimes *M. keniensis* (Kük.) S. S. Hooper (cf. Fl. W. Trop. Afr., ed. 2, 3/2: 287, 295−296, 1972). The references given below indicate where to find the different entities.

References: Rendle, Cat. Welwitsch's Afric. pl. 2/1: 116, 1899 (*Cyp. distans*); Renier, Fl. Kwango 1: 70 (idem), 72 (*Mar. longibracteatus*), 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 230, 1955 (*Cyp. distans*); Jaeger & Adam, Végét. vascul. Mts Loma 2: 217, (*Cyp. distans*), 225 (*Mar. longibracteatus*), 1981; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 614 (*Cyp. distans*), 636 (*Mar. longibracteatus*), 1985; Thulin, Fl. Somalia 4: 132, 1995 (*Cyp. distans*); Simpson & Inglis in Kew Bull. 56: 290−291 (*Cyp. distans*), 298 (*Cyp. longibracteatus* var. *rubrotinctus*), 2001; Cabezas & al. in Belg. J. Bot. 137: 8, 2004 (*Cyp. distans*); Prasad & Singh, Sedges Karnataka (India): 92−94, 2002 (*Cyp. distans*); Strugnell, Checklist spermat. Mt. Mulanje: 77, 2006 (*Cyp. distans*); Naczi & Ford, Sedges: uses…: 4, 41, 83, 2008 (idem); Lisowski, Fl. Rép. Guinée 1: 396, 2009 (idem); Patil & Prasad in Ind. J. Forestry 32: 447, 2009 (idem); Fl. Trop. E. Afr., Cyper.: 249−250, 2010 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 225, 2011 (*Mar. longibracteatus* & *Mar. rubrotinctus*); Gereau & al., Lake Nyasa florist. checklist: 46, 2012 (*Cyp. distans*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 44, 2012 (*Cyp. distans*), and maps by Schmidt & al. in Phytotaxa 304: 76, 2017; Darbyshire & al., Pl. Sudan & S. Sudan: 105 (*Cyp. distans*), 107 (*Cyp. longibracteatus*), 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 200−201, 1983 (*Cyp. distans*); Berhaut, Fl. ill. Sénégal 9: 186, 1988 (idem); Troupin, Fl. Rwanda 4: 441 (*Cyp. distans*), 463 (*Mar. longibracteatus* var. *longibracteatus*), 1988; Fl. Eth. & Eritrea 6: 455 (*Cyp. distans*), 456 (*Cyp. longibracteatus*), 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 30, 2002 (*Cyp. distans*); Fl. Gabon 44, Cyper.: 51, 2012 (idem); Fl. China, Ill. 23: 316, 2012 (idem); Velayos & al., Fl. Guinea Ecuat. 11: 344, 2014 (idem); Fl. Mascareignes 202, Cyper.: 43, 2018 (idem).

syn.: ***Cyperus distans*** L. f. 1782, non G. Mey. 1818 (= *Torulinium odoratum*), and var. *niger* C. B. Clarke 1894, nom. nud., and 1902, var. *crassispiculosus* R. Gross & Kük., var. *densiflorus* Kük., var. *pseudonutans* Kük., var. *rubrotinctus* (Cherm.) Lye, and subsp. *longibracteatus* (Cherm.) Lye with var. *rubrotinctus* (Cherm.) Lye and var. *niger* (C. B. Clarke) Lye, and fa. *capillarioides* Kük., fa. *pachyanthos* Kük., fa. *pallidior* Kük.; *Cyp. longibracteatus* (Cherm.) Kük., and var. *rubrotinctus* (Cherm.) Kük., var. *subdistans* Kük.; *Cyp. keniensis* ("keniaeensis") Kük.; *Mariscus rubrotinctus* Cherm.; *M. keniensis* (Kük.) S. S. Hooper; *M. longibracteatus* var. *keniensis* (Kük.) Maquet and var. *subdistans* Kük.; *M. bojeri* C. B. Clarke; *Cyp. densiflorus* Hemsl. 1885, non Link 1820 (= *Cyp. imbricatus*) nec G. Mey. 1818 (= *Torulinium odoratum*); *Cyp. purpureovaginatus* Boeckeler; *Cyp. elatus* Rottb. 1773, nom. illeg., non L. 1756 (Asiatic sp.); for further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew. – Note to *Mariscus keniensis* (Kük.) S. S. Hooper: "This taxon shares with *M. longibracteatus* Cherm. the character of shedding both individual glumes and entire spikelets. Both in the possession of caducous glumes and in the number of glumes per spikelet these species approach *Cyperus* and provide one of the arguments against the retention of *Mariscus* as a genus" (S. S. Hooper in Kew Bull. 26: 579, 1972). – For *Cyperus distans* L. f. var. *mucronatus* Berh.: See under **Cyperus congensis** C. B. Clarke, at end of **Mariscus** (p. 275).

Perennial (rarely annual) herb with short thick rhizome; culms tufted, usually set in a row, or solitary, trigonous to triangular, green and shiny, 0,15−1,5 m long, 1,5−5 mm ∅, glabrous, basal part covered with sheaths; leaf sheath grey to dark purple, black on old culms; blade green above, linear, 5−45 × 0,2−1 cm, margin and primary vein scabrid, attenuate; inflorescence a *compound*, *lax*, *umbel-like* anthela to 25 cm ∅, with 5−15 primary branches to 15 cm long, each with 3−5 raylets; secondary and tertiary branches a few (−7) cm long, or spikelets sessile; spikes ovoid, with 8−18 spikelets; spikelets rather laxly set, often at right angles

to axis, brown to pale brown, sometimes tinged with green, linear-oblong, 0,6−2 cm × *0,5−2 mm*; rachilla thin, flexuose, *with wide transparent wing* on two sides.

Forest with *Podocarpus latifolius*, *Olea capensis* subsp. *hochstetteri*, *Syzygium guineense* subsp. *afromontanum* at small brook; streamsides; permanently to seasonally swampy or moist sites in shade; cultivations; dry forest; woodland margins; roadside banks; stream banks in forest; edges of ditches and pools; forest margins; woodland/grassland transition; 0−3300 m alt.

Very variable species – See above.

"Widely distributed in the warmer regions of the whole world" – tropical-subtropical. – Bioko/Fernando Poo, Annobón, Príncipe; S. Africa, Botswana, Swaziland; Comoros, Mauritius, Madagascar, Réunion, Seychelles; S Asia from India, Sri Lanka, E-wards to China, New Guinea, Philippines, Australia; SE U.S.A., C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 263, 2012, as *Cyperus distans*); introduced in Europe, Spain (Verloove & al. in Fl. Medit. 24: 200, 2014). – "… a widespread and locally dangerous or major weed … In the southeastern U.S.A. (despite a recent introduction … field botanists and weed scientists should seek and report additional populations, and appropriate state and federal agencies should undertake eradication measures to ensure early control of this potentially invasive pest" (Verloove: l.c.).

Cyperus congensis C. B. Clarke [syn.: *Cyp. distans* L. f. var. *mucronatus* Berh., nom. invalid.; *Cyp. eleusinoides* Kunth var. *dinklageanus* Kük.] is said to be very near [*Cyp. distans* =] *Mariscus longibracteatus*. See at end of **Mariscus** p. 275 below.

The variants described have gradual differences: shorter or longer involucral bracts, colour of spikelets (more reddish or very dark); they are not enough distinct to warrant an infraspecific rank.

M. luteus (Boeckeler) C. B. Clarke; sometimes figuring as *Mariscus foliosus* C. B. Clarke in floras; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 346, 1955 (as *Cyperus chermezonianus*); Fl. Trop. E. Afr., Cyper.: 171−172, 2010 (as *Cyperus luteus*); Onana, Fl. Cameroun 40: 222, 2013 (as *Cyp. chermezonianus*). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 415, 1936 (as *Cyp luteus*); Haines & Lye, Sedges & rushes E. Afr.: 203−204, 1983 (idem); Troupin, Fl. Rwanda 4: 463, 1988; Fl. Gabon 44, Cyper.: 59, 2012 (as *Cyp. luteus*); Fl. Mascareignes 202, Cyper.: 58, 2018 (idem).

bas.: ***Cyperus luteus*** Boeckeler

syn.: *Cyp. luteus* var. *manongarivensis* (Cherm.) Kük.; *Cyp. chermezonianus* Robyns & Tournay, non *Cyp. chermezonii* Kük. (Madagascar); *Cyp. foliosus* K. Schum. 1895, nom. illeg., non Willd. ex Kunth 1837 (= *Pycreus intactus*); *Mariscus foliosus* C. B. Clarke 1902; *M. manongarivensis* Cherm.

Perennial herb with short creeping rhizome; culms few, with swollen base, 30−80 cm long, 1,6−4,4 mm ∅, trigonous, glabrous; leaf sheath greenish or pale purple above, dark purple below, 3,5−11 cm long; blade linear, flat, 21−49 cm × 2,5−7,3 mm, margin and primary vein scabrid, apex acute to acuminate; inflorescence a simple anthela; primary branches 4−8, 6−15 cm long, inflorescence sometimes more congested and capitate-like, the primary branches to 1 cm long; spikelets in loose clusters, sessile and at end of primary branches, 15 to many per cluster, lanceolate, 1,1−1,7 cm × 1−1,4 mm; glumes long (4−6 mm).

Wet pastures and grassland; woodland; secondary forest; often weed in cultivations; along roads; deforested places; forest clearings; mountain forests; 0−2750 m alt.

Madagascar, Comoros.

(***M. macer*** Kunth) – See below under **M. sumatrensis** (Retz.) J. Raynal

(***M. macrocarpus*** Kunth) – See below under **M. sumatrensis** (Retz.) J. Raynal

M. maderaspatanus (Willd.) Napper; Clarke in Fl. Trop. Afr. 8: 400, 1902; Prasad & Singh, Sedges Karnataka (India): 260−261, 2002; Fl. Trop. E. Afr., Cyper.: 192, 2010. – Icon.: Clarke, Ill. Cyper.: pl. 29/5, 1909 (as *M. squarrosus*); Haines & Lye, Sedges & rushes E. Afr.: 253, 1983.

bas.: ***Cyperus maderaspatanus*** Willd.

syn.: *Mariscus squarrosus* C. B. Clarke in Fl. Trop. Afr. 8: 400, 1902, non (L. 1756) C. B. Clarke 1893 nec *Cyperus squarrosus* L. 1756 (= *M. squarrosus*).

Annual herb to 20 cm tall; culms tufted, crowded, 2,5−20 cm long, 0,5−10 mm ∅, trigonous, glabrous; leaf sheath green to purple, 1−3 cm long; blade linear, 1−10 cm × 0,7−1 mm, scabrid on margin near apex (acuminate); inflorescence a simple anthela; primary branches 1−4, 0,5−1,5 cm long; spikelets in digitate clusters, sessile and at end of primary branches, 3−16 per cluster, flattened, 7,2−9 × 1−1,3 mm, 10−14-flowered.

Grassland; roadsides; near sea-level to 1200 m alt.

India.

M. microbolbos (C. B. Clarke) Vorster, Kew Bull. 42: 200, 1987; Andrews, Flow. pl. Sudan 3: 345, 1956 (under *Cyperus*); Fl. Eth. & Eritrea 6: 452−453, 1997; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015. – Icon.: Boulos, Fl. Egypt 4: 387, 2005.

bas.: ***Cyperus microbolbos*** C. B. Clarke

Perennial glabrous herb with numerous capillary stolons (easily confused with roots) covered by yellowish-brown scales and terminating in a *minute* ovoid *bulb* to 6−8 mm ∅, enclosed in a hard shining dark brown-black coat which splits up into regular valves; culms 5−15 cm long, c. 1 mm ∅ arising from bulbs; leaves 4−5, basal, lower 2 with blades 8−15 × 0,8−0,1 cm; sheaths papery, almost entirely buried in the sand; inflorescence compact, of 1 sessile spike 1−1,2 × 0,5−1 cm with 3−8−13 spreading red-brown oblong spikelets; these compressed, 0,3−2,5 cm × 1−2(−4) mm, 5−8(−40-)flowered.

Coastal sand, forming a flush; probably near sea-level to 1200 m alt.

Egypt (Gebel Elba).

M. micromedusaeus (Lye) J.-P. Lebrun & Stork **comb. nov.** in Candollea 74: 149, 2019; Thulin, Fl. Somalia 4: 134, 135 (fig.), 136, 1995 (under *Cyperus*; English description only); Lye in Biol. Skr. 54: 204, 2001 (under *Cyperus*). – Icon.: Lye in Nord. J. Bot. 16: 373, 374 (map), 1996.

bas.: ***Cyperus micromedusaeus*** Lye in Nord. J. Bot. 16: 373, 1996. Type: P. R. O. Bally & R. Melville 15547 (K, holo-); Somalia, Nugaal region, gorge of Wadi Nogal, 5 km from Eil; 4 January 1973 (7°N × 49°E).

Perennial or perhaps sometimes annual herb; culms 2−8 cm long, 0,5−0,8 mm ∅, obtusely triangular or with 1 flat and 1 concave side, glabrous with shallow longitudinal ridges; leaves all basal; sheaths light brown to purplish with wide translucent margins, glabrous, densely crowded and forming a 1−15 cm long, 3−5 mm thick narrowly ovate cylinder or pseudobulb; blades probably 1−2 cm long, 0,2−0,5 mm wide; inflorescence a solitary terminal

group of 2−6 sessile erect or spreading spikelets; these linear, 0,6−2 cm × 2−2,5 mm, 10−50-flowered.

Small solution holes in limestone pavement with very little soil in *Acacia*, *Commiphora*, *Adenia ballyi* association; 50−150 m alt.

Only known from the type collected in 1973.

M. myrmecias (Ridl.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 120−121, 1899; Figueiredo & Smith, Pl. Angola: 179, 2008 (under *Cyperus*).

bas.: ***Cyperus myrmecias*** Ridl.

(Densely) caespitose herb with rhizome; culms ± 30 cm tall, 3-angled, striate; leaves numerous, broadly linear, c. 15 cm long, main nerve scabrous, tip acuminate, base purplish; inflorescence an anthela with 9−10 rays of unequal length; spikes ovoid-sub-cylindric, c. 2 cm long, 1 cm wide, with 40 spikelets, sometimes sub-compound at base, when ripe dusky green; spikelets in fruit spreading, terete.

On sandy ant-hills in wooded meadows; among herbage in the clearer mixed woods.

M. nyasensis Podlech; Fl. Trop. E. Afr., Cyper.: 155−156, 2010 (as *Cyperus nyassensis*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 211, 1983.

syn.: ***Cyperus nyasensis*** (Podlech) Lye ("nyassensis").

Perennial tussocky herb with very short rhizome (or without rhizome ?); culms many, tufted, 14−34 cm long, 1−1,3 mm ∅, trigonous to ± terete, hairy sometimes only in upper part, base succulent; leaf sheath greyish to pale brown, 3,5−8 cm long, hairy, covering culm base; blade linear, 8−20 × 0,1−0,3 cm, villous beneath, apex acuminate; inflorescence capitate with 3−6 sessile cylindric dense spikes (6−12 × 6 mm) per head, each with 20−44 spikelets; these linear-lanceolate, c. 3 × 0,5 mm.

Rock crevices; on shallow soil over rock; 1650−2100 m alt.

M. ossicaulis (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 148, 2019; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 135, 1995 (English description only); Lye in Kew Bull. 51: 206−207 (achene), 1996.

bas.: ***Cyperus ossicaulis*** Lye, Kew Bull. 51: 205, 1996. Type: Somalia (C1), 20 km W of Xarardheere, 4°37'N × 47°41'E; Beckett 202, 10 June 1979 (K, holo-).

Perennial herb without apparent rhizome but with aggregated woody culm bases; culms 25−35 cm long, 0,6−1,5 mm ∅, terete or slightly angular with many longitudinal ridges, glabrous, yellowish below, green above; leaves from lower 7 cm only; old basal sheaths whitish, numerous, crowded and forming a bone-like cylinder; blades filiform, 10−20 cm × 0,3−0,5 mm; inflorescence a simple anthela 4−8 × 2−7 cm, usually with 8−15 spreading or reflexed spikelets from a c. 1 cm long axis, rarely depauperate anthelas contain 2−5 spikelets only; spikelets linear, 1,5−4 cm × 3−4 mm, mostly with acute apex, mostly 20−35-flowered.

Regenerating field on stabilized sand dunes; 340−350 m alt.

Only known from the type collected in 1979.

(**M. owanii** (Boeckeler) C. B. Clarke). – See under **M. solidus** below. – Kükenthal in Engler, Pflanzenreich IV. 20/101: 432, 1936; Gordon-Gray, Cyper. Natal: 132, 1995; Simpson & Inglis in Kew Bull. 56: 302, 2001 (under *Cyperus*). – Icon.: Gordon-Gray, o.c.: 127 (fig. 52/I, L).

bas.: ***Cyperus owanii*** Boeckeler 1878, non *Mariscus owanii* C. B. Clarke 1897/1898.

syn.: *Cyp. owanii* var. *rogersii* Kük.; *Cyp. umbilensis* (C. B. Clarke ex W. Watson) Boeckeler ex Kuntze; *Mariscus umbilensis* C. B. Clarke ex W. Watson; *M. bolusii* C. B. Clarke 1894, nom. invalid.

Closely related to *M. solidus* (Kunth) Vorster, and according to Vorster segregated from that species by its *vertical rhizome* (horizontal in *M. solidus*). "Not only is this criterion often impossible to apply, since rhizomes are difficult to dig out and consequently seldom represented in herbaria, but when available, are not always entirely convincing. (Is the variation perhaps dependent upon soil textures and other edaphic conditions, as well as seasonal variations ?). The differences separating *M. owanii* from *M. grantii* [C. B. Clarke] are also not adequately divisive. It is acknowledged that *M. owanii* and *M. grantii* occupy habitats different from grassland glades favoured by *M. solidus*. They are plants of shaded situations … It is also accepted that they have a facies slightly different from that representative of *M. solidus* (clear green leaves, as well as other small differences). Despite these differences, identification is not always possible, except arbitrarily" (Gordon-Gray, o.c.: 134).

We follow Gordon-Gray's concept in including *M. owanii* in *M. solidus*.

According to Kükenthal (l.c.) *M. owanii* is collected from S-most Mozambique, Lourenço Marques (T. Borle n. 11454).

S. Africa. – Not mapped by us separately, i.e. with *M. solidus*.

(**M. paolii** Chiov., nom. altern. in Annali Bot. Roma 13: 373, 1915; under *Cyperus paolii* Chiov.); Thulin, Fl. Somalia 4: 139, 1995 (under *Cyperus*); Fl. Eth. & Eritrea 6: 468, 1997 [as synonym under *Cyp. mollipes* (C. B. Clarke) K. Schum. = *Mariscus amomodorus*].

syn.: *Cyperus paolii* Chiov.; *Mariscus amomodorus* (K. Schum.) Cufod. var. *paolii* (Chiov.) Cufod.; *Cyp. mollipes* (C. B. Clarke) K. Schum. var. *paolii* (Chiov.) Kük.

Tussocky perennial herb; culms few or many, 15−45 cm long, 1−2 mm ∅, triangular, glabrous, bases swollen and covered with sheaths that break up into numerous tough brown or blackish fibres; blades 10−30 cm long, 1,5−3 mm wide, flat, scabrid at least on margins; young sheaths pale brown and sometimes transparent; inflorescence a white (somewhat brownish as dry) head hemispherical or irregular in outline, 1−1,8 cm ∅, consisting of 30−50 crowded sessile spikelets; these 5−8 × 2−3 mm, ovate-elliptic, 5−8-flowered.

Seasonally wet grassland; wooded grassland.

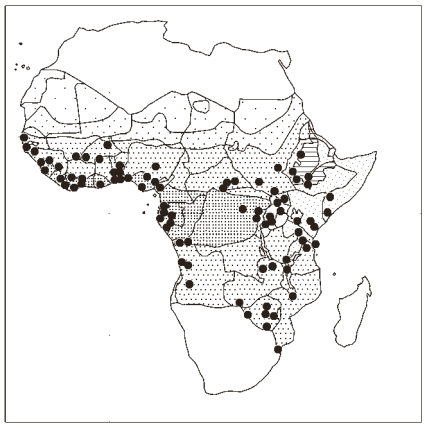
S Somalia (S2, S3). – Not mapped by us.

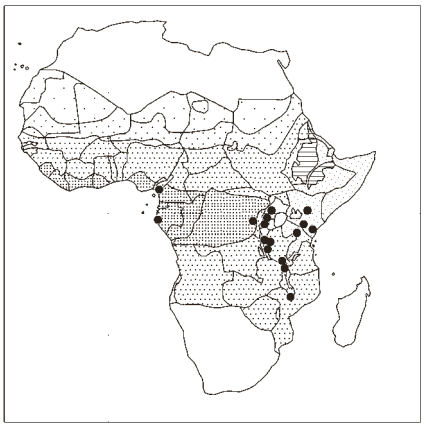
Identity uncertain: mature nutlet unknown. "It is probably either the same as *C.* [*Cyperus*] *submacropus* Kük. (in which case *C. paolii* is the correct name) or *C. firmipes* (C. B. Clarke) Kük. (which then will be the correct name)" (Fl. Somalia, l.c.). – Perhaps a synonym of *Mariscus amomodorus*.

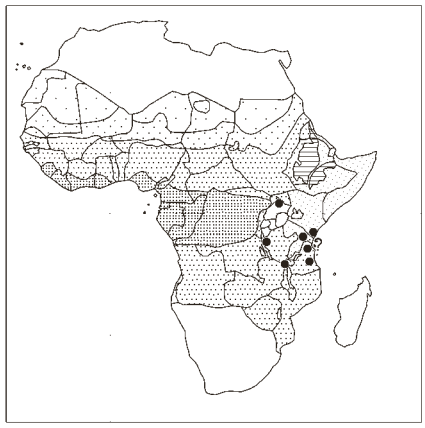
M. perrieri Cherm.; Fl. Trop. E. Afr., Cyper.: 222, 2010.

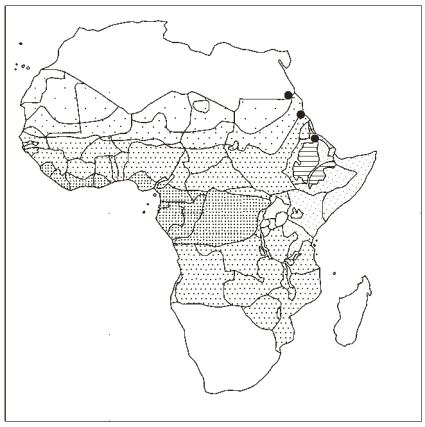
syn.: ***Cyperus perrieri*** (Cherm.) Hoenselaar; *Cyp. pseudovestitus* (C. B. Clarke) Kük. var. *perrieri* (Cherm.) Kük., and fa. *angustifolius* (Cherm.) Kük., and var. *astrocephalus* A. Peter ex Kük.; *Mariscus goniobolbus* Cherm. var. *angustifolius* Cherm., and var. *perrieri* (Cherm.) Cherm.

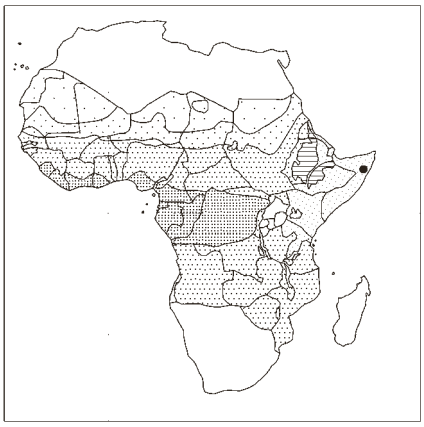
Perennial herb; culms densely tufted, 11−35 cm long, c. 1 mm ∅, trigonous, glabrous, base surrounded by many fibres; leaf sheaths brownish, 3,5−6 cm long, turning fibrous; blades linear, 6−16 cm × 0,5−2 mm, margins scabrid, apex acute to acuminate; inflorescence a simple anthela, with primary branches 1−2,

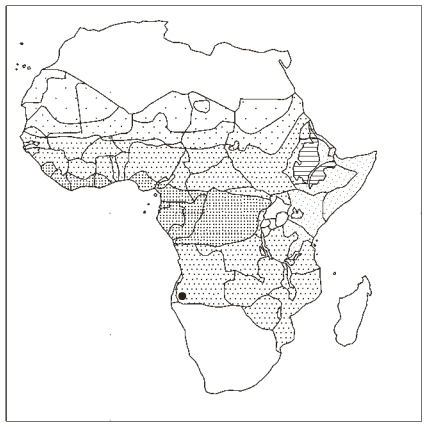

Mariscus longibracteatus

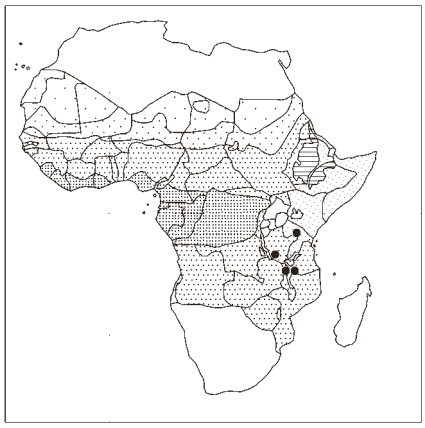

Mariscus luteus

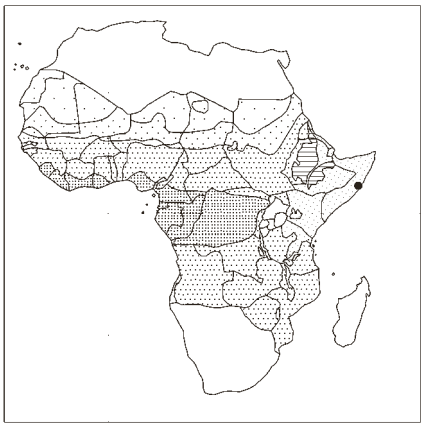

Mariscus maderaspatanus

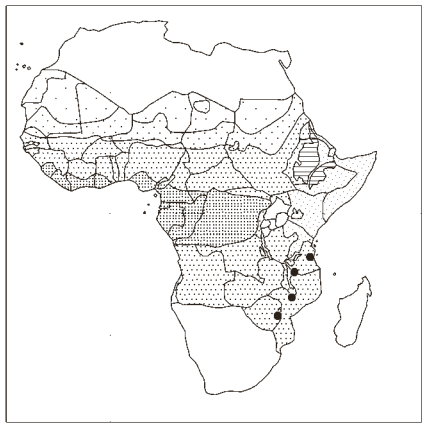

Mariscus microbolbos

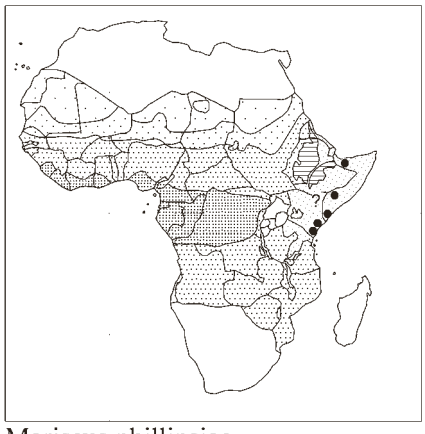

Mariscus micromedusaeus

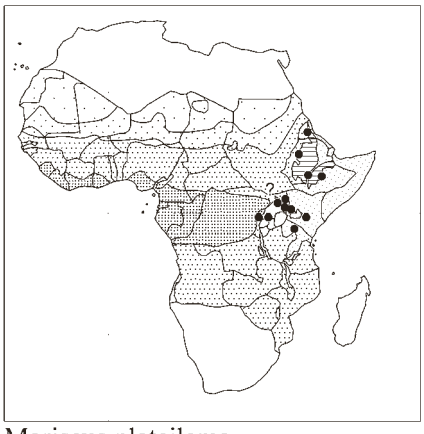

Mariscus myrmecias

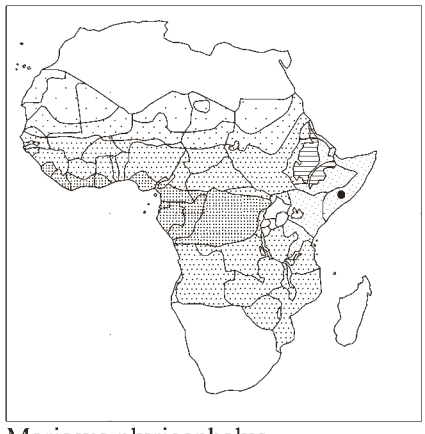

Mariscus nyasensis


Mariscus ossicaulis


Mariscus perrieri


Mariscus phillipsiae


Mariscus plateilema


Mariscus pluricephalus

1−2,7 cm long, or sometimes capitate; spikes ovoid, sessile or at end of primary branches; spikelets 3−12 per spike, ovoid, 4,3−7 × 2−3 mm.

Margin of *Brachystegia* woodland with boggy grassland; shallow soil over rock; 300−1050 m alt.

Madagascar.

M. phillipsiae C. B. Clarke; Thulin, Fl. Somalia 4: 137−138, 1995 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 178, 2010 (idem). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 210, 1983 (idem).

syn.: ***Cyperus phillipsiae*** (C. B. Clarke) Kük.

Perennial herb without rhizome; culms fleshy at base, 20−50 cm long, 1,2−3 mm ∅, trigonous, lower part covered by wide greyish-white glabrous papery leaf sheaths 3−10,5 cm long; blade flat, linear, 22−35 cm × 3,2−5,6 mm, margin strongly scabrid, apex acuminate; inflorescence capitate or a simple anthela, primary branches 0−6, 0,5−4 cm long; spikelets in dense spikes, these 1−1,5 cm long, sessile and at end of primary branches; spikelets lanceolate, 4−7 × 1−1,3 mm.

Sandy soil near shore; wooded grassland; old cultivations; forest glades; bushland; savanna; 0−750 m alt.

(**M. pilosulus** C. B. Clarke 1901) – See at end of **Mariscus**, p. 276.

syn.: *M. pilosulus* C. B. Clarke 1894, nom. nud.; ***Cyperus pilosulus*** (C. B. Clarke) K. Schum. ex Kük.

M. plateilema Steud.; Chermezon in Bull. Soc. Bot. France 82: 336, 1935 (as *M. bulbocaulis* Hochst.); Fl. Eth. & Eritrea 6: 467, 1997 (under *Cyperus*), excl. syn. *Cyp. circumclusus* (C. B. Clarke) Kük. (bas.: *Mariscus circumclusus* C. B. Clarke = *Mariscus amomodorus*; Fl. Trop. E. Afr., Cyper.: 182−183, 2010, under *Cyperus*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 216, 1983 (*Cyp. plateilema*, *Cyp. crassivaginatus*); Fl. Eth. & Eritrea 6: 467, 1997 (idem).

syn.: ***Cyperus plateilema*** (Steud.) Kük.; *Cyp. atrosanguineus* (Hochst. ex A. Rich.) Steud.; *Cyp. variegatus* Boeckeler var. *atrosanguineus* (Hochst. ex A. Rich.) Boeckeler; *Cyp. bulbocaulis* (Hochst. ex A. Rich.) Boeckeler, incl. var. *atrosanguineus* (Hochst. ex A. Rich.) Kük.; *Cyp. crassivaginatus* Lye; *Mariscus atrosanguineus* Hochst. ex A. Rich.; *M. bulbocaulis* A. Rich.; *M. hochstetteri* Walp.; *M. bulbosus* Steud.; *Kyllinga bulbosa* Steud. 1854, nom. illeg., non J. Koenig ex Vahl 1805 nec P. Beauv. 1805.

Perennial herb; culm base slightly swollen and covered by rather thin to rather thick grey or brown leaf sheaths which only rarely split into fibres; culms tufted, 5−50 cm long, 0,5−1,5 mm ∅, trigonous, glabrous; leaves few to many; sheath 3,2−5,7 cm long; blade linear, 5−15 cm × 1−2,4 mm, scabrid at least on margin and primary vein, apex acuminate; inflorescence capitate, ovoid to hemispherical, 0,7−1 cm long × 0,7−1,5 cm wide; spikelets lanceolate, 3,5−7,3 × 1−2,2 mm.

Combretum savanna, mostly in shade; bare rocky outcrops in *Loudetia arundinacea* grassland with scattered trees, growing near river; grasslands; giant heath zone; roadsides in rain forest; usually in swampy sites or on stream banks; 1800−3650 m alt.

Yemen (Wood, Handbook Yemen flora: 328, 1997).

M. pluricephalus (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 149, 2019; Lye in Biol. Skr; 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 131, 1995 (English description only); Lye in Nord. J. Bot. 16: 370, 371 (map), 1996.

bas.: ***Cyperus pluricephalus*** Lye, Nord. J. Bot. 16: 133, 1996. Type: Somalia, Jalalaksi district, ± 12 km NE of Ceel Baraf, 3°19'N × 45°05'E, 14 December 1987, P. Kuchar 17635 (UPS holo-).

Perennial herb with horizontal woody rhizome c. 5 mm ∅; culms crowded, 60−90 cm long, 1−2 mm ∅, terete, but sometimes obtusely triangular above, with very weak longitudinal ridges, glabrous; leaves from lower 20 cm only; sheaths straw-coloured to, particularly in the lowermost coriaceous ones, bright reddish-brown, glabrous; blades to 30 cm long, 2−4 mm wide, stiff and coriaceous, margin and midrib minutely scabrid; inflorescence an anthela 4−6 cm wide of 1 sessile spherical group of spikelets and 2−4 stalked globose groups of spikelets; each capitulum 0,9−1,6 cm ∅, consisting of 20−50 spikelets; peduncles 2−4 cm long, somewhat flattened, glabrous; rhachis of capitula with prominent round cushion-like outgrowths from where the spikelets begin; spikelets ± cylindrical, 5−8 × 1−1,5 mm, 3−4-flowered, with acute apex.

Gently rolling orange sand-hills with *Commiphora*, *Indigofera ruspolii*; 170 m alt.

Only known from the type collected in 1987.

(**M. plurinervosus** Bodard, nom. altern. for **Cyperus plurinervosus** Bodard, Bull. Soc. Bot. France 99: 61, 1952.

See above under **Cyperus conglomeratus** (p. 100), and also Notes under **Cyp. jeminicus** (p. 113) and **Cyp. plurinervosus** (p. 131).

We have seen a photograph of the type specimen at P. It corresponds to **Cyp. jeminicus** Rottb. that we consider a form of **Cyp. conglomeratus** Rottb.

M. pratensis (Boeckeler) Cufod.; Kükenthal in Engler, Pflanzenreich IV. 20/101: 467, 1936; Fl. Eth. & Eritrea 6: 455, 1997.

bas.: ***Cyperus pratensis*** Boeckeler [excl. var. *laxus* C. B. Clarke, Fl. Trop. Afr. 8: 352, 1902 ex descr. (= *Mariscus laxiflorus* Turrill = *Cyperus turrillii* Kük.); cf. Kükenthal, o.c.: 467−468].

Perennial herb with abbreviated moniliform rhizome; culm base corm-like; culm 15−40 cm long, 0,05−0,2 cm ∅, 3-angled, glabrous; leaf blade 5−30 cm long, 0,2−0,5 cm wide, flat, scabrid at least on midrib and margin near the tip; inflorescence of several sessile irregular spikes with or without 1−3 additional stalked spikes on up to 3 cm long peduncles; spikes oblong, 1−1,8 × 0,8 cm, with numerous crowded 4−6-flowered spikelets.

Probably in seasonally wet habitats; 1500−2600 m alt.

M. pseudobrunneus C. B. Clarke ex Cherm.; Kükenthal in Engler, Pflanzenreich IV. 20/101: 435−436, 1936.

syn.: *M. hilsenbergii* C. B. Clarke, nom.; ***Cyperus pseudobrunneus*** (C. B. Clarke ex Cherm.) Kük., incl. var. *continentalis* Kük., var. *hilsenbergii* Kük., and var. *pseudobojeri* Kük.

Perennial herb with short woody rhizome; culms 80 cm tall, strongly sharp-angled, leafy below, base thickened, smooth; leaves nearly as long as culm, 8−10 mm wide, flat, tip long-acuminate, margins denticulate-scabrid; sheaths hard at base, dark brown; inflorescence a compound anthela with 9 rays, rays rigid, obliquely spreading, to 8 cm long, branched at apex; spikes 3−6 with many dense sessile, closely set spikelets, the laterals divergent or reflexed, globose-ovate; spikelets flattened, oblong-lanceolate, 8−10 × c. 2 mm, 8−10-flowered. (Var. *continentalis* in E. Africa with subcapitate anthela with scarely developed rays,

secondary anthelas ("anthelulae") to 3 cm ∅, spikes to 2 cm long, to 12-flowered.)

Edge of primary forest; 2500 m alt.

Madagascar (var. *hilsenbergii*), Comoros (var. *pseudobojeri*); var. *continentalis* from Tanzania, Kilimanjaro (Peter 42075; Schlieben s. n.).

Not figuring in Fl. Trop. E. Afr., Cyperaceae (2010).

M. pseudopilosus C. B. Clarke; Lisowski, Fl. Rép. Guinée 1: 406, 2009 (as *M. socialis*); Fl. Trop. E. Afr., Cyper.: 211, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 225, 2011 (as *M. socialis*); Mesterházy in Lidia 7/5: 103, 2012 (as *Cyperus pseudopilosus*). – Icon.: Traoré in Candollea 36: 448, 1981 (as *Mariscus socialis*); Haines & Lye, Sedges & rushes E. Afr.: 182, 1983 (as *Cyp. socialis*); Fl. Gabon 44, Cyper.: 63, 2012 (as *Cyp. pseudopilosus*).

syn.: ***Cyperus pseudopilosus*** (C. B. Clarke) Govaerts; *Cyp. socialis* C. B. Clarke; *Mariscus socialis* (C. B. Clarke) S. S. Hooper; *M. trinervis* C. B. Clarke, nom. inval.

Perennial herb with thick creeping rhizomes resembling stolons and covered with scales; culms few, 0,9−1,5 m long, 5,5−8 mm ∅, triquetrous, glabrous; leaf sheaths reddish-brown, 6−42 cm long; blade 0; inflorescence a large compound anthela with primary branches 5−8, 3,2−5,5 cm long; spikelets spaced out in an elongated spike, sessile at end of primary branches, 5−40 per cluster, ± linear, 3,3−5,7 × 1,3−1,6 mm.

Shallow pool at shady forest margin; swamp (30−40 cm deep water); swamp forest; lake with *Cyperus papyrus* and ferns; 0 – c. 1200 m alt.

(**M. pseudovestitus** C. B. Clarke), excl. var. *perrieri* (Cherm.) Podlech (= *M. perrieri*).

syn.: ***Cyperus pseudovestitus*** (C. B. Clarke) Kük., incl. var. *polycarpus* Kük.

This plant is endemic in S. Africa and ? Madagascar. – It is not mapped by us in the present work.

Under *Cyperus vestitus*, treated by us above as a synonym of *Mariscus albomarginatus* (p. 250), Flora of Tropical East Africa, Cyperaceae (p. 221, 2010), defined the situation as follows.

"There has been confusion about the taxa *C. obsoletenervosus, C. pseudovestitus* and *C. vestitus* in our area. The types of *pseudovestitus* … in E.P.4, 20 (101): 547 (1936) [= Engler, Pflanzenreich] … have inflorescences much more capitate than nearly all the East African [EA] material …; also the glumes in EA material are longer … with a green keel and an acute (not obtuse) apex … The type of *C. vestitus* is much more like the bulk of our material … with the only exception being in the glume apex … and the width of the pseudobulb … It seems most practical … to use the name *vestitus* for our material … Haines & Lye called *pseudovestitus* very similar to *C. obsoletenervosus* but differing in presence/absence of stolons. Stolons are not visible in most specimens from either South or East Africa".

In our treatment of *Mariscus albomarginatus* above (p. 250) *Cyp. obsoletenervosus* Peter & Kük. is also cited as a synonym of that species. This is also the case with the illustrations of *Cyp. vestitus* and *Cyp. pseudovestitus* by Haines & Lye in Sedges & rushes E. Africa: 212, 1983. In Flora of Ethiopia & Eritrea 1: 265−266, 2009 (incl. fig. 29 of *Cyp. pseudovestitus* p. 266, reproduced from Haines & Lye's publication) the identity of *Cyp. pseudovestitus* in Ethiopia (Sidamo) is discussed. A collection from Sidamo (Friis & al. 2883) formerly identified as *Cyp. obsoletenervosus* Peter & Kük. belongs, in fact, to *Cyp. pseudovestitus*; this should also

be the case with material from N of Tanzania. The determination is based on presence or absence of long and slender stolons: if present plants belong to *Cyp. obsoletenervosus*, and if absent the plants represent *Cyp. pseudovestitus*.

Another feature is discussed by Gordon-Gray (Cyperaceae in Natal: 132−133, 1995), who notes that "there [*Mariscus pseudovestitus*] is close relationship with *M. vestitus* [= *Cyp. vestitus*]. Distinction is most reliably ensured by examination of the glume apices (the midvein not excurrent in *M. pseudovestitus*, but developed into a short mucro in *M. vestitus*)."

M. psilostachys C. B. Clarke 1896, non *Cyperus psilostachys* Steud. 1854 (= *Cyp. distans* L. f. = *Mariscus longibracteatus* Cherm.); Fl. Trop. E. Afr., Cyper.: 223, 2010 (as *Cyperus pluribracteatus*); Gereau, Lake Nyasa florist. checklist: 47, 2012 (idem); Darbyshire & al., Pl. Sudan & S. Sudan: 109, 2015 (idem). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 211, 1983 (as *Cyp. psilostachys*).

syn.: *Cyperus psilostachys* (C. B. Clarke) Kük., nom. illeg., and fa. *glabrescens* Kük., var. *pluribracteatus* Kük., and var. *subrufus* Kük.; ***Cyp. pluribracteatus*** (Kük.) Govaerts

Perennial herb; culms densely crowed in groups of 2−20, rarely solitary at end of a stolon, 35−74 cm long, 1−3 mm ∅, trigonous, hairy at least above with swollen fleshy bases 0,8−1,3 cm ∅; leaf sheaths pale brown to greyish, fleshy, 3−10,5 cm long; blades flat, linear, 14−32 × 2,5−5,5 mm, *hairy*, apex acuminate; inflorescence a simple anthela with primary branches 3−8, 1,2−9,3 cm long; spikes with 20 to many spikelets, sessile and at end of primary branches, 1,3−2,5 cm long, 1,2−1,6 cm wide; spikelets linear-lanceolate, 6−2 × 0,7−1,1 mm; glumes densely hairy.

Dryish grassland; woodland; rocky outcrops; savannas; greens; 0−2100 m alt.

M. pubens (Kük.) Podlech; Fl. Trop. E. Afr., Cyper.: 226−227, 2010 (under *Cyperus*). – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 415, 1936 (idem); Haines & Lye, Sedges & rushes E. Afr.: 203, 1983 (idem).

bas.: ***Cyperus pubens*** Kük.

Perennial herb; culms few, with a swollen base emitting thick scale-covered stolons, 0,3−0,5 cm ∅; culms 31−52 cm long, 1,4−2 mm ∅, trigonous, with short *white densely set hairs* below the inflorescence; leaf sheaths straw-coloured above, purplish-brown below, 3−11 cm long, *densely set* with *white hairs*; blades flat, linear, 24−33 cm × 4,4−7,3 mm, *densely set* with *white hairs*, apex acute; inflorescence a simple anthela, primary branches 4−6, 3−8 cm long; spikelets in loose spikes, rachis of spike *densely set* with *white hairs*, sessile and at end of primary branches; spikelets 7−25 per spike, ± linear, 0,7−1,2 cm × c. 1 mm.

Brachystegia woodland; sandy soil; 900−1150 m alt.

M. recurvispicatus (Lye) J.-P. Lebrun & Stork, **comb. nov.** ; in Candollea 74: 149, 2019; Lye in Biol. Skr. 54: 204, 2001 (under *Cyperus*). – Icon.: Thulin, Fl. Somalia 4: 137, 1995 (English description); Nord. J. Bot. 16: 374 (map), 375, 376 (achene), 1996.

bas.: ***Cyperus recurvispicatus*** Lye, Nord. J. Bot. 16: 376, 1996; type: Somalia, Mudug region, 6°58'N × 48°52'E, J. B. Gillett, C. F. Hemming & R. M. Watson 22100, 27 May 1979 (K holo-).

Tussocky perennial herb with a short woody rhizome; culms crowded, 10−15 cm long, 1−2,5 mm ∅, somewhat compressed to terete or obscurely angular, glabrous; leaves from the lower 1−3 cm only; sheaths medium reddish-brown with very prominent wide white membranous margins; blades to c. 20 cm long,

1,5−2 mm wide, flat but very thick, minutely scabrid along margin, often curled or coiled at apex; inflorescence a lax anthela to 8 × 6 cm consisting of 1 sessile or subsessile group of spikelets and 1−4 stalked digitate groups of spikelets, each group consisting of 3−10 spreading and reflexed spikelets; these linear, 0,8−1,5 cm × 1−1,5 mm, apex acute, 12−16-flowered.

Very open *Acacia*, *Commiphora* bushland; 140 m alt.

Only known from the type collected in 1979.

M. rehmannianus C. B. Clarke 1894, non *Cyperus rehmannianus* (C. B. Clarke) K. Schum. 1898 sine descr. (cf. below), nec (C. B. Clarke) Boeckeler ex Kuntze 1898 (= *Pycreus*), nec *Cyperus rehmannii* Boiss.; Gordon-Gray, Cyper. Natal: 133−134, 1995; Clarke & Mannheimer, Cyper. Namibia: 92, 75 (map), 1999; Archer & Craven, Cyper. Namibia: 20 (under *Cyperus indecorus*), 24, 2004. – Icon.: C. B. Clarke, Illustr. Cyper.: pl. XVIII/4−5, 1909.

syn.: ***Cyperus decurvatus*** (C. B. Clarke) C. Archer & Goetgh.; *Cyp. indecorus* Kunth var. *dinteri* Kük. and var. *decurvatus* (C. B. Clarke) Kük.; *Cyp. rehmannianus* (C. B. Clarke) K. Schum. 1898 sine descr.; *Mariscus vestitus* (Hochst. ex C. Krauss) C. B. Clarke var. *decurvatus* C. B. Clarke; *M. indecorus* (Kunth) Podlech var *dinteri* (Kük.) Podlech; *Cylindrolepis rehmanniana* Boeckeler ex T. Durand & B. D. Jacks. (Index Kew., Suppl. 1: 120, 1902), nom. inval.

Under **Mariscus albomarginatus** above (p. 250) we referred to Gordon-Gray's discussion about the taxonomic status of *M. indecorus* and *M. rehmannianus* within this species complex. Although "the criteria are not reliably divisive" *M. rehmannianus* represents the most distinctive entity, and it is said to be "easily identified". "Shoot bases are developed into pseudobulbs with swelling of leaf sheaths". The inflorescence is characteristic due to the long spikelets (2−5-flowered) and *long recurved glume apices*.

("Dry open areas where there is little competition".) By rocks; 300 m alt.

Namibia, S. Africa, Botswana, Swaziland.

(**M. remotus** C. B. Clarke)

This plant is treated by us above under **Cyperus remotus** (C. B. Clarke) Kük. (p. 135), with a short description.

In Flora of Tropical East Africa, Cyper.: 150, 2010, *Cyp. remotus* figures as a possible synonym of *Cyperus* (*Mariscus*) *boreochrysocephalus* Lye [(Lye) J.-P. Lebrun & Stork].

Mapped with **Mariscus boreochrysocephalu**s (p. 257).

M. rohlfsii (Boeckeler) C. B. Clarke; Fl. Trop. E. Afr., Cyper.: 235, 2010 (under *Cyperus*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 214, 1983 (idem); Fl. Eth. & Eritrea 6: 459, 1997.

bas.: ***Cyperus rohlfsii*** Boeckeler

syn.: *Cyp. impubes* Steud. var. *rohlfsii* (Boeckeler) Kük.; *Cyp. oblongoincrassatus* Kük. var. *clarior* Kük.

Perennial herb with a short rhizome or stoloniferous; culms solitary or several together from thick stolons, 24−72 cm long, 1,7−2,5 mm ∅, trigonous, with longitudinal ridges, glabrous, base swollen to sub-succulent; leaf sheaths whitish-grey to pale brown, pinkish at base, papery, thin, 9−19 cm long; blades linear, flat, 30−60 cm × 3−5,5 mm, scabrid along margin, apex acuminate; inflorescence a simple anthela, primary branches 4−10, 0,5−8 cm long; spikes 2,8−8 cm long, 4−6 mm ∅, sessile and at end of primary branches; spikelets many per spike, linear, 2,3−3,5 × 0,7−1 mm.

Rocky outcrops; thin soil over rock or lava; grassland or scattered tree grassland; bushland; 0−2700 m alt.

The Paoli collection (259) from "Italian Somaliland" is probably situated in NE Ethiopia (Bender Suguma plain; 8°17'N × 44°16'E).

Near *M. taylorii* but differs in: the very narrow spikes, short spikelets, and small glumes (2,2−3 mm long, not 3−3,5 mm).

The type is very immature, it "must be considered a doubtful species. It is perhaps conspecific with *Cyperus impubes*" (Fl. Eth. & Eritrea 6: 458: 1997).

M. schimperi Hochst. ex A. Rich., non *Cyperus schimperi* K. Schum. in Engler, Pflanzenw. Ost-Afrikas 2/3 C: 121, 1895, nec *Cyp. schimperianus* Steud.; Fl. Eth. & Eritrea 6: 465−466, 1997 (as *Cyp. cruentus*); Fl. Trop. E. Afr., Cyper.: 172, 2010 (as *Cyp. neoschimperi*); Darbyshire & al., Pl. Sudan & S. Sudan: 108, 2015 (idem). – Icon.: See Note below (ref. synonyms).

syn.: ***Cyperus cruentus*** Rottb.; *Cyp. globosus* Forssk.; *Cyp. variegatus* Boeckeler 1870, nom. illeg., non Griseb. 1864 nec Kunth 1817; *Cyp. neoschimperi* Kük., incl. var. *viridis* (Hochst. ex Schweinf.) Kük. and var. *subvirens* Peter & Kük.; *Cyp. vexillatus* Peter & Kük.; *Mariscus viridis* Hochst. ex Schweinf.; there is no doubt about syn. *Cyperus pseudovestitus* sensu Haines & Lye, Sedges & rushes E. Afr.: 212, 1983, with fig. 427, non (C. B. Clarke) Kük., cited in Fl. Trop. E. Afr., Cyper.: 172, 2010, as well as a synonym of *Cyp. vestitus* Krauss p. 221 (= *Mariscus albomarginatus* C. B. Clarke; cf. the present work p. 250). As pointed out by Darbyshire & al., l.c., "the taxonomy is rather confused".

Tussocky perennial herb with few to many clustered oblong culm bases (cylindrical pseudobulb) on an obscure rhizome; culms 10−40(−60) cm long, 1−3 mm ∅, 3-angled, glabrous; culm base appearing swollen because of the many withered loose leaf sheaths at lower part of plant; leaf sheaths reddish-brown with wide translucent margin, darker at base, to 12 cm long; blades flat, 5−66 cm long, 1−4 mm wide, margin and midrib scabrid; inflorescence a dense simple anthela, 3-angled to hemispherical, 1−2 cm ∅, with 3−4 spikes sessile or briefly stalked; spikes ovoid, 1−2,5 × 1−2 cm, each consisting of 10−25 crowded spikelets; these ovate, slightly compressed, 4−10 × 1−2,5 mm, 2−6-flowered.

Rocky hill slopes, hill tops; rock crevices; rocky outcrops; on flat rocks; dry grassland, bushland; 500−2400 m alt.

Saudi Arabia, Yemen (Wood, Handbook Yemen fl.: 328, 1997).

As noted above the taxonomy is confused. – Compare under *Mariscus albomarginatus* C. B. Clarke (p. 250).

M. schweinfurthii Chiov.; Fl. Eth. & Eritrea 6: 458−459, 1997; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012.

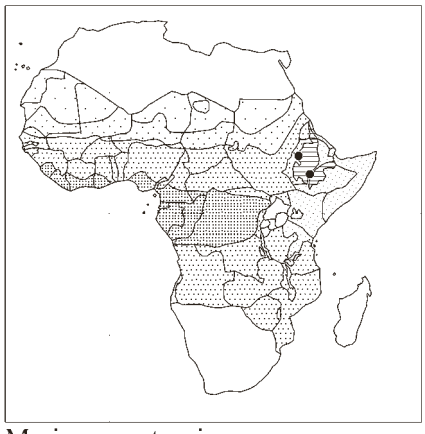
syn.: ***Cyperus schweinfurthii*** (Chiov.) Kük., non *C. schweinfurthiana* Boeckeler

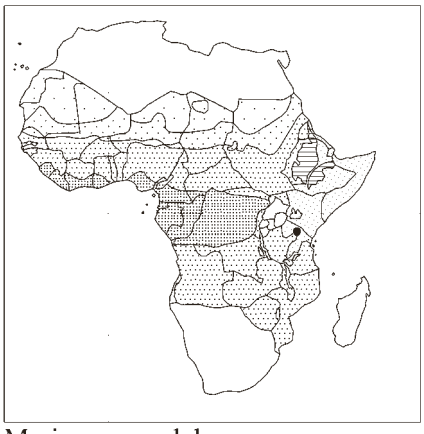
Stoloniferous perennial herb; stolons to 15 cm long, 0,1−0,2 cm ∅, covered by brown to grey scales; culms with a slightly swollen base, 30−50 cm long, 0,15−0,4 cm ∅, 3-angled, glabrous; leaf sheaths grey-white to brown, somewhat fleshy below; blades flat, 10−40 cm long, 3−7 mm wide, scabrid on margin; inflorescence of 1 sessile and 4−8 stalked spikes on 0,5−8 cm long peduncles; spikes 1−3,5 × 0,8−1 cm, with many spreading spikelets; these linear, 3−6 × 0,7−1 mm, 1-flowered.

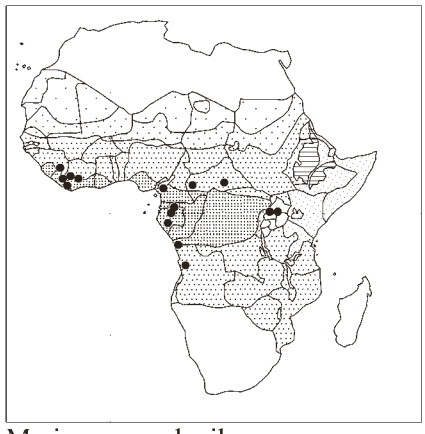
Bushland or grassland; 800−1200 m alt.

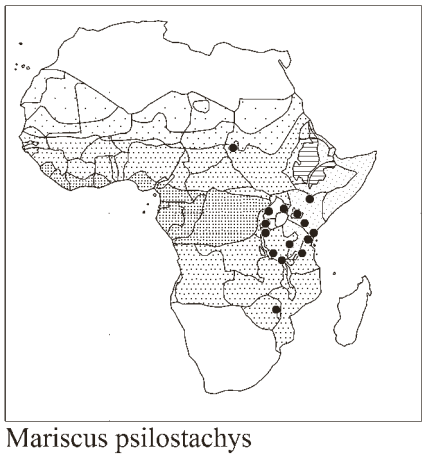
M. scleropodus (Chiov.) Cufod.; Thulin, Fl. Somalia 4: 139, 1995. – Icon.: Chiovenda, Fl. Somala: pl. 38, 1929.

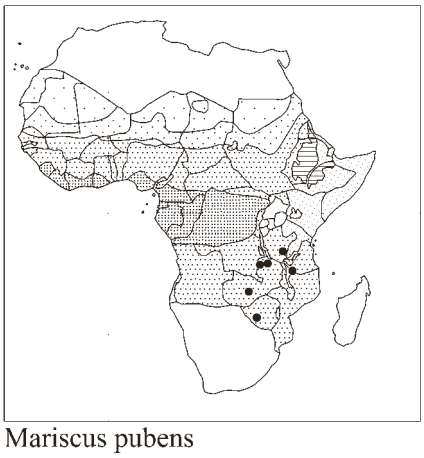
bas.: ***Cyperus scleropodus*** Chiov.

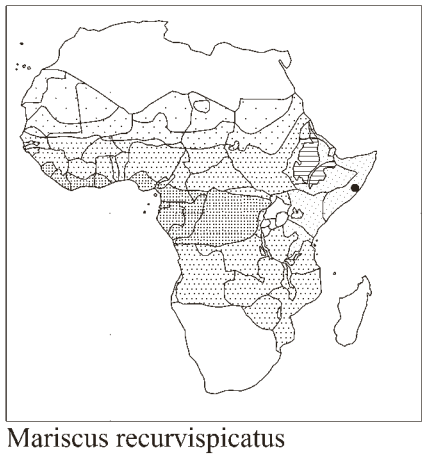

Mariscus pratensis

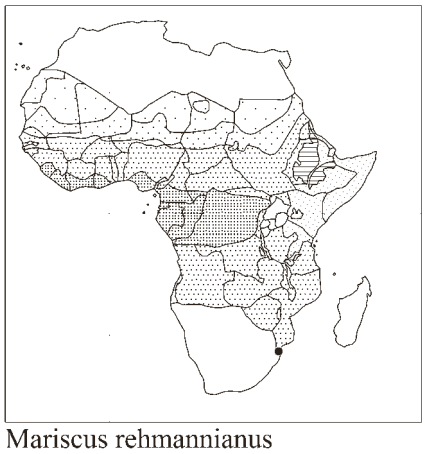

Mariscus pseudobrunneus

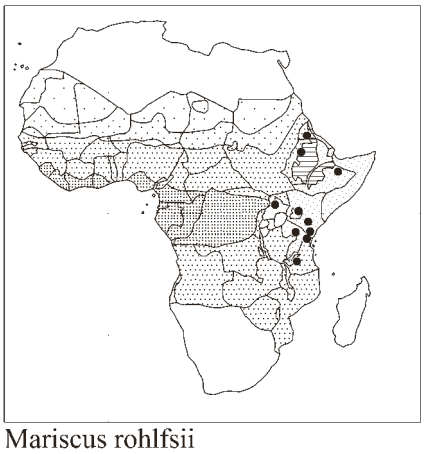

Mariscus pseudopilosus

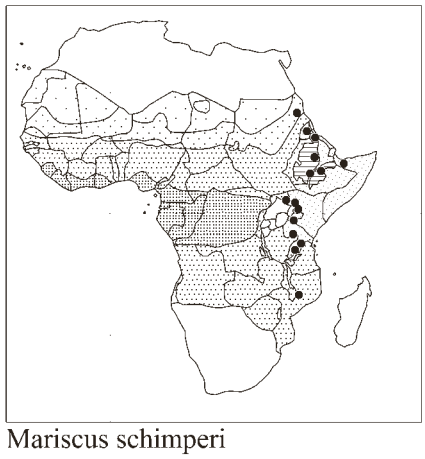

Mariscus psilostachys

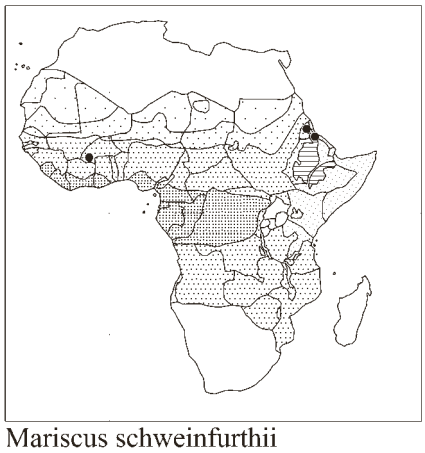

Mariscus pubens

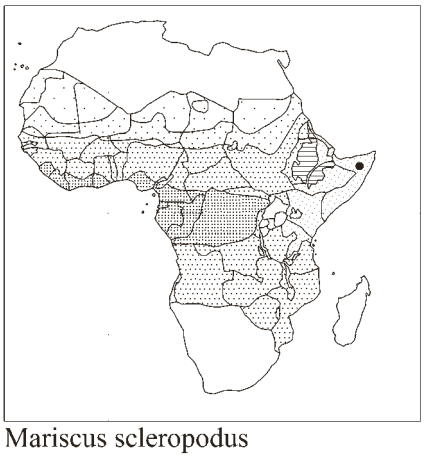

Mariscus recurvispicatus

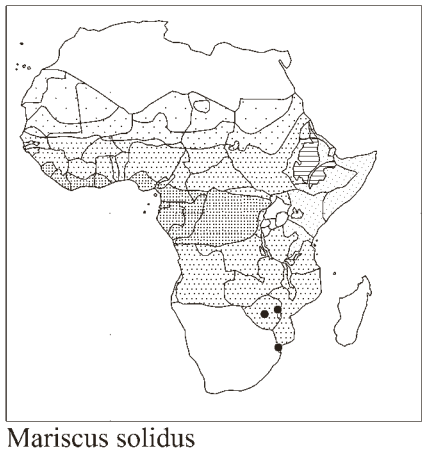

Mariscus rehmannianus


Mariscus rohlfsii


Mariscus schimperi


Mariscus schweinfurthii


Mariscus scleropodus


Mariscus solidus

Densely tussocky perennial herb; culms 5−25 cm long with prominently swollen bases covered by numerous thick dark brown to black leaf sheaths; blades 5−30 cm long, 0,5−1 mm wide, twisted and convolute when dry, margin and midrib minutely scabrid; inflorescence a solitary dirty white head 1−2 cm ∅; spikelets lanceolate, 4−6 × 1,5−2 mm, flattened, 3−5-flowered; nutlet unknown.

Dry mountain region; c. 500 m alt.

The 2 collections known are both immature, and thus the taxonomic status uncertain.

M. solidus (Kunth) Vorster; incl. *M. owanii* (Boeckeler 1878) C. B. Clarke (cf. also above under that species, p. 264), *M. dactyliformis* (Boeckeler) C. B. Clarke (syn. *Cyperus solidus* var. *elatior* Kunth), *M. drakensbergensis* Vorster, and *M. grantii* C. B. Clarke; Gordon-Gray, Cyper. Natal: 134−135, 1995. – Icon.: ibid.: 133 (*M. solidus*, nutlet), 127 (*M. owanii*, idem); Kükenthal in Engler, Pflanzenreich IV. 20/101: 434, 1936 [*Cyperus dactyliformis* var. *elatior* (Kunth) Kük.].

bas.: ***Cyperus solidus*** Kunth

syn.: *Cyp. solidus* var. *elatior* Kunth; *Cyp. dactyliformis* Boeckeler; *Cyp. congestus* Vahl var. α Nees; *Cyp. elatior* (Kunth) Boeckeler; *Mariscus elatior* (Kunth) C. B. Clarke; *M. dactyliformis* (Boeckeler) C. B. Clarke; *M. gueinsii* C. B. Clarke – For synonyms under *Mariscus owanii* (Boeckeler) C. B. Clarke, See above under that species (p. 264). – *Mariscus drakensbergensis* Vorster; *Cyperus drakensbergensis* (Vorster) Govaerts – *Mariscus grantii* C. B. Clarke 1898, non *Cyperus grantii* Boeckeler 1875; *Cyperus vorsteri* K. L. Wilson 1994.

Perennial herb with a massive branched horizontal rhizome clothed in scale leaves that become black and fibrous before wearing away; culms to 1,5 m tall; leaves numerous, up to 1,5 cm wide, rigid, faintly bluish green, margin and abaxial midrib scabrid; inflorescence a robust compound (occasionally simple) anthela with 8−12 rays to 20 cm long; spikes dense, mostly short peduncled bearing closely packed brown spikelets, these 1,2 cm long.

Usually along water courses; seldom in water; 1400−1700 m alt.

S. Africa, Swaziland.

According to Gordon-Gray (l.c.) *Mariscus grantii* C. B. Clarke and *M. owanii* (Boeckeler) C. B. Clarke are closely related if not conspecific with *M. solidus*. To keep them separate, "the criteria applied are neither entirely convincing, nor easily used." The rhizome is said to be vertical in *M. owanii* and *M. grantii*, not horizontal. "This criterion is impossible to apply …". "The differences separating *M. owanii* from *M. grantii* are also not adequately divise … identification is not always possible, except arbitrarily." See also discussion under *M. owanii* above (p. 264).

Our map (p. 269) includes the three entities.

M. drakensbergensis Vorster [syn.: *Cyperus drakensbergensis* (Vorster) Govaerts] was established "to accommodate plants known from only two sites in the Natal Drakensberg" (c. 1800 m alt.). "These differ from *M. solidus* only in their smaller size, vertical rhizome, purple … leaf sheaths and absence of peripheral air canals in main culm".

The World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, consulted in 2017, keeps *Cyperus dactyliformis* Boeckeler, *Cyp. drakensbergensis* (Vorster) Govaerts, *Cyp. owanii* Boeckeler, and *Cyp. vorsteri* K. L. Wilson (= *Mariscus grantii* C. B. Clarke) as separate entities.

M. somalidunensis (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 149, 2019; Lye in Biol. Skr. 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 137, 1995 (English description); Nord. J. Bot. 16: 374 (map) 375, 1996.

bas.: ***Cyperus somalidunensis*** Lye. Type: Somalia, Shabeelaha Dhexe, 1 August 1959, G. Moggi & R. Bavazzano 377 (FT holo-).

Tussocky perennial herb; culms with swollen bases forming a ± regular row (rhizome indistinct), only the 1−2 youngest carrying a culm; culms 5−15 cm tall, 0,7−1 mm ∅, obtusely angular to somewhat compressed, usually scabrid at least on some ridges; leaves many, mostly basal and 2,5 cm up the culms only; leaf sheath reddish-brown to almost black with pale membranous margins and c. 7 prominent nerves that gradually split up into fibres; blades 3−10 cm long, 1−1,5 mm wide, flat, very thick, with prominent teeth along margins, often curved at apex; inflorescence a dense terminal irregular cluster of spikelets to c. 1 cm ∅, consisting of 4−15 croweded sessile spikelets; these ovate-lanceolate, 4−6 × c. 2 mm; apex acute, hardly compressed, 5−9-flowered.

Sandy plain, between consolidated and mobile dunes; below 50 m alt.

Only known from the type collected in 1959.

M. somaliensis C. B. Clarke 1895, non *Cyperus somaliensis* C. B. Clarke 1895; Thulin, Fl. Somalia 4: 133, 1995; Simpson & Inglis in Kew Bull. 56: 304, 2001 (as *Cyperus pseudosomaliensis*).

syn.: ***Cyperus pseudosomaliensis*** Kük.

Tussocky perennial herb with succulent cylindrical to narrow bottle-shaped culm bases covered by membranous pale or light brown sheaths without keeled midrib; culm 3−25 cm long, 0,3−1,5 mm ∅, triangular, glabrous or minutely scabrid; leaves crowded near plant base; blades 2−10 cm long, 0,5−1,5 mm wide, flat but filiform when dry, midrib densely scabrid and the pale narrow marginal border scabrid-dentate; inflorescence of 4−15 crowded sessile spikelets forming a head 1−4 cm ∅; spikelets 0,5−2 cm × 2−3 mm, flat, 10−25-flowered.

Open woodland or scrubland.

Only known from the type.

Very near *M. cundudoensis*.

M. soyauxii (Boeckeler) C. B. Clarke; Simpson & Inglis in Kew Bull. 56: 308, 2001 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 217, 2010 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 207−208, 1983 (*Cyperus soyauxii* subsp. *pallescens*); Berhaut, Fl. ill. Sénégal 9: 278, 1988; Fl. Eth. & Eritrea 1: 265, 2009 (as *Cyp. soyauxii* subsp. "*pallens*" sphalm., for *pallescens*); Fl. Gabon 44, Cyper.: 21, 2012 (as *Cyp. soyauxii*, nutlet; text p. 68).

bas.: ***Cyperus soyauxii*** Boeckeler

Perennial, tussocky herb; root system minute; culms tufted, 10−30 cm tall, 2−5 ∅ at base, c. 1 mm ∅ below inflorescence, trigonous, glabrous; leaf sheath whitish or pale purplish, very thin, 3,5−9 cm long; blade flat, 3−30 cm long, 1,5−3,5 mm wide, scabrid on at least margin near the acuminate apex; inflorescence a simple anthela 2−5 cm ∅ with primary branches 1−5, 0,5−1,5 cm long; spikelets in crowded spikes, c. 1,2 × 0,7 cm, sessile and at end of primary branches, 10−30 per spike, ovoid, 4−6,3 × 1,5−2,2 mm, hardly compressed.

Medium dense *Commiphora* bushland with *Balanites* and occasional larger *Acacia*; ground flora: perennial *Chloris roxburghiana*, *Aristida*, *Dactyloctenium*; disturbed ground; swamps; tree plantations; thickly wooded places; also ruderal; cultivations; fallows; near sea-level –1400 m alt.

MARISCUS SOYAUXII

Comprises 2 subspp: – subsp.**soyauxii**; – subsp. **pallescens** (Lye) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 149, 2019; bas.: *Cyperus soyauxii* Boeckeler subsp. *pallescens* Lye in Nord. J. Bot. 3: 227, 1983; type: Kenya, Garissa Distr., 0°13'S × 39°42'E, alt. 300 m, 14 December 1977, B. Stannard & M. G. Gilbert 1061 (EA holo-, K iso-); in dry grassland among shrubs and smaller trees, 300−850−1400 m alt., in Kenya also in Turkana Distr., and adjacent S. Ethiopia; differs from the typical subspecies by its larger and more open inflorescence and the very pale spikelets (glumes greyish).

M. squarrosus (L. 1756) C. B. Clarke 1893; Pires de Lima in Bol. Soc. Brot., Sér; 2, 2: 129−130, 1923; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 636, 1985; Thulin, Fl. Somalia 4: 125, 1995 (under *Cyperus*); Clarke & Mannheimer, Cyper. Namibia: 93, 75 (map), 1999 (as *Monandrus squarrosus*); Simpson & Inglis in Kew Bull. 56: 308, 2001 (under *Cyperus*); Naczi & Ford, Sedges: uses…: 43, 89, 2008 (idem); Fl. Trop. E. Afr., Cyper.: 216, 2010 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 220, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012 (map by Schmidt & al. in Phytotaxa 304: 142, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 110, 2015 (under *Cyperus*). – Icon.: Lye in Nord. J. Bot. 3: 214, 1983 (under *Cyperus*); Bajpai & al. in Phytomorphology 53: 115, 2003 (nutlet); Berhaut, Fl. ill. Sénégal 9: 279, 1988; Gordon-Gray, Cyper. Natal: 135, 1995 (nutlet); Fl. Eth. & Eritrea 6: 462, 1997 (under *Cyperus)*; Wood, Handbook Yemen flora: 329, 1997; Fl. Pakistan 206, Cyper.: 137, 2001 (under *Cyperus)*; Fl. Gabon 44, Cyper.: 69, 2012 (idem); Fl. China, Ill. 23: 320, 2012 (idem); Verloove in Webbia 69: 208, 2014 (idem).

bas.: ***Cyperus squarrosus*** L.

syn.: *Cyp. squarrosus* L. var. *congestus* Benth., and var. *cylindraceus* Benth., but *excl*. var. *stenocarpus* F. Muell. 1874 (= *Cyp. conglomeratus* subsp. *conglomeratus*); *Cyp. aristatus* Rottb. 1773, nom. superfl., and var. *floribundus* E. G. Camus, var. *perennis* M. E. Jones, var. *semiglobosus* Kük., fa. *inflexus* (Muhl.) C. B. Clarke, and var. *inflexus* (Muhl.) Boeckeler ex Kük.; *Cyp. uncinatus* R. Br. 1810, non Poir. 1806; *Cyp. inflexus* Muhl., incl. var. *acaulis* Hook. f. and var. *elongatus* Hook. f.; *Cyp. aureus* J. Presl & C. Presl 1828, nom. illeg., non Kunth 1816; *Mariscus aristatus* (Rottb.) Cherm. 1938, nom. illeg.; *M. intricatus* (L.) Cufod.; *Pycreus squarrosus* (L.) Nees; *Dichostylis squarrosa* (L.) Palla; *Monandrus squarrosus* (L.) Vorster ined.; for further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb to 40 cm tall, with a minute rootsystem; culms solitary or crowded and tufted, 1−33 cm long, 0,4−3 mm ∅, trigonous, almost glabrous; leaf sheath green to purple, 0,6−4,7 cm long; blade linear, flat, 2−13,5 cm × 1−4 mm, slightly scabrid to glabrous, apex acuminate; inflorescence a simple anthela with primary branches 1−7, 0,5−7 cm long; spikelets in dense golden or reddish spikes, sessile and at end of primary branches; spikelets 6−41 per spike, crowded, linear, 2−7 × 1,5−3 mm, flattened, *squarrose* with long *recurved glume apices* 5−15-flowered.

Grassland; seasonally wet grassland; often on silt near rock pools, streams and roadsides; open ground; open grassy places; boggy hollows overlying rocks; inselbergs (Porembsky & Brown in Candollea 50: 359, 1995); degraded savanna; temporarily inundated sites (Mbayngone & al., Etudes Florist. Vég. Burkina Faso 9: 35−38, 2005); bare soils well drained; arable land, cultivated fields (for a long time, cf. Wittig & Becker in Phytocoenologia 41: 130, 2011); weed in gardens; near sea-level – 2100 m alt.

MARISCUS SQUARROSUS

Pantropical, cosmopolitan, but rare in America. – Cape Verde Isl. (Duarte in Garcia de Orta, Sér. Bot. 15: 56−57, 2002); Namibia, S. Africa, Botswana, Swaziland; Madagascar; SW Asia (Oman, Saudi Arabia, Yemen), S Asia from Pakistan, Afghanistan, India, Sri Lanka, E-wards to Indo-China, Australia; N. America from S Canada S-wards to C. America – S. America (to Argentina, Chile); West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies 281, 2012); naturalised in S Europe (Italy, Po river basin; Croatia; Ardenghi & al. in Phytotaxa 212: 135, 2015; Verloove in Webbia 72: 129, 2017).

Plant with a strong *Aloe* tincture odour.

"Although new taxa have been described and other major nomenclatural changes have occurred, the entire complex has not been studied since Kükenthal (1935−1936). A systematic review worldwide … is needed" (Naczi & Ford, o.c.: 43).

(**M. stolonifer** C. B. Clarke, non *Cyperus stolonifer* Retz.); Kükenthal in Engler, Pflanzenreich IV. 20/101: 557, 1936 (as *Cyperus chevalieri*).

syn.: ***Cyperus chevalieri*** Kük.

Herb with a short rhizome and 1−4 elongated stolons; culms 13−14 cm tall, trigonous, smooth, grooved, base thickened and covered with black fibrous sheaths; leaves ± as long as culms, 3 mm wide, sheaths scarious-membranous; inflorescence a contracted-capitate hemispherical anthela, 10−14 cm ∅; spikes clustered; spikelets numerous, ovate-lanceolate, acute, ± compressed, 5 × 4 mm, 4−5-flowered.

Swampy clayey soil.

Known from the type (A. Chevalier 9448) collected in 1903: Chad, Baguirmi, Nigui, at Bahr Erguig, and Fotius 1551.

Taxonomic status uncertain; near *M. scleropodus* (Chiov.) Cufod. (= *Cyperus scleropodus* Chiov.). – Not mapped.

M. stramineoferrugineus (Kük.) Napper; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 183, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 217, 1983.

bas.: ***Cyperus stramineoferrugineus*** Kük.

Perennial tussocky herb; culm bases covered by fibrous remains of old leaf sheaths; culms few, 10−15 cm tall, 0,5−1 mm ∅, trigonous to somewhat compressed; leaf sheath 2−4 cm long; blade linear, 5−15 cm × 0,3−1 mm, apex acuminate; inflorescence capitate, 4−6 mm long, × 6−8 mm wide; spikelets 9−12 per head, ovoid, 3−6,2 × 1,2−2,1 mm.

Grassland; 430−1200 m alt.

Only known from two syntypes (Peter 31807, 32426), collected in 1925.

M. sumatrensis (Retz.) J. Raynal, Adansonia, N. S. 15: 110−111, 1975, syn.: *M. sumatrensis* (Retz.) T. Koyama, Gard. Bull. Singapore 30: 154, 1977, nom. superfl. (cf. Vorster in Bothalia 12: 634−635, 1979). – We treat this species in a wide sense, i. e., under ***Mariscus*** [incl. ***Cyperus cyperoi*des** (L.) Kuntze, ***Cyp. cylindrostachyus*** Boeckeler, ***Cyp. subumbellatus*** Kük., and ***Cyp. macrocarpus*** (Kunth) Boeckeler (cf. also under Synonyms below)].

References: Renier, Fl. Kwango 1: 72, 1948 (as *Mariscus macrocarpus*, *M. sieberianus*, "*M. umbellatus* Vahl"); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 248 (*Cyp. cyperioides*), 249 (*Cyp. macrocarpus* var. *kraussii*), 250 (*Cyp. sublimis* var. *subglobosus*), 1955; Podlech in Mitt. Bot. Staatssamml. München 4: 113, 1961 (*Mariscus macer*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 635, 1985 (*Mariscus alternifolius* Vahl); Gordon-Gray,

Cyper. Natal: 132 (*Mariscus macer*, *Mar. macrocarpus*), 135−136 (*Mar. sumatrensis*), 1995; Cable & Cheek, Pl. Mt Cameroon: 155, 1998 (*Cyp. subumbellatus*); Simpson & Inglis in Kew Bull. 56: 289 (*Cyp. cyperoides*), 309 (*Cyp. subumbellatus*), 2001; Archer & Craven, Cyper. Namibia: 20, 2004 (*Cyp. cyperoides*, doubtfully present); Cabezas & al. in Belg. J. Bot. 137: 7, 2004 (*Cyp. cyperoides*); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010 (*Mariscus cylindristachyus*); Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 221, 2011 (*Cyp. cylindrostachyus*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 221 (*Cyp. cyperoides*), 225 (*Mariscus cylindrostachyus*), 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012 (maps by Schmidt & al. in Phytotaxa 304: 142, 143, 2017; as *Mariscus cylindrostachyus*, *M. sumatrensis*); Gereau & al., Lake Nyasa florist. checklist: 46, 2012 (*Cyp. cyperoides*); Velayos & al. in Phytotaxa 171: 18, 2014 (*Cyp. cyperoides*); Darbyshire & al., Pl. Sudan & S. Sudan: 105 (*Cyp. cyperoides*), 107 (*Cyp. macrocarpus*), 110 (*Cyp. subumbellatus*), 2015. – Icon.: Clarke, Ill. Cyper.: pl. 23 / 5−6, 1909 (as *Mariscus sieberianus*); Busson, Pl. aliment. Ouest afric.: 443, 1965 (as *Mariscus umbellatus*); Adam, Fl. descr. Mts Nimba 6: 2141 pl. 1044/4−8, 1983; Haines & Lye, Sedges & rushes E. Afr.: 204−206, 1983 (*Cyp. cyperoides* with subspp. and vars.); Berhaut, Fl. ill. Sénégal 9: 273, 1988 (*Mariscus cylindrostachyus*); Troupin, Fl. Rwanda 4: 467, 1988; Lidia 3: 45, 1992; Gordon-Gray, Cyper. Natal: 133, 1995 (nutlet); Fl. Eth. & Eritrea 6: 456 (*Cyp. cyperoides*), 457 (*Cyp. subumbellatus*), 1997; Bajpai & al. in Phytomorphology 53: 115, 2003 (nutlet; *Cyp. cyperoides*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 302, 2005; Fl. Trop. E. Afr., Cyper.: 224, 2010 (*Cyp. cyperoides*); Fl. Gabon 44, Cyper.: 47, 2012 (*Cyp. cyperoides* subspp. *cyperoides* & *macrocarpus*); Fl. China, Ill. 23: 320−321, 2012 (*Cyp. cyperoides*); Velayos & al., Fl. Guinea Ecuat. 11: 341 (*Cyp. cyperoides*), 357 (*Cyp. surinamensis*), 2014.

bas.: *Kyllinga sumatrensis* Retz. 1786.

syn.: ***Cyperus cyperoides*** (L.) Kuntze, incl. var. *aureus* Peter ex Kük., var. *brevispicatus* Kük., var. *clarkei* (Turrill ex Craib) Kük., var. *evolutior* (C. B. Clarke) Kük., var. *nossibeensis* (Steud.) Kük., var. *ovalis* Kük., var. *polyphyllus* (Steud.) Kük., var *repens* Kük., and var. *subcompositus* (C. B. Clarke) Kük., and subsp. *flavus* Lye, subsp. *macrocarpus* (Kunth) Lye, subsp. *pseudoflavus* (C. B. Clarke) Lye; *Cyp. cylindrostachyus* Boeckeler 1870; *Cyp. macrocarpus* (Kunth) Boeckeler, incl. var. *excelsior* Kük., var. *humbertii* (Cherm.) Kük., var. *kraussii* (Boeckeler) Kük., var. *pseudoflavus* (C. B. Clarke) Kük., and var. *submacrocarpus* Kük.; *Cyp. steudelianus* Boeckeler; *Cyp. sublimis* (C. B. Clarke) Dandy; *Cyp. subumbellatus* Kük. 1936, nom. superfl., and var. *sessilispicatus* Kük., var. *subglobosus* Kük., var. *sublimis* (C. B. Clarke) Kük., and var. *thomensis* (C. B. Clarke) Kük.; *Cyp. umbellatus* (Rottb.) Benth. 1861, nom. illeg., non Burm. f. 1768, nec Roxb. 1820, nec Thwaites 1864, nec Hillebr.; *Kyllinga umbellata* Rottb. 1773, nom. superfl., and var. *sumatrensis* (Retz.) Willd. 1797; *K. biglumis* (Gaertn.) Steud.; *Mariscus alternifolius* Vahl; *M. biglumis* Gaertn.; *M. umbellatus* J. Presl & C. Presl, nom. illeg. superfl.; *M. macer* Kunth; *M. macrocarpus* Kunth; *M. concinnus* Schrad. ex Nees, incl. var. *evolutior* (C. B. Clarke) Panigrahi, var. *khasianus* (C. B. Clarke) Panigrahi, and var. *subcompositus* (C. B. Clarke) Panigrahi; *M. sumatrensis* var. *evolutior* (C. B. Clarke) C. Y. Wu & Karthik. and var. *khasianus* (C. B. Clarke) Karthik; *M. cylindristachyus* Steud. 1854; *M. cyperoides* (L.) Urb. 1900, nom. illeg., non (Roxb.) Dietrich 1833; *M. macer* Kunth; *M. radiatus* Hochst.; *M. nossibeensis* Steud.; *M. philippensis* Steud.; *M. pseudoflavus* C. B. Clarke; *M. quarrei* Cherm.; *M. polyphyllus* Steud. 1842, nom. illeg., non Kunth 1816, nec (Benth.) Kuntze 1891; *M. sieberianus* Nees ex C. B. Clarke, incl. var. *evolutior* C. B. Clarke, var. *khasianus* C. B. Clarke, var. *nossibeensis* (Steud.) Cherm., and var. *subcompositus* C. B. Clarke; *M. steudelianus* (Boeckeler) Cufod.; *M. sublimis* C. B. Clarke; *M. thomensis* C. B. Clarke; *M. umbellatus* (Rottb.)Vahl 1805 (non Pursh 1813, nec J. Presl & C. Presl 1828), incl. var. *evolutior* (C. B. Clarke) E. G. Camus, var. *microstachyus* (Kük.) Tang & F. T. Wang, var. *sieberianus* E. G. Camus, and var. *subcompositus* (C. B. Clarke) Tang & F. T. Wang; *M. umbellatus* J. Presl & C. Presl 1828, nom. illeg.; *Scirpus cyperoides* L. 1771; *Cyperus indecorus* Kunth var. *indecorus*; *Mariscus indecorus* (Kunth) Podlech; ? *M. luzuliformis* (Boeckeler) C. B. Clarke; ? *Cyperus luzuliformis* Boeckeler (cf. also under ***Mariscus albomarginatus*** and ***M. indecorus*** var. ***indecorus*** above, p. 250 and p. 259, respectively).

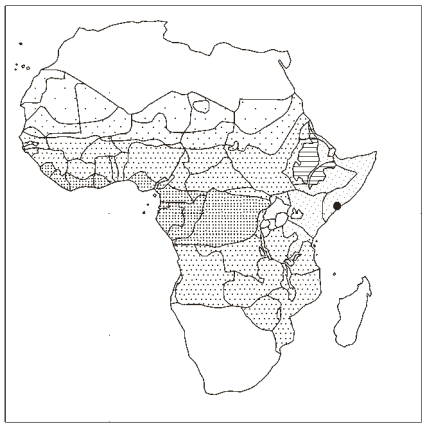
Perennial rhizomatous herb; culm base hard, swollen, cormose, ± spherical (not a soft pseudobulb), to c. 10 mm ∅, enveloped in persistent papery, dark red to purple leaf sheaths often splitting up into fibres; upper leaf sheaths green to pale brown; culms few, tufted, 6−90 cm long, 0,5−5 mm ∅, bluntly trigonous, glabrous; leaf blades linear, 10−39 cm long, 0,2−1,2 cm wide, attenuate, scabrid on margin and midrib near apex; inflorescence a simple anthela with 4−18 primary branches 0,2−12 cm long, sometimes with 1−6 sessile spikes at base and some stalked spikes; these cylindrical, 0,7−3 × 0,5−1,3 cm, with 25−180 spreading spikelets; spikelets green, sometimes yellowish-green when young, flushed brown to golden when older, 2,5−7 mm long, 1−4-flowered.

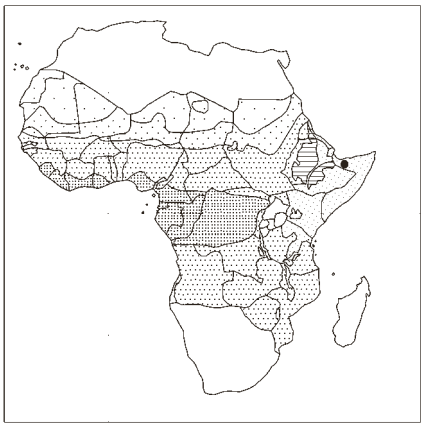
Forest, forest clearings; riverine forest; *Hagenia abyssinica* woodland; in broken shade of riparian transition woodland; regularly grazed grassland; especially in swampy situations on streamsides; road and path sides; waste places; fallow fields; fields, rice fields; gardens; well drained sands; more rarely in savannas and meadows; mountain savanna with *Kotschya lutea*; neglected *Cedrela* plantation with regenerating mixed woodland of *Combretum collinum*, *Stereospermum kunthianum*, *Acacia hockii*, *Albizia grandibracteata* on ground with rocky outcrops; pioneer on spoil earth in permeable soil; locally common; forming clusters or small tussocks; resistant to animal trampling; 0−2400−3000 m alt.

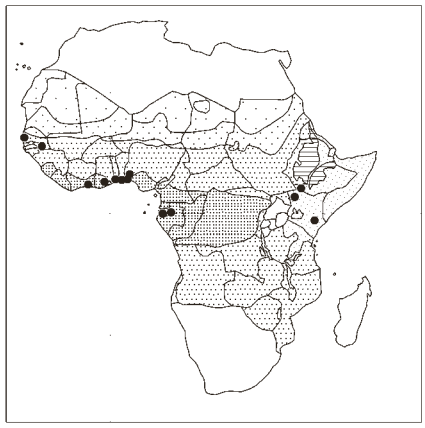
Very variable in: size of spikes, length of inflorescence rays, crowding of spikelets. Various forms are influenced by habitat, amount of moisture available and time of the season (Fl. Trop. E. Afr., Cyper.: 226, 2010). Also, "young plants are relatively short with a clear yellowish-green anthelate inflorescence of several spikes, each carrying fairly closely packed narrow spikelets. With maturity, the … culms increase in height, the spikes elongate with some separation and swelling of the spikelets. There is also a change in glume colour to deeper brownish yellow green" (Gordon-Gray, Cyper. Natal: 136, 1995).

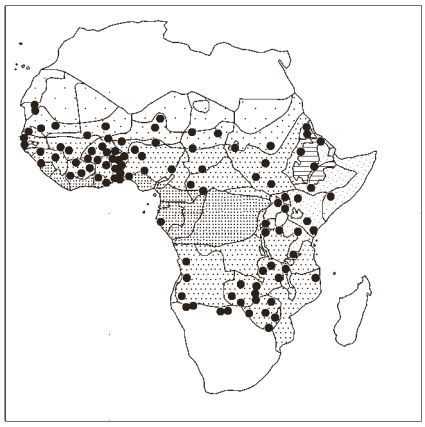
Cape Verde Isl.; Bioko/Fernando Poo, Annobón; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Comoros, Mauritius; tropical & subtropical Asia, from Pakistan, NW Himalayas, India, Sri Lanka E-wards to China, Japan and N Australia; Hawaii; introduced into Fiji Isl., West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 281−282, 2012; Naczi & Ford, Sedges: uses…: 41, 2008).

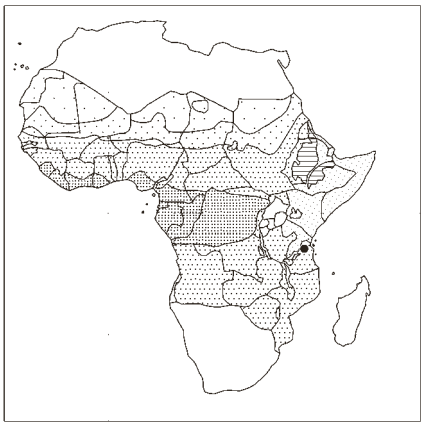
Also used as an ornamental. The plant (as *Cyperus subumbellatus* Kük.) "is sold as an indoor plant under the name 'Cyperus sumula'" in the United Kingdom (Naczi & Ford, Sedges: uses…: 8, 2008).

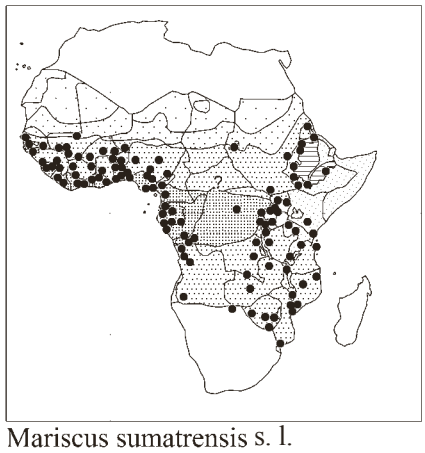

Mariscus somalidunensis

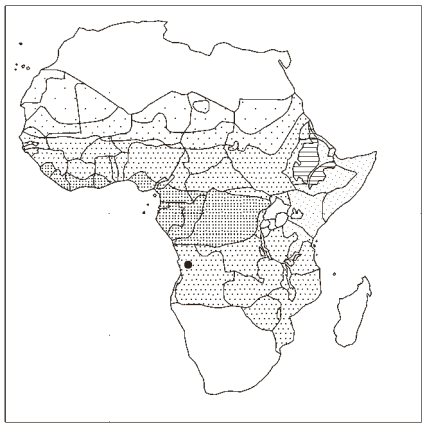

Mariscus somaliensis

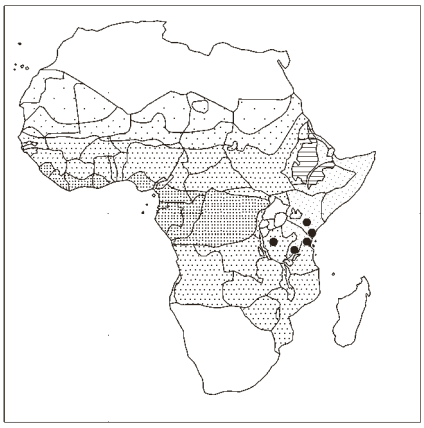

Mariscus soyauxii

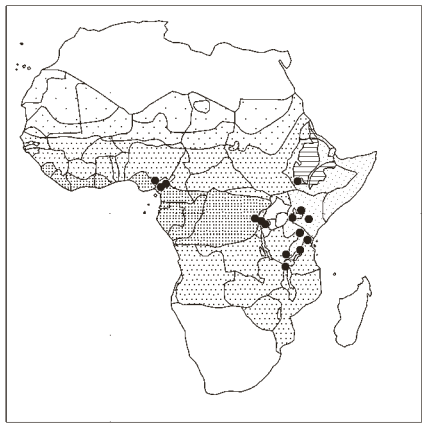

Mariscus squarrosus

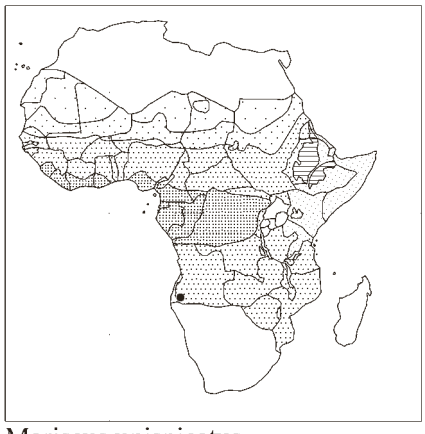

Mariscus stramineo-ferrugineus

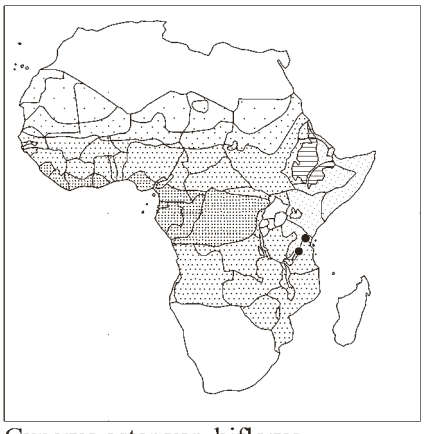

Mariscus sumatrensis s. l.

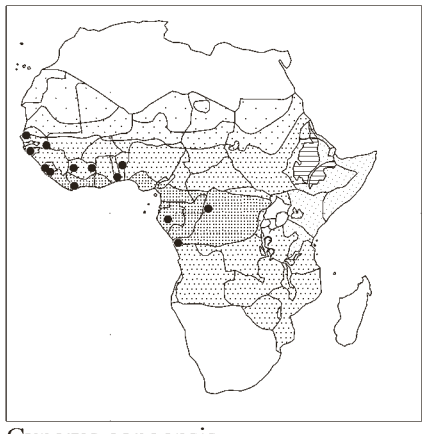

Mariscus tanyphyllus


Mariscus taylorii


Mariscus tomaiophyllus


Mariscus unispicatus


Cyperus aster var. biflorus
(Mariscus)


Cyperus congensis
(Mariscus)

MARISCUS SUMATRENSIS

"As is usual with common and widespread pioneer taxa, a whole host of subspecies and varieties has been recognized in the past" (Fl. Trop. E. Afr., Cyper.: 226, 2010).

In Flora of Tropical East Africa, Cyperaceae, Index p. 453, 2010, the name *Cyperus cylindrostachyus* Boeckeler is cited but without reference to a page number.

M. tanyphyllus (Ridl.) C. B. Clarke; C. B. Clarke, Fl. Trop. Afr. 8: 391, 1902; Figueiredo & Smith, Pl. Angola: 180, 2008 (under *Cyperus*).

bas.: ***Cyperus tanyphyllus*** Ridl.

Perennial tufted herb with very short scarcely creeping rhizome; culms 30−60 cm tall, triquetrous, grooved, base sub-bulbous; leaves linear, flaccid, shorter than culm; sheath entire, papery, brown; inflorescence a simple anthela with 5−11 rays, these to 4 cm long; spikes ovate-cylindrical, 1,5 × 1 cm, each with c. 25 spikelets; spikelets lanceolate, acuminate, 6−8 × 1,5 mm, 4-flowered, *tetragonous* in fruit, dusky ferrugineous; nutlet obovate, trigonous, c. half as long as glume.

Primary woods; lofty wooded places; rather poor thicket-grown places.

Compared with *M. sieberianus* (= *Mariscus sumatrensis*) by Clarke 1902: l.c.

M. taylorii C. B. Clarke, incl. var. *groteanus* (Kük.) Napper and var. *udigensis* (Kük.) Napper; non *Cyperus taylorii* C. B. Clarke (= *Cyp. rotundus*); Fl. Trop. E. Afr., Cyper.: 236−237, 2010 (as *Cyperus oblongoincrassatus*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 213, 1983 (idem).

syn.: ***Cyperus oblongoincrassatus*** Kük. 1936, incl. var. *groteanus* Kük. and var. *udigensis* Kük., but *excl*. var. *clarior* Kük. [= *Mariscus rohlfsii* (Boeckeler) C. B. Clarke]; *Cyp. clarkeanus* K. Schum. 1895 ("intended as a *nomen novum* for *Mariscus taylorii*, which was still a *nom. nudum* at the time – so this is a nomen *invalid*.", Fl. Trop. E. Afr.: l.c.).

Perennial herb with short rhizome and sometimes with underground stolons; culms crowded, 30−50 cm long, 0,3−1 mm ∅, trigonous, glabrous, base slightly to considerably swollen; leaf sheaths reddish-brown, rather fleshy; blades linear, flat, 30−50 cm × 3−6 mm, scabrid on margins; inflorescence a simple anthela with primary branches 5−12, 0,5−4−12 cm long; spikes 1,5−2−3 × 0,8−1,5 cm, spreading; spikelets sessile and at end of primary branches, linear-lanceolate, 3−5 × 1−1,5 mm, 2−6-flowered.

Rocky sites; dry *Acacia*, *Commiphora* bushland; edge of rivulet in rain-forest; humid places; 350−1800 m alt.

M. tomaiophyllus (K. Schum.) C. B. Clarke – This species figures under *Cyperus* in most of the following references: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 247−248, 1955; Cable & Cheek, Pl. Mt Cameroon: 155, 1998; Simpson & Inglis in Kew Bull. 56: 310, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 300, 2005; Harvey & al., Pl. Lebialem Highl. Cameroon: 152, 2010; Fl. Ethiopia & Eritrea 1: 265, 2009 (in key); Fl. Trop. E. Afr., Cyper.: 239−240, 2010; Gereau & al., Lake Nyasa florist. checklist: 47, 2012; Girma & al. in J. E. Afr. Nat. Hist. Soc. 103: 151, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 207, 1983; Troupin, Fl. Rwanda 4: 467, 1988 (under *Mariscus*); Fl. Eth. & Eritrea 6: 458, 1997; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 339, 2008 (under *Mariscus*).

bas.: ***Cyperus tomaiophyllus*** K. Schum.

MARISCUS TOMAIOPHYLLUS

syn.: *Cyp. tomaiophyllus* var. *alpestris* (K. Schum.) Kük., var. *crassistolon* Kük., var. *laxiflorus* Kük., and var. *magnus* (C. B. Clarke) Kük.; *Cyp. alpestris* K. Schum.; *Mariscus alpestris* (K. Schum.) C. B. Clarke; *M. magnus* C. B. Clarke

Perennial herb with a branching scale-covered woody rhizome to 2 cm ∅; culms few, base covered with brown scales and old leaf bases split by the new culms arising in their axil; culms 0,45−1,4 m tall, 3,7−7,8 mm ∅, trigonous, glabrous; leaf sheath dark brown to almost black at base, brown higher up, 5−14 cm long; blade linear, 35−90 × 0,6−1,5 cm, scabrid on margin and primary vein, apex acuminate; inflorescence a simple anthela with primary branches 7−15, 1,5−9 cm long; spikelets in long, crowded clusters, sessile and at end of primary branches, many per cluster, linear-oblong, 0,5−1,3 cm × 1,2−2,5 mm.

Swamps, bogs; wet places in forests; forest edges; clearings in bamboo forest; damp grassy slopes; also ruderal; 1300−2900 m alt.

Bioko/Fernando Poo.

M. unispicatus (Bauters, Reynders & Goetgh.) J.-P. Lebrun & Stork, **comb. nov.** in Candollea 74: 149, 2019; Bauters & al. in Novon 20: 135, 2010 (in comparative table).

bas.: ***Cyperus unispicatus*** Bauters, Reynders & Goetgh., Novon 20: 137, 2010 (figs. p. 135, 136). Type: Angola, Huíla, near Mupa Catholic Mission in Cuanhama, 1250 m alt., 9 Sept. 1952, H. & E. Hess 52/34 (GENT holo-).

Perennial herb with *slender* dark brown rhizomes, 15−30 × 1−1,5 mm; stem with *swollen base* 5−9 mm ∅ covered in fibrous remains of old leaf sheaths; culms 9−32 cm long, 0,5−1 mm ∅, trigonous; leaves 5−9, basal; sheaths to 4 cm long; blades filiform, 2−14 × 0,1−0,2 cm, ciliated on edges and midrib; inflorescence a *single terminal capitate ovate* spike, slightly pseudolateral, 4−7 × 0,5−1 mm, with deciduous spikelets 2−3,6 × c. 1 mm.

Miombo woodlands; 1250 m alt.

Near *Mariscus* (*Cyperus*) *C. stramineoferrugineus*. Discovered in 1952.

(***M. vestitus*** (Hochst. ex C. Krauss) C. B. Clarke) – See under **M. albomarginatus** C. B. Clarke above.

* * *

The presence of the following taxa in Tropical Africa needs confirmation.

Mariscus albescens Gaudich.; Fl. Trop. E. Afr., Cyper.: 125, 2010.

syn.: ***Cyperus javanicus*** Houtt. 1782, non Kük. 1931 (= ?); *Mariscus javanicus* (Houtt.) Merr. & F. P. Metcalf 1945, nom. illeg., non (Moritzi) Kuntze 1891; *M. stuppeus* (G. Forst.) Merr.; *Cyperus pennatus* Lam. 1791.

Cited by C. B. Clarke in Fl. Trop. Afr. 8: 397, 1902, from Kenya (7), Taita hills (Hildebrandt 2437). This species is otherwise known from Indian Ocean Islands (Madagascar, Seychelles, etc.) and tropical and subtropical SE Asia to Australia, Hawaii. – The Hildebrandt specimen was not seen by the authors of Fl. Trop. E. Afr. (l.c.).

M. microcephalus J. Presl & C. Presl 1828; Fl. Trop. E. Afr., Cyper.: 256, 2010.

syn.: ***Cyperus compactus*** Retz. 1788, non Lam. 1791; *Mariscus compactus* (Retz.) Bold.

MARISCUS MICROCEPHALUS

Cited by C. B. Clarke in Fl. Trop. Afr. 8: 402, 1902, from Tanzania, Kilimanjaro (K. Schumann), but no specimen seen by Clarke from there, who suggests, however, that specimens may have been imported with rice. Occurrence in tropical E Africa not confirmed (l.c., 2010). This species is known from Madagascar, tropical and subtropical Asia to N Australia.

* * *

The following species placed under **Cyperus** are perhaps true **Mariscus**: they are in need of further study.

Cyperus aster (C. B. Clarke ex Cherm.) Kük.; Fl. Trop. E. Afr., Cyper.: 252, 2010.

bas.: *Mariscus aster* C. B. Clarke ex Cherm. (Madagascar, Perrier 2666).

– Var. **biflorus** Peter & Kük.; Fl. Trop. E. Afr., Cyper.: 252, 2010.

Perennial herb to 90 cm tall, rhizomatous; culms tufted, 68−89 cm long, 1,1−1,6 mm ∅, trigonous; leaves much longer than culms; sheath reddish-brown; blade linear, 1−1,5 mm wide; inflorescence a simple anthela with 2 primary branches, ± sessile; spikelets small, subglobose, 4−6 mm ∅. – The description is based on 2 collections, viz. Peter 39156, 4305. The specimens "without many floral characters, so lots of data missing".

On rocks, hanging from rocks; 1200−1600 m alt.

Map on p. 273.

– Var. **aster** [syn.: *C. aster* var. *andringitrensis* (Cherm.) Peter & Kük.; *Mariscus andringitrensis* Cherm.] in Madagascar.

Cyperus congensis C. B. Clarke; Renier, Fl. Kwango 1: 70, 1948; Raynal in Adansonia Sér. 2, 7: 316, 1967; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 612, 1985; Akoègninou & al., Fl. analyt. Bénin: 91, 2006; Fl. Trop. E. Afr., Cyper.: 255, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 220, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 200, 1983; Berhaut, Fl. ill. Sénégal 9: 178, 1988; Fl. Gabon 44, Cyper.: 43, 2012.

syn.: *C. distans* L. f. var. *mucronatus* Berh., nom. invalid.; *C. sp. fors. nov.* A. Raynal, Fl. & vég. envir. Kayar, D.E.S. ronéo: 69, 1961, & Ann. Fac. Sci. Dakar 9: 157, 1963; *C. eleusinoides* Kunth var. *dinklageanus* Kük.

Perennial robust herb, culm base bulbous covered by fibrous remains of old leaf sheaths; culms 40−70 cm long, 1,5−3,5 mm ∅; leaves from basal 10−20 cm only; sheath light- or dark-reddish brown near base; blade 20−30 cm long, 3−7 mm wide; inflorescence an anthela 3−20 cm wide of 1−3 sessile spikes and usually 2−10 stalked spikes or groups of spikes, peduncles 1−15 cm long; bracts leafy, often numerous, 10−30 cm long; spikelets linear, 5−25 mm long, 1,5−2 mm wide, reddish-brown with 5−40 widely spaced flowers.

Seasonally wet places, e.g. grassy savanna; coastal sand dunes; river banks; fallows; 0−1650 m alt.

Very near *C. distans* L. f. but glumes well imbricate and often with a short mucro (not clearly separate and normally obtuse-rounded at tip). The ecology of *C. congensis* is also different: sunny marshland in savanna (not in shady gallery forest) or between coastal dunes.

"Superfically most similar to the Ethiopian species *C. pratensis* Boeckeler".

C. distans L. f. is a synonym of *Mariscus longibracteatus*. *Cyperus congensis* is perhaps better placed in the genus *Mariscus* (See note under *Mariscus longibracteatus* below).

CYPERUS CONGENSIS

Presence in Tanzania doubtful: "I have seen no East African specimens. Haines & Lye (1983: 200) say this is only known from Kigoma and Iringa Districts but cite no specimens" (Fl. Trop. E. Afr., l.c.).

Map on p. 273.

Cyperus cremeomariscus Lye; Lye in Biol. Skr. 54: 204, 2001; Fl. Trop. E. Afr., Cyper.: 253, 2010. – Icon.: Nord J. Bot. 3: 219, 1983; Haines & Lye, Sedges & rushes E. Afr.: 223, 1983.

Perennial herb with a swollen, bulb-like base covered by 1−2 long thick reddish-brown scales (old leaf sheaths) with prominent nerves and fibres; each bulb producing 1 fertile culm and later in the season 1(-several ?) leafy shoot(s); fertile culm 15−30 cm tall, 0,6−1,2 mm ∅, trigonous, with 1−2 leaves near base; leaf blade 2−4 cm long, c. 2 mm wide; leafy shoot only 5−10 cm long, with 5−10 leaves whose blades are c. 5 cm long, but probably much larger later in the season (collected 30 December 1961); inflorescence a solitary yellowish-white globose or hemispherical head 9−10 mm ∅; bracts 3, leafy, reflexed, to 1−3 cm long; spikelets ± linear, 4−4,5 mm long.

Dry grassland, very rare; c. 2000 m alt.

Known only from the type collected in 1961 (Robinson 4822); Tanzania, Ufipa Distr. (T4).

"Superficially most similar to *Cyperus (Kyllinga) microbracteatus*".

In Fl. Trop. E. Afr., l.c., this plant is placed under the heading "Species which I [H. Beentje] have not seen", because the type material was not refound at K.

(***Cyperus fulgens*** C. B. Clarke)

syn.: *Mariscus fulgens* (C. B. Clarke) Vorster ined.

See under **Cyperus fulgens** p. 109 above.

Cyperus fuscovaginatus Kük.; Engler, Pflanzenreich IV. 20/101: 546, 1936. – Icon.: R. E. Fries in Wiss. Erg. Schwed. Rhodesia-Congo-Exp. 1911−1912, Erg.: pl. I/4 1921.

Perennial herb with short woody rhizome; culms densely tufted, 10−12 cm tall, compressed triquetrous clothed at base with *blackish purple leaf sheaths* splitting into fibres and thickening into an oblong ± bulbous structure; leaves ± as long as culms, flat, flaccid, 1−2 mm wide; anthela simple, 2−3 radiate, branches to 2 cm long; spikes ± loose, each with 1−5 spikelets; these linear, c. 10 mm long, up to 14-flowered; nutlets not developed.

Stony mountain slope.

? Known only from the type collected 28th November 1911 (Fries 1385). – Map on p. 279.

A true **Mariscus** near *M. amauropus* [syn.: *Cyperus leptophyllus* (C. B. Clarke) Hochst. ex Kük.] and *Cyperus vestitus* Hochst. ex C. Krauss [*M. vestitus* (Hochst. ex C. Krauss) C. B. Clarke]. Distinct from the former by its blackish purple leaf sheaths, short bracts, and narrower and looser spikelets. – A plant not sufficiently known.

(**Cyperus longi-involucratus** Lye)

Treated above under **Cyperus** (p. 120), with the note that this plant is "perhaps most similar to *Cyperus amauropus*" (= **Mariscus amauropus**). – Certainly a true **Mariscus** without a valid name in that genus. *Mariscus longi-involucratus* (Lye) xxx would be an available name.

Cyperus obbiadensis Chiov.; Kükenthal in Engler, Pflanzenreich IV. 20/101: 303, 1936; Thulin, Fl. Somalia 4: 134, 1995.

CYPERUS OBBIADENSIS

Perennial tussocky herb with thick (c. 1 cm ∅) and 3−4 cm long swollen stem bases covered in a dense coat of old brownish leaf sheaths; culms to c. 20 cm tall, 0,5−1 mm ∅, trigonous at least above, becoming rounded with age, glabrous; leaves from lower 5 cm only; upper sheaths often pale, the lower brownish; blades filiform, to c. 10 cm × 0,5 mm, margins prominently scabrid; inflorescence a terminal cluster 1,5−2,5 cm ∅, of c. 10 crowded spikelets; these linear, 1−2 × 0,2 cm, flattened, 12−20-flowered, apex acute; glumes 3−4 mm long, reddish-brown, midrib green, excurrent into a prominent mucro.

Dry grassland; probably < 200 m alt.

Taxon of uncertain status; known only from the type which is immature.

Map p. 279.

Cyperus pilosulus (C. B. Clarke) K. Schum. ex Kük.; Engler, Pflanzenreich IV. 20/101: 551, 1936; Fl. Trop. E. Afr., Cyper.: 253, 2010 ("species with inadequate data").

bas.: *Mariscus pilosulus* C. B. Clarke 1894 nom. nud., and 1901 (Fl. Trop. Afr. 8: 384).

Whole plant shortly hairy, with short rhizome; culms several, 25−35 cm tall, trigonous, densely hairy, base oblong-thickened by coloured leaf sheaths; leaves longer than culms, 3−4 mm wide; inflorescence capitate, with 5−7 sessile spikes 1−1,6 × 0,5 cm, densely set with spikelets; these obliquely spreading, oblong, 3 × 1 mm; glumes cinnamon-yellowish.

Ecology not recorded.

Tanzania: between the coast (Zanzibar) and Uyui (= Tabora district). Known only from the type (Taylor s. n.). Map p. 279.

Possibly close to *Mariscus schimperi* Hochst. ex A. Rich. (= *Cyperus neoschimperi* Kük.).

Cyperus pseudobrunneus (C. B. Clarke ex Cherm. 1936) Kük. in Engler, Pflanzenreich IV. 20/101: 435−436, 1936.

bas.: *Mariscus pseudobrunneus* C. B. Clarke 1895, nom., and ex Cherm., Notul. Syst. (Paris) 5: 271, 1936.

Perennial herb with short woody rhizome; culms 80 cm long, robust, sharp-angled, thickened at base, with many leaves in lower part; leaves ± as long as culms, 8−10 mm wide, apex long-acuminate, margins dendate-scabrid; sheaths dark brown; inflorescence a compound anthela with 9 rays to 8 cm long; spikes 3−6 nearly sessile and at end of rays; globose-ovate, to 1,5 cm ∅, with many dense spikelets; these oblong-lanceolate, acute, 8−10 × 2 mm, 8−10-flowered.

Kükenthal (l.c.) distinguished 3 vars.: – var. **continentalis** Kük. in E Africa, Tanzania, Kilimanjaro, at edge of primary forest, at 2500 m alt. (Peter 42075, Schlieben s. n.); – var. **hilsenbergii** (C. B. Clarke) Kük. (bas.: *Mariscus hilsenbergii* C. B. Clarke) in Madagascar; – var. **pseudobojeri** Kük., described from La Galega island (Bojer coll.) in the Western Indian Ocean (at a distance ENE of N tip of Madagascar).

Cyperus pseudobrunneus does not figure in Fl. Trop. E. Afr., Cyperaceae. – Map on p. 279.

Cyperus rhynchosporoides Kük. nom. nov. based on *Rhynchospora ochrocephala* Boeckeler 1879, non *Cyperus ochrocephalus* C. B. Clarke 1894, nom. illeg. (= *Cyp. angolensis* Boeckeler incl. var. *amplibulbus* Peter & Kük.) nec *Cyp. ochrocephalus* Steud. 1842; in Engler, Pflanzenreich IV. 20/101: 537, 1936; Figueiredo & Smith, Pl. Angola: 179, 2008; Bauters & al. in Novon 20: 135, 2010 (in comparative table); Fl. Trop. E. Afr., Cyper.: 257, 2010.

CYPERUS RHYNCHOSPOROIDES

Perennial herb with long thick rhizome 3 mm ∅ covered with reddish-brown scales; culms 10−50 cm long, 0,1−0,2 cm ∅, triangular to rounded; leaf blades c. 30 cm long, 0,3−0,5 cm wide; inflorescence a spherical head c. 1 cm ∅ with many dense linear spikelets 5−6 × 1 mm, 2-flowered, spikelet bracts not ciliate on midrib.

In Angola, Lunda (Pogge 412), and Zambia, Barotse at Sefula (R. de Prosch 21). Also in Zaire ? The Welwitsch (Nº 6838) and Gossweiler (2307) specimens belong to *Cyp. angolensis*.

Perhaps a true *Mariscus*: *M. rhynchosporoides* is a possible name.

Compared with *Mariscus* (*Cyperus*) *absconditicoronatus*, *M.* (*Cyperus*) *stramineoferrugineus* and *M.* (*Cyperus*) *unispicatus* by Bauters & al., l.c.

Cyperus trigonellus Suess.

syn.: *Mariscus trigonellus* Suess.

This plant is perhaps a true **Mariscus**, but treated by us under **Cyperus trigonellus** p. 145.

(**Cyperus varicus** (C. B. Clarke ex Cherm.) Kük. in Engler, Pflanzenreich IV. 20/101: 432−433, 1936, var. **simpliciusculus** Kük. 1936).

bas.: *Mariscus varicus* C. B. Clarke ex Cherm. var. *simpliciusculus* Cherm. 1937.

Cyp. varicus is a plant from Madagascar, but Kükenthal cites 3 collections from Tanzania, viz. v. Brehmer 789 (Uluguru Mts, 2500 m alt, in humid grass cushions), and Schlieben 3019, 3754 (Bondua, rainforest, 1300−2060 m alt.). Not in Fl. Trop. E. Afr., Cyperaceae, 2010.

Lye described a new species, viz. *Cyp. afrovaricus* (Nord. J. Bot. 3: 222, 1983; Haines & Lye, Sedges & rushes E. Afr.: 208−209, 1983, with illustration) which he compared with *Cyp. varicus* from Madagascar. This material needs revision.

(**Cyperus wissmannii** O. Schwartz), Wood, Handbook Yemen flora: 327, 1997.)

syn.: *Mariscus wissmannii* (O. Schwartz) J.-P. Lebrun & Stork, ined.

Described from Yemen (Mitt. Inst. Allg. Bot. Hamburg 10: 341, 1939, type: Wissmann 1796, BM ?) but indicated from NE Trop. Africa in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (consulted in 2017).

In Thulin, Fl. Somalia 4: 134, 1995, *C. wissmannii* is said to be very similar to *C. cunduduensis* / *cundudoensis* Chiov. 1939 from which it differs by its larger spikelet glumes that are not pale but green and blackish or purplish-brown towards apex. They are perhaps conspecific. See above under **Mariscus cundudoensis** (Chiov.) J.-P. Lebrun & Stork.

Cyperus sp. nov. ? Hoenselaar ined. near *Cyp. chrysocephalus* (K. Schum.) Kük. (= *Mariscus chrysocephalus* K. Schum.) sensu Fl. Trop. E. Afr., Cyper.: 150, 2010 – Cf. above under **Mariscus chrysocephalus** p. 254−255.

It differs from *M. chrysocephalus* by its small size and its inflorescence head of only 1−3 spikelets. The four specimens cited are collected from around Lake Victoria (Uganda-Tanzania), "geographically very localized, well away from the distribution area of *C. chrysocephalus sensu stricto*".

SYNONYMS:

Mariscus albomarginatus C. B. Clarke 1902
= **Mariscus indecorus**

albomarginatus C. B. Clarke var. *binucifera* C. B. Clarke = **M. albomarginatus**
alpestris (K. Schum.) C. B. Clarke = **M. tomaiophyllus**
alternifolius Vahl = **M. sumatrensis**
amomodorus (K. Schum.) Cufod. var. *paolii* (Chiov.) Cufod. = **M. paolii**
angularis Turrill = **M. chersinus**
aphyllus Vahl = **Kyllinga tibialis**
aristatus (Rottb.) Cherm. 1938 = **Mariscus squarrosus**
assimilis (Steud.) Podlech = **Courtoisina assimilis**
aster C. B. Clarke ex Cherm. = **Cyperus aster** (See at end of **Mariscus**)
atrosanguineus Hochst. ex A. Rich. = **Mariscus plateilema**
aximensis C. B. Clarke = **M. flabelliformis**
baoulensis Hutch. 1936, English descr. only = **M. baoulensis** (Kük.) Hutch. ex J.-P. Lebrun & Stork
bequaertii Cherm. = **M. ferrugineoviridis**
binucifer (C. B. Clarke) C. B. Clarke = **M. albomarginatus**
boeckeleri C. B. Clarke = **M. amomodorus**
bojeri C. B. Clarke = **M. longibracteatus**
bolusii C. B. Clarke 1894 = **M. owanii**
bulbocaulis A. Rich. = **M. plateilema**
bulbosus Steud. = **M. plateilema**
bullatus (Kük.) Podlech = **M. chersinus**
circumclusus C. B. Clarke = **M. amomodorus**
coloratus (Vahl) Nees = **M. dubius** subsp. **dubius**
coloratus var. *macrocephalus* C. B. Clarke = **M. dubius** subsp. **macrocephalus**
compactus (Retz.) Bold. = **M. microcephalus** (See at end of **Mariscus**)
concinnus C. B. Clarke = **M. amauropus**
concinnus Schrad. ex Nees, incl. var. *evolutior* (C. B. Clarke) Panigrahi, var. *khasianus* (C. B. Clarke) Panigrahi, var. *subcompositus* (C. B. Clarke) Panigrahi = **M. sumatrensis**
cooperi C. B. Clarke = **M. congestus**
cupreus Hochst. ex Boeckeler = **M. impubes**
cylindristachyus Steud. = **M. sumatrensis**
cyperoides (L.) Urb. 1900 = **M. sumatrensis**
cyperoides (Roxb.) A. Dietr., incl. subsp. *africanus* (Kük.) Podlech = **Courtoisina cyperoides**
dactyliformis (Boeckeler) C. B. Clarke = **Mariscus solidus**
diurensis (Boeckeler) C. B. Clarke var. *longistolon* (Peter ex Kük.) Podlech = **Pycreus longistolon**
drakensbergensis Vorster – cf. **Mariscus solidus**
elatior (Kunth) C. B. Clarke = **M. solidus**
ferax (L. C. Rich.) C. B. Clarke = **Torulinium odoratum**
firmipes C. B. Clarke = **Mariscus amomodorus**
foliosus C. B. Clarke 1902 = **M. luteus**
fulgens (C. B. Clarke) Vorster ined. = **Cyperus fulgens** (See at end of **Mariscus**)
globifer C. B. Clarke = **Mariscus amomodorus**
goniobolbus Cherm. var. *angustifolius* Cherm. and var. *perrieri* (Cherm.) Cherm. = **M. perrieri**
grantii C. B. Clarke 1898 – Cf. **M. solidus**
gregorii C. B. Clarke = **M. hemisphaericus**
gueinsii C. B. Clarke = **M. solidus**
hilsenbergii C. B. Clarke, nom. = **M. pseudobrunneus**
hochstetteri Walp. = **M. plateilema**
imbricatus (L.) Cufod. = **M. squarrosus**
indecorus (Kunth) Podlech = **M. sumatrensis**
indecorus var. *decurvatus* (C. B. Clarke) Podlech = **M. rehmannianus**
indecorus var. *dinteri* (Kük.) Podlech = **M. rehmannianus**
indecorus var. *inflatus* (C. B. Clarke) Podlech = **M. albomarginatus**
indecorus var. *namaquensis* (Kük.) Podlech = **M. albomarginatus**
inflatus C. B. Clarke = **M. albomarginatus**
intricatus (L.) Cufod. = **M. squarrosus**
iridifolius (Willd. ex Link) Kuntze = **Machaerina flexuosa** subsp. **polyanthemum**
jamaicensis (Crantz) Britton = **Cladium mariscus** subsp. **jamaicensis**
javanicus (Houtt.) Merr. & F. P. Metcalf = **Mariscus albescens** (See at end of **Mariscus**)
karisimbiensis Cherm. ex Staner 1933, nom. nud. = **M. karisimbiensis** Cherm. 1935
keniensis (Kük.) S. S. Hooper = **M. longibracteatus**
kraussii Hochst., incl. var. *capitatus* Cherm. = **M. dubius**
leptophyllus (Steud.) C. B. Clarke = **M. amauropus**
leptostachyus (Nees) Kuntze = **Cladium mariscus** subsp. **jamaicense**
ligularis (L.) Urb. var. *spicatocapitatus* ["Jardin"] Nelmes = **Mariscus ligularis**
longibracteatus Cherm. var. *keniensis* (Kük.) Maquet and var. *subdistans* Kük. = **M. longibracteatus**
luridus T. Durand & De Wild. = **M. flabelliformis**
luzuliformis (Boeckeler) C. B. Clarke = (*M. indecorus* =) ? **M. sumatrensis**
macer Kunth = **M. sumatrensis**
macrocarpus Kunth = **M. sumatrensis**
macropus (Boeckeler) C. B. Clarke = **M. amomodorus**
magnus C. B. Clarke = **M. tomaiophyllus**
malawicus J. Raynal = **Alinula malawica**
manongarivensis Cherm. = **Mariscus luteus**
maritimus C. B. Clarke = **M. karisimbiensis**
marlothii C. B. Clarke var. *globispica* C. B. Clarke = **M. capensis**
martii (Roem. & Schult.) Fernald = **Cladium mariscus**
mollipes C. B. Clarke = **Mariscus amomodorus**
moniliferus Chiov. = **M. impubes**
mucronatus (L.) Gaertn. = **Cyperus capitatus**
mucronatus C. Presl = **Cyp. capitatus**
nogalensis Chiov. = **Cyp. grandibulbosus**
nossibeensis Steud. = **Mariscus sumatrensis**
oblonginux C. B. Clarke = **M. amomodorus**
obsoletenervosus (Peter & Kük.) Greenway = **M. albomarginatus**
paradoxus (Cherm.) Cherm. = **Alinula paradoxa**
pedunculatus (R. Br.) = **Remirea maritima**
philippensis Steud. = **Mariscus sumatrensis**
pilosulus C. B. Clarke = **Cyperus pilosulus** (See at end of **Mariscus**)
plurinervosus Bodard (= *Cyperus plurinervosus* Bodard) = **Cyp. conglomeratus**
polyphyllus Steud. = **Mariscus sumatrensis**
procerus A. Rich. 1850 = **M. impubes**
pseudobrunneus C. B. Clarke ex Cherm. – See at end of **Mariscus**
pseudoflavus C. B. Clarke = **M. sumatrensis**
quarrei Cherm. = **M. sumatrensis**
radiatus Hochst. = **M. sumatrensis**
remotus C. B. Clarke = ? **M. boreochrysocephalus**
rhodesicus Podlech = **M. hirtellus**
richardii Steud. = **M. impubes**
rubrotinctus Cherm. = **M. longibracteatus**
rufus Kunth, incl. var. *subcapitatus* C. B. Clarke = **M. ligularis**
setaceus (L.) Moench 1794 = **Isolepis setacea**

setaceus Raddi 1823 = **Pycreus lanceolatus**
sieberianus Nees ex C. B. Clarke, incl. var. *evolutior* C. B. Clarke, var. *khasianus* C. B. Clarke, var. *nossibeensis* (Steud.) Cherm., and var. *subcompositus* C. B. Clarke = **Mariscus sumatrensis**
socialis (C. B. Clarke) S. S. Hooper = **M. pseudopilosus**
squarrosus C. B. Clarke = **M. maderaspatensis**
steudelianus (Boeckeler) Cufod. = **M. sumatrensis**
stuppeus (G. Forst.) Merr. = **M. albescens** (See at end of **Mariscus**)
sublimis C. B. Clarke = **M. sumatrensis**
sumatrensis var. *evolutior* (C. B. Clarke) C. Y. Wu & Karthik. and var. *khasianus* (C. B. Clarke) Karthik. = **M. sumatrensis**
tenuis (Sw.) Nelmes = **M. flabelliformis**
thomensis C. B. Clarke = **M. sumatrensis**
thwaitesii Livera = **Cyperus procerus**
trigonellus Suess. = **Cyp. trigonellus**
trinervis C. B. Clarke = **Mariscus pseudopilosus**
uitenhagensis Steud. = **M. capensis**
umbellatus J. Presl & C. Presl = **M. sumatrensis**
umbellatus (Rottb.) Vahl, incl. var. *evolutior* (C. B. Clarke) E. G. Camus, var. *microstachyus* (Kük.) Tang & F. T. Wang, var. *sieberianus* E. G. Camus, and var. *subcompositus* (C. B. Clarke) Tang & F. T. Wang, and var. *sublimis* (C. B. Clarke) Kük. = **M. sumatrensis**
umbilensis C. B. Clarke ex W. Watson (= *M. owanii*) = **M. solidus**
usitatus (Burch.) Vorster ined. = **Cyperus usitatus**
varicus C. B. Clarke ex Cherm. var. *simpliciusculus* Cherm. = **Cyp. varicus** var. **simpliciusculus** – See at end of **Mariscus** p. 276
vestitus (Hochst. ex C. Krauss) C. B. Clarke = **Mariscus albomarginatus**
vestitus var. *decurvatus* C. B. Clarke = **M. rehmannianus**
viridis Hochst. ex Schweinf. = **M. schimperi**
wissmannii (O. Schwartz) J.-P. Lebrun & Stork, ined. = **Cyperus wissmanni** – See at end of **Mariscus** p. 276

(MELANCRANIS)

Melancranis clandestina (Steud.) Kuntze = **Ficinia clandestina**
commutata (Nees) Kuntze = **F. gracilis**
contorta (Nees) Kuntze = **F. stolonifera**
filiformis (Lam.) Kuntze = **F. filiformis**
tenuifolia (Kunth) Kuntze = **F. filiformis**
undosa B. L. Burtt = **F.** *?* **gracilis**

MICRODRACOIDES / *1*

syn.: *Schoenodendron* Engl.

Microdracoides, like *Coleochloa* and *Afrotrilepis,* has a peculiar, sac-like structure of fructification called utricle. The utricle is the outermost fructification wall, it is "free from the enclosed fruit, which consists of a trigonal body composed of the thin pericarp" (Koyama in Makinoa N. S. 6: 15−16, 2007).

Microdracoides squamosa Hua; J. Raynal in Adansonia N. S. 3: 262, 1963 (with map); Lisowski, Fl. Rép. Guinée 1: 406, 2009;

Velayos & al., Fl. Guinea Ecuat. 11: 141, 2014. – Icon.: Terre & Vie 3/3: 136−137, 1933; Fl. W. Trop. Afr., ed. 2, 3/2: 348, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: p. 4 fig. 3 E, E1, 1974; Goetghebeur in Kubitzki, Families & genera of vascular plants IV: 183, 1998; Korte & Porembski in Senckenberg, Natur, Forschung, Museum 141: 16−17, 2011; Porembski in U. Lüttge & al., eds., Plant desiccation tolerance, Ecol. Studies 215: 145, 154, 2011; Browning & Goetghebeur, Sedge genera Africa & Madag.: 62, 2017.

syn.: *Scirpodendron buecheri* Engl. errore pro *Schoenodendron buecheri* Engl., Bot. Jahrb. Syst. 44, Beih. 101: 34, 1910; non *Scirpodendron* Zipp. ex Kurz 1869 (Asiatic genus).

Perennial dioecious dwarf shrub with *Vellozia*-like habitus, forming branched "trunks" (caudex) 0,3−1,8 m high, 7 cm ∅, covered by leaf sheaths and adventitious roots; leaves stiff, 4−6 cm long, 1−3 mm wide, tapering evenly to a sharp point, densely crowded, disposed in a close spiral forming a terminal tassel, resembling pine-needles, their bases clothing the stem and producing the "trunk", blade deciduous; inflorescence paniculate, much-branched, 15−25 cm long, 1,5−3 cm wide; branches at intervals along most of its length, 2−3 together, subtended by a sheath with reduced blade; each branch terminating in a head 1−2,5 cm long, 0,5−1,2 cm ∅, composed of few to many spikelet like spikes; these narrow, 5−8 × 0,5 mm; male flower 3-staminate; female flower with 1 pistil.

Wet granitic or gneiss outcrops at forest edge; inselbergs; c. 780−900 m alt. – Well predisposed to survive recurrent burning: the very densely set stems can protect the plant against fire.

Bioko/Fernando Poo; uncertain in Equatorial Guinea.

(MONANDRUS Vorster ined.)

Monandrus squarrosus (L.) Vorster ined. = **Mariscus squarrosus**

NELMESIA / *1*

Monotypic genus from N Zaire.

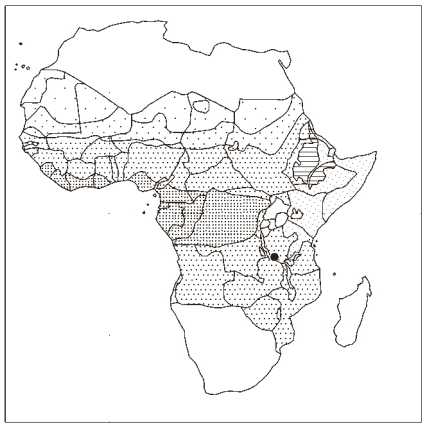
Nelmesia melanostachya Van der Veken; Goetghebeur in Kubitzki, ed., Families & genera vascular plants IV: 168, 1998. – Icon.: Bull. Jard. Bot. Etat Bruxelles 25: 145, 1955 (details); Hooker's Icon. Plant. 36: pl. 3571, 1956; Browning & Goetghebeur, Sedge genera Africa & Madag.: 64, 2017.

Apparently annual herb, tufted, glabrous; culms erect, simple, *rigid*, 3−4-angled, scapose, striate-sulcate, 6−45 cm tall, c. 1 mm ∅, straw-coloured; leaves basal, reduced to their sheaths, these dark red; inflorescence a single terminal spikelet, oblong-lanceolate, 1−2,6 cm × 2−4 mm, black with brown apex (in dry state), 20−40-flowered, *flowers bisexual*, the lower 5−7 glumes empty, *spirally* arranged.

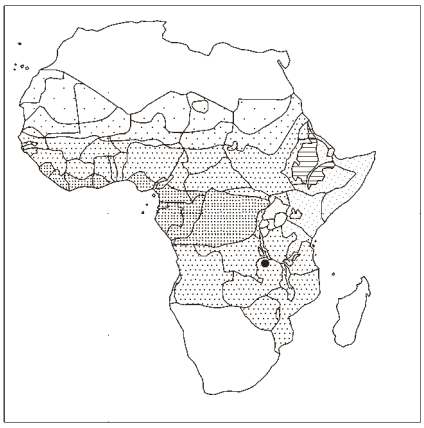
Temporarily wet shallow depressions (with 3 cm deep water) on lateritic pan in savanna region.

May be confused with an *Eleocharis*. Near *Nemum*.

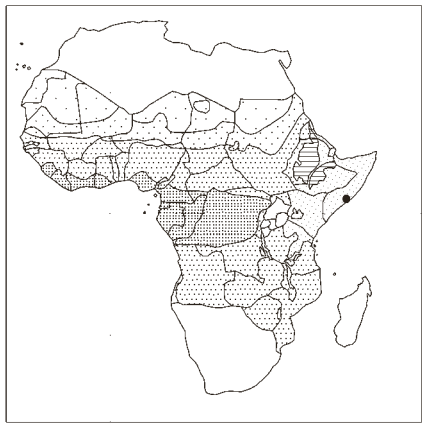
"The presence of one adaxial hypogynous scale … is highly problematical and would require a thorough morphological reconsideration of the nature of this 'spikelet'" (Goetghebeur 1998: 168).



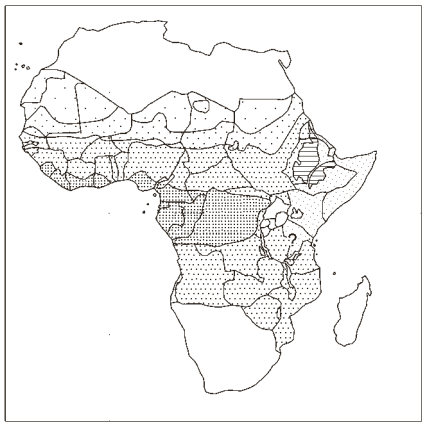
Cyperus cremeomariscus
(Mariscus)



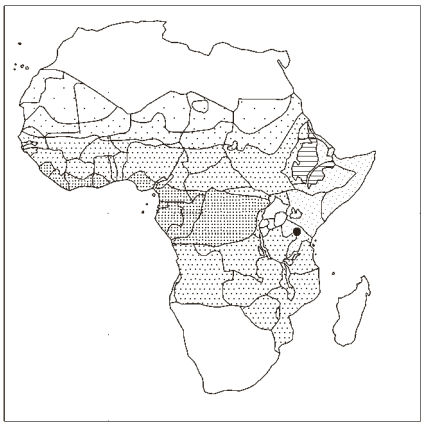
Cyperus fuscovaginatus
(Mariscus)



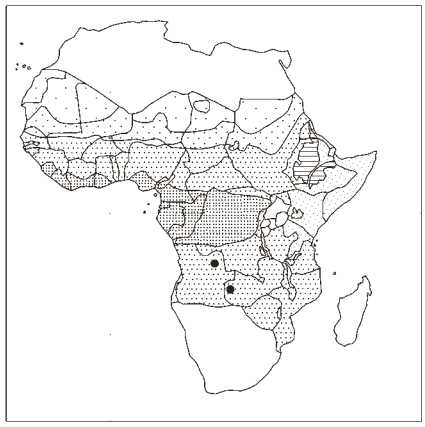
Cyperus obbiadensis
(Mariscus)



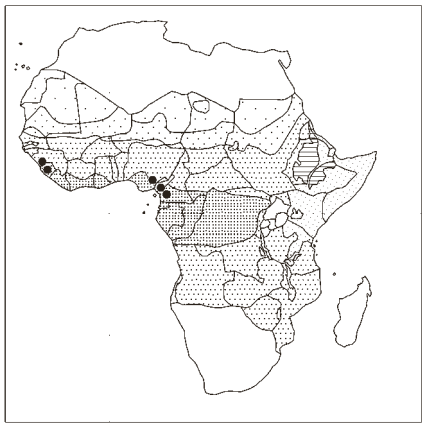
Cyperus pilosulus
(Mariscus)



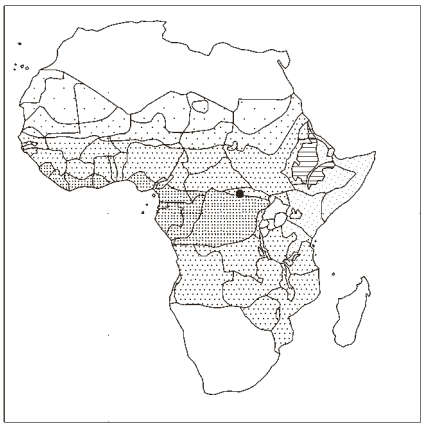
Cyperus pseudobrunneus
(Mariscus)



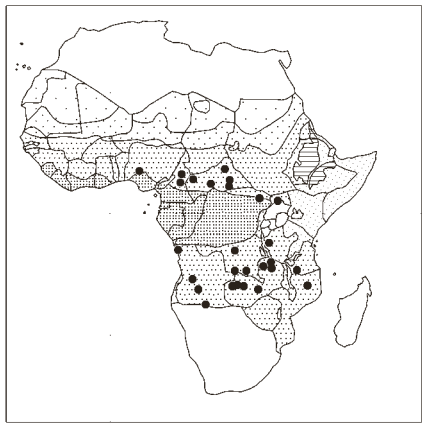
Cyperus rhynchosporoides
(Mariscus)



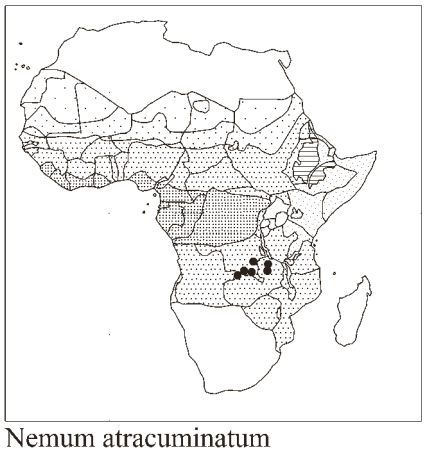
Microdracoides squamosus



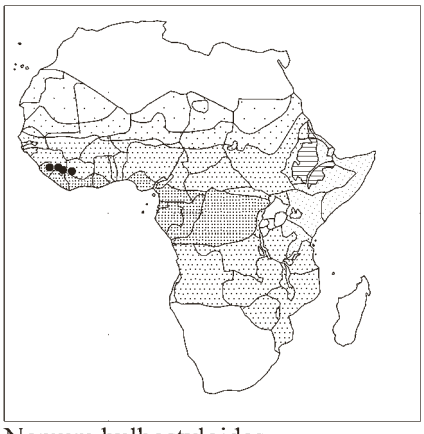
Nelmesia melanostachya



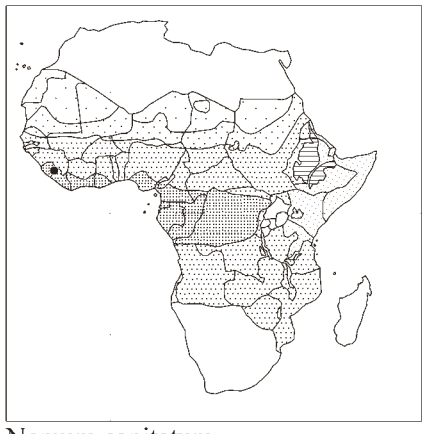
Nemum angolense



Nemum atracuminatum



Nemum bulbostyloides



Nemum capitatum

NEMUM / *8*

Tropical African genus of 8 species (not in West Indies).

"Phylogenetic analyses over the last 11 or so years [2018] … have suggested that *Nemum* is derived from within *Bulbostylis* … *Nemum* has been separated from within *Bulbostyis* based on deciduous style bases (mostly persistent in *Bulbostylis*) and persistent scales (mostly deciduous in *Bulbostylis*). However, these characters are far from constant … Given the paraphyletic relationship of *Bulbostylis* to *Nemum*, the morphological overlap between the two genera, and our interest that genera be monophyletic, we suggest that *Bulbostylis* and *Nemum* should be considered congeneric. However given nomenclatural priority, the combination of these genera would result in the transfer of the 215 species of *Bulbostylis* to *Nemum* …" but "there is also nomenclatural history to consider. *Bulbostyli*s Kunth (1837) is already a conserved name" (Roalson & al. in Taxon 67: 642, 2018). – We have opted for the traditional use of *Nemum* as a genus in its own right (cf. also Raynal 1973: 146−151; Goetghebeur in Kubitzki, ed., Families & genera vascular plants: 167−168, 1998; Browning & Goetghebeur, Sedge genera Africa & Madag.: 65, 2017).

One species, viz. *N. raynalii*, is known only from the type; the fruit is unknown.

LARRIDON, I. & al. (2007). Systematic revision and phylogeny of the African genus Nemum (Cyperaceae). *In:* ACHOUNDONG, G., ed., *XVIIIth AETFAT Congress 26 February – 2 March 2007 Yaoundé, Cameroon, Abstracts*: 35. L'Herbier National du Cameroun, Yaoundé.

LARRIDON, I. & al. (2009). Novelties in Nemum (Cyperaceae). *Belg. J. Bot.* 141: 157−177.

RAYNAL, J. (1973). Notes cypérologiques: 19. Contribution à la classification de la sous-famille des Cyperoideae. *Adansonia, Sér. 2*, 13: 145−171 [146−151].

ROALSON, E. H. & al. (2018). (2618) Proposal to conserve Bulbostylis, nom. cons. (Cyperaceae) against an additional name, Nemum. *Taxon* 67: 642.

ROALSON, E. H. & al. (2019). A broader circumscription of Bulbostylis including Nemum (Abildgaardieae: Cyperaceae). *Phytotaxa* 395: 199−208.

Nemum angolense Larridon & Goetgh., nom. nov.; Roalson & al. (2019): 204 (under *Bulbostylis*). – Icon.: Raynal in Adansonia, Sér. 2, 13: 149, 1973 (as *Nemum spadiceum*); Lye in Bot. Not. 126: 328, 1973 (as *N. spadiceum*); Lye in Lidia 2: 36, 1989 (idem); Haines & Lye, Sedges & rushes E. Afr.: 130, 1983 (idem); Belg. J. Bot. 141: 158, 159, (map p. 161), 2009; Fl. Trop. E. Afr., Cyper.: 117, 2010.

bas.: *Scirpus angolensis* C. B. Clarke 1894, nom. illeg.

syn.: *S. spadiceus* (Lam.) Boeckeler 1870, non L. 1753 nec Phil. 1857, var. *ciliatus* Ridl. 1884, nom. illeg., non *S. ciliatus* Rottb. 1772; *S. ustulatus* Podlech 1961, nom. superfl.; *Nemum spadiceum* sensu Lye, Sedges & rushes E. Afr.: 130, 1983, non (Lam.) Desv. ex Ham., and Lye in Bot. Not. 126: 328, 1973; *Bulbostylis angolensis* Larridon & Roalson

Tufted annual or densely tufted perennial herb; culms 14−65 cm tall, 0,4−2 mm ∅; leaves basal, filiform, to 25 cm × 0,3−1 mm, ± involute, eligulate; sheath orifice with a bundle of long hairs; inflorescence anthelate with 1−11 spikelets; these cylindrical-ovoid to spherical, 6 × 5 mm, with many dark reddish-brown to black, spirally arranged obovate glumes (1,5−3,5 × 1−2 mm).

Seasonally wet areas and seepage places (marshes, riverbanks, depressions, grasslands) in savannas, open forests; iron-rich soils; sandy-peaty soils; laterite or skeletal soil on top of granitic rocks; 580−1750 m alt.

The most variable species within the genus. Often confused with *N. spadiceum*, and "some specimens from central Africa show more or less intermediate characters of both species. These specimens are likely of hybrid origin" (Larridon & al. in Belg. J. Bot. 141: 173, 2009). Further research is needed.

N. atracuminatum Larridon, Reynders & Goetgh. – Icon.: Belg. J. Bot. 141: 163, 165 (map), 2009.

syn.: *Bulbostylis atracuminata* (Larridon, Reynders & Goetgh.) Larridon & Roalson

Tufted annual herb; culms to 50 cm tall, c. 0,5 mm ∅; leaves to 40 cm long, c. 0,5 mm wide, basal, *distichous*, ± V-shpaed to involute, eligulate; *sheath orifice glabrous*; inflorescence anthelate with 1−5 ovoid spikelets; these with many nearly *black* spirally arranged *glumes* (1−3,5 × 0,5−2,5 mm).

Temporarily wet areas (marshes, riverbanks); on shallow soil (laterite, sandstone, granite); humid savannas to edge of open forests; 1400−1800 m alt.

The closest relative in *Nemum* is *N. megastachyum*.

Might be confused with small annual specimens of *N. angolense*.

N. bulbostyloides (S. S. Hooper) J. Raynal 31. VII. 1973 ("bulbostylidoides"), Lye 9. XI. 1973; Belg. J. Bot. 141: 167 (in table), 168 (map), 2009; Lisowski, Fl. Rép. Guinée 1: 406, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011. – Icon.: Raynal in Adansonia, Sér 2, 13: 151, 1973 (as *N. bulbostylidoides*); Adam, Fl. descr. Mts Nimba 6: 2142, 1983.

bas.: *Scirpus bulbostyloides* S. S. Hooper, Kew Bull. 26: 581, 1972 ("*bulbostylidiodes*" in Fl. W. Trop. Afr., ed. 2, 3/2: 309, 1972, orth. mut.).

syn.: *N. bulbostylidoides* sensu Jaeger & Adam, Végét. vascul. Mts Loma 2: 225, 1981, p. min. p. (cf. under *N. capitatum* below); *Bulbostylis bulbostyloides* (S. S. Hooper) Larridon & Roalson

Tufted or shortly rhizomatous herb to 1 m tall; rhizome covered with large overlapping brown scales; culms c. 1 mm ∅; leaf sheaths flattened, orange-red; leaves needle-like with long hairs at sheath orifice; inflorescence anthelate with a small number of dark red ovoid, shortly pedicellate spikelets 1 × 0,7 cm; glumes papery, dark reddish-brown.

± Humid or marshy savannas and grassy places; relic woodland; 450−1500 m alt.

Related to *N. capitatum*. The specimens cited in Fl. W. Trop. Afr., l.c. from Sierra Leone, viz. Marmo 208, Morton & Gledhill SL 2953, Jaeger 1991 & 7882, 576, are possibly *N. capitatum* (cf. below).

N. capitatum S. S. Hooper ex Larridon & Goetgh. – Icon.: Larridon & al. in Belg. J. Bot. 141: 166, 168 (map), 2009.

syn.: *N. bulbostylidoides* sensu Jaeger & Adam, Végét. vascul. Mts Loma in Boissiera 33: 225, 1981, p.p., quoad specim. Jaeger 395, 1043, 6983, 7056; Adam 22085, 22456 bis non (S. S. Hooper) J. Raynal; *Scirpus bulbostylidoides* sensu S. S. Hooper in Fl. W. Trop. Afr., ed. 2, 3/2: 309, 1972, p.p. quoad specim. Jones 106; Jaeger 395,1043; *Bulbostylis neocapitata* Larridon & Roalson, non *B. capitata* (L.) Steven 1814, nec *B. capitata* (Lye) Lye 2010.

Perennial herb with rhizome to 2 cm long, to 5 mm ∅, covered with large scales; culms to 60 cm tall, 1 mm ∅; leaves basal, 5−6 per culm, to 30 cm long, 0,5 mm wide, distichous, ligulate; *sheath orifice* with long pale *hairs*, sheath often reddish; *inflorescence capitate* (the only species with this character in the genus) with 2−12 spikelets; these ovoid, with many reddish brown-black spirally arranged elliptic glumes (3,5−5 × 1−2 mm).

Sheltered wet grasslands; 1370−1950 m alt.

NEMUM CAPITATUM

Very close to *N. bulbostyloides*.

N. equitans (Kük.) J. Raynal 31. VII. 1973, Lye 9. XI. 1973; Raymond in Naturaliste Canad. 99: 27–28, 1972; Larridon & al. in Belg. J. Bot. 141: 167 (in table), 168 (map), 2009; Roalson & al. in Taxon 67: 642, 2018; idem in Phytotaxa 395: 204, 2019. – Icon.: R. E. Fries, Wiss. Ergebn. Schwed. Rhod.-Kongo Exped. 1911–12, 1: 7, 1921 (under *Scirpus*); Raymond in Mém. Jard. Bot. Montréal 55: 36, 1962; Raynal in Adansonia, Sér. 2, 13: 151, 1973; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 65, 2017.

bas.: *Scirpus equitans* Kük.

syn.: *Bulbostylis equitans* (Kük.) Raymond

Perennial herb; rhizome 1–2 mm ∅, covered with silver-grey, tightly imbricate scales; culms 30–85 cm tall, 1 mm ∅, obtuse-angled; leaves basal, 2/3 of length of culm, filiform; sheaths to 8 cm long with long hairs at orifice; inflorescence anthelate, corymbose, with rays of unequal length; spikelets (1–)4–20, single and pedunculate, or fasciculate and sessile, elliptic, 8–11 mm long, subacute; glumes pale reddish-brown, ovate, to 4–5 mm long, ± mucronate (0–1,6 mm), ciliate; *style trifid*; *nutlet trigonous*. – With habit of a *Bulbostylis*.

Wet ground and grassland with *Xyris* near river; grassy savanna; swamp at waterfall; bogs; 960 – c. 1500 m alt.

N. megastachyum (Cherm.) J. Raynal; Larridon & al. in Belg. J. Bot. 141: 164 (in table), 165 (map), 2009; Onana & Cheek, Red Data Book flow. pl. Cameroon: 368, 2011; Onana, Fl. Cameroun 40: 224, 2013. – Icon.: Raynal in Adansonia, Sér. 2, 13: 149, 1973.

bas.: *Scirpus angolensis* C. B. Clarke 1894 var. *megastachyum* Cherm. 1931.

syn.: *Bulbostylis megastachya* (Cherm.) Larridon & Roalson (Phytotaxa 395: 204, 2019), nom. inval., and Phytotaxa 420: 300, 2019 non *B. megastachys* (Ridl.) C. B. Clarke 1894; *B. brunneoacuminata* Larridon & Roalson, Phytotaxa 420: 300, 2019.

Densely tufted, robust, strongly rooted herb to 80 cm tall; culms c. 1 mm ∅; leaves basal, curving, 25–35 cm long, 1–1,5 mm wide, sheaths wider; inflorescence anthelate, with (1–)4–5–7 subglobose spikelets, each c. 1 cm ∅; peduncles subsessile (1 per inflorescence) or to 3,5 cm long; glumes reddish-brown (rarely blackish), oblong, 3–6 × 2–3 mm, with mucro to 2,5 mm long, margins ciliate. Near *N. atracuminatum* [with culms to c. 45 cm long, 0,5 mm ∅, 1–2(–5) spikelets with black glumes 1–3,5 × 1–2 mm, mucro to 1,2 mm long].

Inselbergs; bare, seasonally wet rock surfaces; pool on laterite; gravel; water holes in stones; *up to* 750 m alt.

N. raynalii S. S. Hooper ex Larridon & Goetgh. – Icon.: Belg. J. Bot. 141: 170, 168 (map), 167 (table), 2009.

syn.: *Bulbostylis raynalii* (S. S. Hooper ex Larridon & Goetgh.) Larridon & Roalson, Phytotaxa 395: 204, 2019.

Perennial herb with seriate well-developed *rhizomes 3–4 mm* ∅ covered with relatively large, slightly overlapping brown scales; culms c. 65 cm long, *2,5 mm* ∅; leaves 5–6 per culm, to 40 cm long, c. 1 mm wide, basal, distichous, involute, ligulate, ending in sharp ensiform tips; sheath orifice with a bundle of long pale hairs; inflorescence compound anthelate with 13–22 spikelets; these elliptic-ovoid, with many reddish-brown, spirally arranged ovate glumes (2,5–2,75 × 2–2,5 mm), strongly hirsute on margins; nutlets unknown.

Boggy ground over exposed laterite.

Only known from one specimen collected in 1938.

NEMUM

N. spadiceum (Lam.) Desv. ex Ham.; Simpson & Inglis in Kew Bull. 56: 329, 2001; Akoègninou & al., Fl. analyt. Bénin: 108, 2006; Lisowski, Fl. Rép. Guinée 1: 406, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 53, 2012 (map by Schmidt & al. in Phytotaxa 304: 150, 2017). – Icon.: Berhaut, Fl. ill. Sénégal 9: 280, 1988; Belg. J. Bot. 141: 160 (table), 161 (map), 172, 173 (table subspp.), 2009; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 753, 2010; Browning & Goetghebeur, Sedge genera Africa & Madag.: 65, 2017. – Cf. Note below.

bas.: *Eriocaulon spadiceum* Lam.

syn.: *Scirpus spadiceus* (Lam.) Boeckeler 1870, nom. illeg., non L. 1753, nec Phil. 1857; *S. briziformis* Hutch.; *S. angolensis* C. B. Clarke var. *briziformis* (Hutch.) S. S. Hooper; *Schoenus spadiceus* (Lam.) Vahl 1805; *Bulbostylis spadicea* (Lam.) Larridon & Roalson, Phytotaxa 395: 204, 2019; *Nemum parviflorum* Lye

Tufted annual herb; culms 10–20–30 cm long, 0,2–0,6–0,9 mm ∅; leaves to 20–30 cm long, c. 0,25–0,5 mm wide, basal, spirally arranged, ± involute, eligulate; sheath orifice with a bundle of long pale hairs; with a single spikelet on each culm, spikelet cylindrical-ovoid, with many (pale) reddish-brown, spirally arranged glumes (1,5–3,5–4 × 0,5–2 mm).

Ephemeral wetlands (marshes, flooded areas, wet grasslands); sandy, rocky or laterite soil; inselbergs (Porembski & Brown in Candollea 50: 359, 1995); 350–1850 m alt.

Comprises 2 subspp.: – subsp. **spadiceum**, with shorter and narrower leaves (20 cm × 0,25 mm, not 30 cm × 0,5 mm), distributed in W. Africa; – subsp. **spadolense** Larridon & Goetgh. [syn.: *Bulbostylis spadicea* subsp. *spadolensis* (Larridon & Goetgh.) Larridon & Roalson] with somewhat larger leaves, endemic to Central African Republic, Zaire.

Note: The illustrations figuring in: Lye, Bot. Not. 126: 328, 1973; Lye, Lidia 2: 36, 1989; Haines & Lye, Sedges & rushes E. Afr.: 130, 1983, are all drawn from specimen Robinson s. n. (Zambia, Kasama). As Larridon & al. (Belg. J. Bot. 141: 173, 2009) already pointed out, this drawing is based on a specimen of *N. angolense*.

SYNONYMS:

Nemum bulbostylidoides (S. S. Hooper) J. Raynal, orth. mut.
= **Nemum bulbostyloides**
bulbostylidoides sensu Jaeger & Adam 1981 p.p.
= **N. capitatum**
parviflorum Lye = **N. spadiceum**

(OPETIOLA)

Opetiola myosuroides Gaertn. = **Cyperus cyperinus**

(OPHRYOSCLERIA)

Ophryoscleria racemosa (Poir.) Nees = **Scleria racemosa**

(OREOGRASTIS)

Oreograstis eminii K. Schum. = **Carpha eminii**

OXYCARYUM / *1*

syn.: *Cyperus* L. sect. *Oxycaryum* (Nees) Larridon; *Scirpus* Tourn. ex L. sect. *Oxycaryum* (Nees) Beetle 1944; *Scirpus* sect. *Cubenses* Cherm. in Humbert, Fl. Madag., fam. 29: 156, 1937, nom. nud. (See Reynders & al. in Taxon 60: 893, 894, 2011).

Monotypic genus from W Tropical to Southern Africa, and tropical and subtropical America; characterized by many, spirally arranged glumes, dorsiventrally flattened dimerous gynoecia, and *Cyperus*-type embryo (Goetghebeur in Kubitzki, ed., Families & genera vascul. pl. IV: 169, 1998).

Oxycaryum cubense (Poepp. & Kunth) Palla 1908 [Lye 1971], incl. fa. *paraguayense* (Maury) Pedersen; Clarke & Mannheimer, Cyper. Namibia: 82 (map), 1999; Simpson & Inglis in Kew Bull. 56: 329, 2001; Akoègninou & al., Fl. analyt. Bénin: 108−109, 2006; Naczi & Ford, Sedges: uses…: 50−51, 2008; Larridon & al. in Pl. Ecol. Evol. 144: 330, 334, 350, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (map by Schmidt & al. in Phytotaxa 304: 155, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 104, 2015 (as *Cyperus blepharoleptos*). – Icon.: Lye in Bot. Not. 124: 283, 285, 1971; Haines & Lye, Sedges & rushes E. Afr.: 144, 1983; Berhaut, Fl. ill. Sénégal 9: 281−282, 1988; Troupin, Fl. Rwanda 4: 477, 1988; Candollea 45: 430, 1990; Gordon-Gray, Cyper. Natal: 138−139, 1995; Cook, Aquat. pl. book, ed. 2: 81, 1996; Fl. Eth. & Eritrea 6: 428, 1997; Cook, Aquat. & wetland pl. south. Afr.: 107, 2004; Fl. Trop. E. Afr., Cyper.: 127, 2010; Larridon & al. in Pl. Ecol. Evol. 144: 342−343, 2011 (details); Browning & Goetghebeur, Sedge genera Afr. & Madag.: 66, (2017).

bas.: *Scirpus cubensis* Poepp. & Kunth

syn.: *Angosporum cubense* (Poepp. & Kunth) Boeckeler; *Crepidocarpus cubensis* (Poepp. & Kunth) Klotzsch ex Boeckeler; *Kyllinga scirpina* Rchb. ex C. B. Clarke; ***Cyperus blepharoleptos*** Steud.; *Isolepis echinocephala* Oliv.; *Anosporum paraguayense* Maury; *Courtoisia olivacea* Boeckeler; *Pseudomariscus olivaceus* (Boeckeler) Rauschert; *Oxycaryum schinzii* (Boeckeler) Palla; *O. paraguayense* (Maury) Palla; *O. guianense* Palla; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial aquatic floating herb with horizontal stolons 5−20 cm long, c. 3 mm ∅, covered in ovate blackish scales 2−3 cm long and rooting at nodes; roots often very long, hanging in water; stolons producing new plants at their tips; culms 40−70 cm tall, 3−5 mm ∅, sharply triangular, glabrous, covered in lower part by inflated leaf sheaths to 12 cm long, ligule a rim of hairs; leaves basal (or nearly so), often purplish near base, linear, 40−90 cm long, 0,4−1 cm wide, midrib and margins with spine-like teeth; inflorescence an open umbel of 3−10 heads on stalks 0,1−4,5 cm long; heads globose, 0,5−1,5 cm ∅, each head with many tightly packed spikelets; involucral bracts leaf-like, to 30−60 cm long, 0,4−1 cm wide, each bract subtending 1 head; spikelets brown, terete, many-flowered, 3,5−6 × 2,5−5,5 mm; glumes stiff, acuminate, margins and apex thick; nutlets trigonous, conspicuously corky, buoyant, adapted to dispersal by moving waters.

Permanent water such as lakes, pools, swamps; lake and river edges; in up to 30 cm deep water; sometimes floating, forming extensive rafts or forming part of small drifting rafts of floating vegetation; common temporarily in suitable habitats; 0−1350 m alt.

Namibia, Botswana, S. Africa; Madagascar; tropical and subtropical America, from S USA, Mexico, Central America, S. America to Brazil, Paraguay, West Indies (Flora Mesoamericana

6: 448, 1994; Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012).

SYNONYMS: See under the species above.

(PACHYMITRA)

Pachymitra candida (Nees) Nees ex Boeckeler
= **Rhynchospora candida**

(PAPYRUS)

Papyrus aequalis (Vahl) Bojer = **Cyperus prolifer**
antiquorum Willd. = **Cyp. papyrus** subsp. **papyrus**
auricomus (Sieber ex Spreng.) Schrad. = **Cyp. digitatus** subsp. **auricomus**
laxiflorus Spreng. = **Cyp. prolifer**
madagascariensis Willd. = **Cyp. papyrus** subsp. **madagascariensis**
mossambicensis Parl. = **Cyp. papyrus** subsp. **papyrus**

(PENTASTICHA)

Pentasticha madagascariensis Turcz. = **Fuirena stricta** subsp. **stricta**

(PLATYLEPIS)

Platylepis brasiliensis Kunth = **Ascolepis brasiliensis**
capensis Kunth = **A. capensis**
dioica Steud. = **A. capensis**
guianensis Nees = **A. brasiliensis**
leucocephala Nees = **A. brasiliensis**
xanthocephala Nees = **A. brasiliensis**

(PRINCIPINA / *1*)

Principina Uittien 1935.

Genus variably placed: Koyama (1961) included it in *Hypolytrum* Pers., but later put it in *Mapania* Aubl. The latest checklist of *Cyperaceae* (Roy. Bot. Gard., Kew, consulted in 2017) admits *Principina* as a separate genus (Mesterházy & Browning in Kew Bull. 69/3: § 9532: 1−4, 2014).

(**Principina grandis** Uittien) – Icon.: Kew Bull. no. cit.: 2, 2014; Goetghebeur in Kubitzki, ed., Families & genera vascul. plants: 160, 1998; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 67, (2017).

syn.: *Hypolytrum grande* (Uittien) T. Koyama; *Mapania grandis* (Uittien) T. Koyama

Perennial robust herb; rhizome c. 1 cm ∅; culm erect, central, to 1,8 m tall; basal leaves numerous, linear, to 1,1m long, 3-nerved, nerves minutely scabrous beneath; cauline leaf 1, to 50 cm long; inflorescence corymbose-paniculate, whorled, narrowly oblong, 12,5 cm, internodes trigonous, the first 8,5 cm, the second 2 cm, the third 1 cm; number of branches of the whorl from below 1−8−7−5; branches to 1,5 cm long, with 1−3 spikes; these c. 5 × 3, 5 mm, many-flowered; floral bracts united into a bladder-like structure.

Open rockface (of igneous volcanic rock, trachyte mount), a shaded cliff, with soil only in the cracks, in dense rain-forest; 428−670 m alt.

Collected on Príncipe in 1932 by Exell, then rediscovered on S. Tomé by Mesterházy in 2007. – "Both islands are situated north of the equator in the Gulf of Guinea, approximately 140 km apart". This endemic plant seems to be rare but in places difficult to reach and far from settlements.

Anthers and nutlet not seen by Mesterházy & Browning.

(PSEUDOLIPOCARPHA)

Pseudolipocarpha Vorster, gen. ined.
Pseudolipocarpha paradoxa (Cherm.) Vorster 1978, unpubl. combin. = **Alinula paradoxa**

(PSEUDOMARISCUS)

Pseudomariscus cyperoides (Roxb.) Rauschert = **Courtoisina cyperoides**
olivaceus (Boeckeler) Rauschert = **Oxycaryum cubense**

(PSILOCARYA)

Psilocarya candida Nees = **Rhynchospora candida**
eximia (Nees) D. B. Ward = **R. eximia**
schiedeana (Kunth) Liebm. = **R. eximia**
teneriffae Steud. = **R. contracta**

(PTEROCYPERUS)

Pterocyperus esculentus (L.) Opiz = **Cyperus esculentus**

(PTEROLEPIS)

Pterolepis litoralis (Schrad.) M. R. Almeida, incl. subsp. *subulatus* (Vahl) M. R. Almeida = **Schoenoplectus subulatus**
scirpoides Schrad. 1821 = **Sch. subulatus**

(PTEROSCLERIA)

Pteroscleria longifolia Griseb. = **Diplacrum capitatum**

PYCREUS / *63*

syn.: *Cyperus* L. subgen. *Pycreus* (P. Beauv.) A. Gray

Cosmopolitan genus of c. 120 species with a mainly African and Madagascan distribution, and with a high resemblance with the *Cyperus* C_4 species (Reynders & al. 2007; Pereira-Silva & al. in Syst. Bot. 43: 741, 2018). *Pycreus* differs from the latter in its laterally compressed pistils with only two style branches (a character shared with *Kyllinga* and *Queenslandiella* which have, however, deciduous spikelets). The inflorescence is open anthelate to capitate, with partial inflorescences ± open spike-like, with few to many sessile spikelets in the axil of glume-like bracts. Spikelets with distichous deciduous glumes, each subtending a floret (bisexual). The achenes are arranged in a single row down the two opposite sides, like small discs set on edge. The rachilla is 4-sided (in *Cyperus* flattened). The achenes and their bracts are shed gradually from the bottom up, exposing the scarred rachilla (Reynders & al. in Taxon 60: 890–893, 2011; Goetghebeur in Kubitzki, ed., Families & genera vascul. plants: IV: 172, 1998; Browning & Goetghebeur, Sedge genera Africa & Madag.: 69, 2017).

Pycreus species occur in almost all kinds of habitats but are often present in ephemeral flush communities on rock outcrops (Porembski & Watwe in Phytocoenologia 35: 389–401, 2005).

"… identification of species may prove difficult. Knowledge of plants in the wild is advantageous as growth form, nature of underground organs and spikelet colour are aids in accurate naming" (Gordon-Gray, Cyper. Natal: 137, 1995).

Several species in our area are poorly known: no ecology recorded for 5 species, and 12 species (= ±19 %) known only from the type gathering, and one from 2 gatherings only.

MUASYA, A. M. & al. (2002). Phylogenetic relationships in Cyperus L. s.l. (Cyperaceae) inferred from plastid DNA sequence data. *Bot. J. Linn. Soc*. 138: 145–153.

RAYNAL, J. (1973). Notes cypérologiques: 19. Contribution à la classification de la sous-famille des Cyperoideae. *Adansonia, Sér. 2*, 13: 145–171 [164–165].

REYNDERS, M. & al. (2007). Phylogeny and evolution of the mainly African genus Pycreus (Cyperaceae), based on molecular and morphological data. *In:* ACHOUNDONG, G., ed., *XVIII*th *AETFAT Congress 26 February – 2 March 2007, Yaoundé, Cameroon, Abstracts*: 46. L'Herbier National du Cameroun, Yaoundé.

REYNDERS, M. & al. (2010). Do you understand the fibrillous Pycrei (Cyperaceae) ? *Scripta Bot. Belg*. 46 (AETFAT XIX): 444.

REYNDERS, M. & al. (2011). Nomenclature and typification of names of genera and subdivisions of genera in the Cypereae (Cyperaceae): 3. Names in segregate genera of Cyperus. *Taxon* 60: 885–895 [890–893].

VRIJDAGHS, A. & al. (2011). Morphology and development of spikelets and flowers in Cyperus and Pycreus (Cyperaceae). *Pl. Ecol. Evol*. 144: 44–63 [51–61].

Pycreus acaulis Nelmes, Kew Bull. 10: 91, 1955, non *Cyperus acaulis* Steudel 1842.

syn.: ***Cyperus acaulescens*** Reynders

Annual herb *without stem* or nearly so and hidden beneath the inflorescence, which consists of crowded spikelets situated among leaves just above a mass of fibrous roots; leaves and leafy bracts arising from among and below the spikelets and from exceeding to very much exceeding them in length, subfiliform; spikelets sessile or subsessile, compressed, ovate, 3–6 × 2–3,5 mm, 6–14-flowered.

Pond, pure peat soil.

Only known from the type collected in 1952.

The stemless condition is rare in *Cyperaceae*.

P. acuticarinatus (Kük.) Cherm.; Lowe & Stanfield, Fl. Nigeria: Sedges: 105, 1974; Lisowski, Fl. Rép. Guinée 1: 407, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (map by Schimdt & al. in Phytotaxa 304: 173, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Raymond in Garcia de Orta 11: pl. I facing p. 378, 1963 (as *Cyperus crustaceus*).

bas.: ***Cyperus acuticarinatus*** Kük.

syn.: *Cyp. macranthus* Boeckeler var. *mucronatus* (Kunth) Kük. fa. *acuticarinatus* (Kük.) Kük.; *Cyp. crustaceus* Raymond; *Pycreus angulatus* sensu Fl. W. Trop. Afr., ed. 1, non Nees

Herb growing in tufts from a stout blackish rhizome; leaves basal, numerous, < 3 mm wide, shorter than the flowering stems (30 – c. 60 cm tall); inflorescence a cluster of spikes, each with a few spikelets usually arranged singly along a rhachis which may be shorter than the individual spikelets; clusters 2–4 cm ∅; spikelets with a saw-toothed outline, 1–1,5 cm long, 2–3 mm ∅, brown, channelled.

Swampy grassland in savanna region; humid rice-fields.

P. aethiops (Welw. ex Ridl.) C. B. Clarke; Burrows & Willis, Pl. Nyika Plateau, Malawi: 301, 2005; Lisowski, Fl. Rép. Guinée 1:

407, 2009; Fl. Trop. E. Afr., Cyper.: 301−302, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (sine loc.); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 276, 1983 (under *Cyperus*); Fl. Eth. & Eritrea 6: 482, 1997 (idem).

bas.: ***Cyperus aethiops*** Welw. ex Ridl.

syn.: *Cyp. aethiops* var. *tessmannii* Kük. and var. *aberdarensis* (Kük.) Kük.; *Cyp. aberdarensis* Kük.

Perennial herb to 90 cm tall; culms slightly swollen at base, 21−82 cm long, 0,8−2,2 mm ∅, trigonous, smooth, base surrounded by wide blackish leaf sheaths (4−9,5 cm long); blade linear, folded, stiff, sometimes channelled, 18−37 cm × 1,2−3,8 mm, acute, apex ± scabrid; inflorescence simple to compound with primary branches 2−4, 1−3 cm long; spikelets loosely to densely arranged in digitate clusters, sometimes on an elongated axis, the clusters sessile and at end of primary branches; spikelets 8−20 to many per cluster, linear, 0,7−1,5 cm × 1,5−1,9 mm.

Brook; swampy grassland; humid savanna on sand; 900−3050 m alt.

Botswana.

Near *P. nuerensis*. According to Reynders in Phytotaxa 166: 41, 2014, perhaps conspecific with *P. cooperi*.

P. africanus (S. S. Hooper) Reynders 2010; Lowe & Stanfield, Fl. Nigeria: Sedges: 105−106, 1974 (as *Pycreus divulsus* subsp. *africanus*). – Icon.: Fl. Eth. & Eritrea 6: 486, 1997 (as *Cyperus divulsus*).

bas.: *Pycreus divulsus* (Ridl.) C. B. Clarke subsp. *africanus* S. S. Hooper

syn.: ***Cyperus africanus*** (S. S. Hooper) Reynders 2014.

Annual tufted herb; culms 5−30 cm long, 0,5−2 mm ∅, obtusely 3-angled, glabrous; leaf blades 3−15 cm long 0,5−2 mm wide, flat, margin and midrib scabrid at least near tip; inflorescence a spike of *2−5 sessile* spikelets, *each subtended* by a *leafy involucral bract* (the largest 4−15 cm long); spikelets broad, fat, 0,6−1,5 cm × *3−4 mm*, somewhat compressed, distant or rather crowded; glumes 2,5−4 mm long, yellow-brown to brown, margin narrow, pallid, and with 3−5 green dorsal nerves.

Marsh; open (seasonally wet) grassland; 1350−1680 m alt.

Unique in its few large spikelets, each sessile in the axil of a bract and arranged in a spike (fide Fl. W. Trop. Afr., ed. 2, 3/2: 302, 1972).

Near *P. divulsus* (syn. *Cyperus divulsus* Ridl.) from Madagascar but: achene with smooth surface, and flowers with 3 stamens; "but in other respects the continental African material agrees well with the Madagascan type" (Kew Bull. 26: 580, 1972). – Could be confused with *Abildgaardia ovata*.

P. afrozonatus Lye 1981.

syn.: ***Cyperus zonatus*** Kük., non *Pycreus zonatus* Cherm. 1921, nec *Cyperus zonatissimus* Kük. 1936.

Annual herb; culms several, tufted, setaceous, 2−4 cm tall, flattened-three-angled, deeply grooved, with few leaves at base; leaves shorter than culms, very narrow, folded, sheaths brown; inflorescence a simple anthela with 1−3 rays to 1 cm long, each with 3−7 spikelets at apex; spikelets rather densely spicate, linear, 4−10 × c. 1 mm, 12−20-flowered; glumes ± densely imbricate, ovate-subobtuse, c. 1 mm long, dirty white, with 3 green dorsal nerves; nutlet oblong-elliptic, brown, c. 0,5 mm long, transversely banded.

Ecology not recorded; ? humid places.

Known from only 2 gatherings (Schlechter 12577, Chevalier 27783).

P. altus (Turrill) Lye

bas.: *Juncellus altus* Turrill

syn.: ***Cyperus praealtus*** Kük. 1936, non *Cyperus altus* Nees 1834 (= *Cyp. exaltatus* Retz.).

Perennial herb with shortened rhizome; culms to 90 cm tall, ± terete below, slightly 3-angled above, glabrous; leaves setaceous, 40−50 cm long, 1 mm wide, glabrous, smoot; sheaths membranous, glabrous; inflorescence a simple anthela with 3−5 rays to 8 cm long or sometimes with sessile spikes; spikes with 4−9 spikelets, clustered, oblong-lanceolate, 0,5−1,2 cm × 3 mm, many-flowered; glumes oblong-ovate, ± obtuse, 3 × 1,7 mm, chestnut coloured, glabrous; nutlet glabrous, 1,5 × 1 mm.

Ecology not recorded, growing on River Tiengo (S Angola).

Very similar to *Pycreus mundii* Nees but: habit more erect; leaves fewer, narrower; spikelet structure (the wide side of nutlet facing the spikelet axis, a *Juncellus* character); nutlet larger.

P. atribulbus (Kük.) Napper; Fl. Trop. E. Afr., Cyperaceae: 301, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 279, 1983 (under *Cyperus*); Gordon-Gray, Cyper. Natal: 140,

1995 (nutlet).

bas.: ***Cyperus atribulbus*** Kük.

Perennial herb with sometimes a short rhizome; culms tufted with thick, somewhat bulbous bases surrounded by fibrous remains of old sheaths; culms 30−80 cm long, 1−2,3 mm ∅, trigonous, smooth; leaves many, crowded near culm-base; sheath pale green to brown, 2−6 cm long; blade linear, plicate, 12−40 cm × 2−4 mm, acuminate, apex scabrid; inflorescence simple to compound with primary branches 3−9, 1−10 cm long; spikelets in loose clusters on elongated axis at end of primary or secondary branches; spikelets to 30 per cluster, linear, 0,8−2,5 cm × 0,8−1,5 mm; glumes golden yellow, elliptic, c. 2 × 1 mm.

Seasonally wet grasslands and pans; river sides; ditches; 0−1050 m alt.

S. Africa.

Close to *P. intactus* (Vahl) J. Raynal (S. Africa, Madagascar, etc.). Similar to *P. polystachyos* var. *laxiflorus*, in which remains of old leaf sheaths surrounding culm base are missing (fide Gordon-Gray, o.c.).

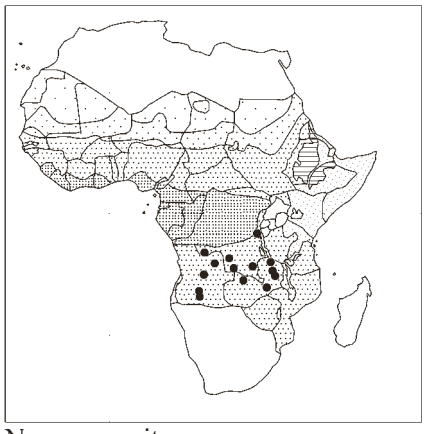
P. atronervatus (Boeckeler) C. B. Clarke – Icon.: Fl. Eth. & Eritrea 6: 486, 1997.

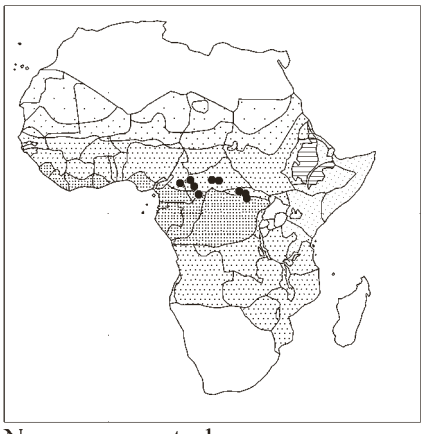
bas.: ***Cyperus atronervatus*** Boeckeler

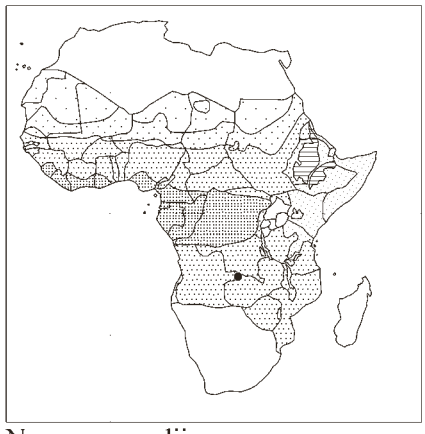
syn.: *Cyp. atronervatus* var. *minor* Boeckeler, and subsp. *angustifolius* Lye

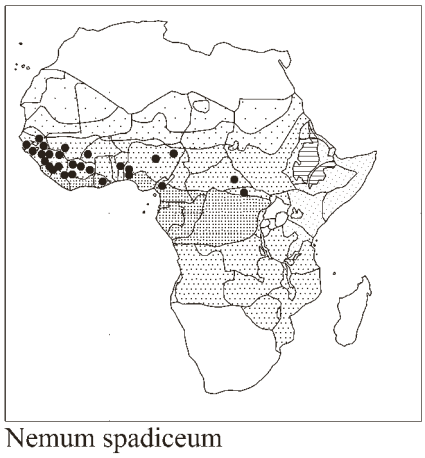
Perennial or rarely annual (subsp. *angustifolius*) herb with filiform or robust stolons rooting at nodes, often with the stems floating at water surface, roots anchored in mud; culms 5−50 cm long, 0,5−3 mm ∅, 3-angled; leaf blades to 30 cm long, 0,5 cm wide, flat; inflorescence a dense cluster of spikelets 1−2,5 cm ∅, rarely consisting of 1−4 spikelets; these ± linear, 0,5−1,6 cm × 2−5 mm, flattened, grey-black; glumes 2−6 mm long, green or pallid with *many prominent black lines*.

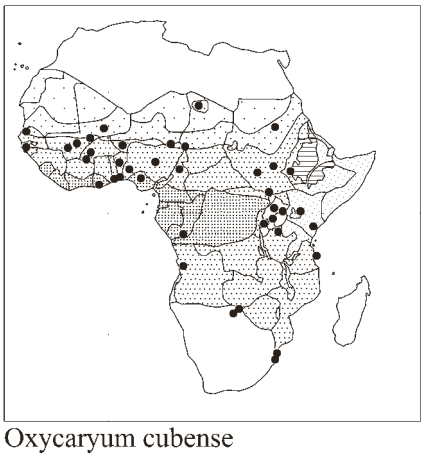
Wet swamps; lake margins; often semi-floating; flooded water meadows; 1800−2850 m alt.

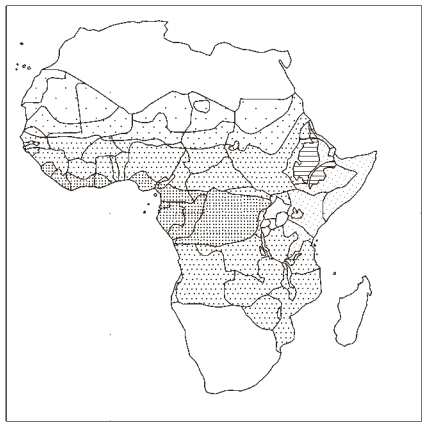

Nemum equitans

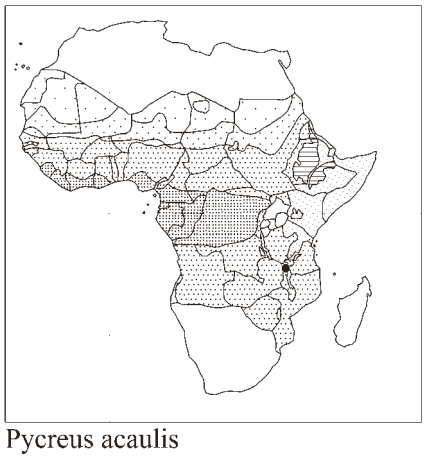

Nemum megastachyum

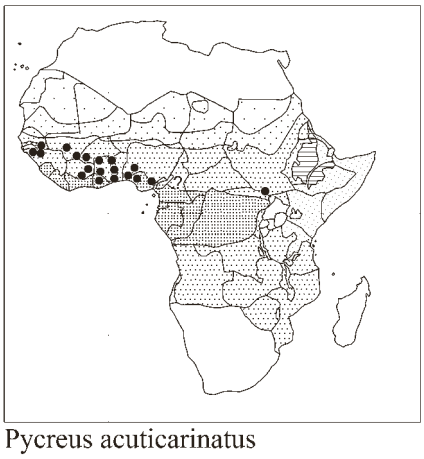

Nemum raynalii

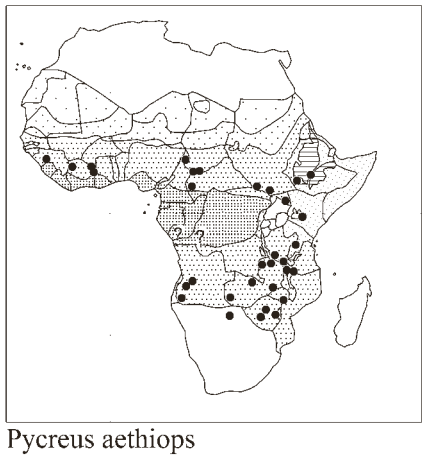

Nemum spadiceum

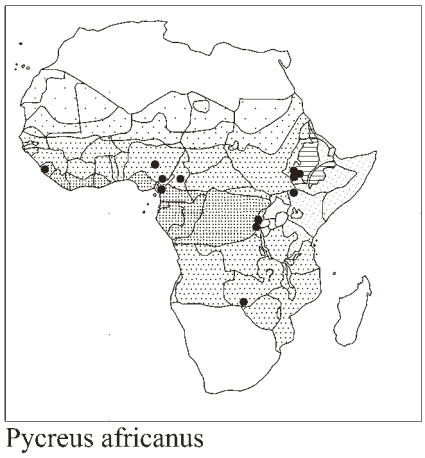

Oxycaryum cubense

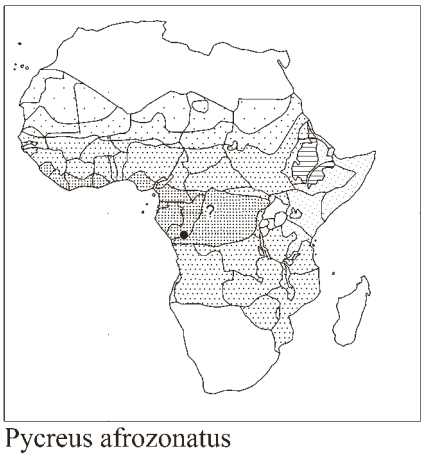


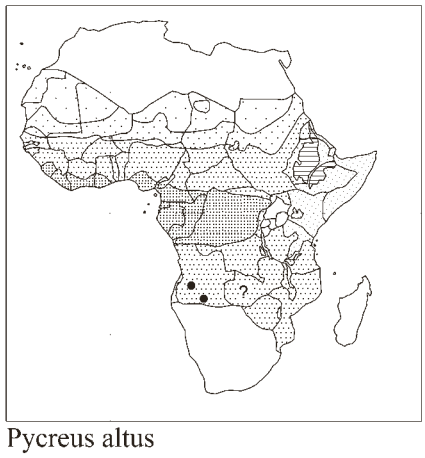

Pycreus acaulis


Pycreus acuticarinatus


Pycreus aethiops


Pycreus africanus


Pycreus afrozonatus


Pycreus altus

Two subspecies are described by Lye under *Cyperus atronervatus*: – subsp. **atronervatus**; – subsp. **angustifolius** Lye, from S of Addis Ababa (Entoto area) in flooded water meadows, 2500 m alt.

P. atrorubidus Nelmes

syn.: ***Cyperus atrorubidus*** (Nelmes) Raymond; non *Pycreus atrorubidus* sensu auctt. Afric. occid.: Lisowski, Fl. Rép. Guinée 1: 407, 2009; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 150, 2010. – Icon.: Adam, Fl. descript. Mts Nimba 6: 2141, 1983. All = **P. rubidomontanus.**

Annual herb, ± caespitose, glabrous, 4−20 cm tall; culms erect, ± 3-gonous; leaves 6−8 per culm, all basal, filiform, 5−8 cm × 0,5−1 mm; sheath reddish; inflorescence a simple anthela, a sessile cluster *appearing lateral*, at 4 cm below apex of inflorescence axis, and a suberect bract 2 cm long; spikelets 1−10 per cluster, flattened, ovate, 5−10 × c. 2 mm, apex acute, 10−18-flowered; glumes c. 2 mm long, dense, ovate, dark red-black, margins yellow.

Shallow moist peaty soil overlying laterite; shallow hollows on rocks; peat-bog on ferrugineous conglomerate; damp places; dried-up hollow; sometimes in stands; 450−1900 m alt.

"The "seeds" (achenes) of these [i.a. *P. atrorubidus*] sedges must be highly resistant to heat for they successfully withstand about six months dessiccation in full exposure to sunshine" (Nelmes in Kew Bull. 6: 319, 1952).

Confused with *P. rubidomontanus*.

P. capillifolius (A. Rich.) C. B. Clarke, incl. var. *major* Cherm.; Lisowski, Fl. Rép. Guinée 1: 407, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012; Gereau & al., Lake Nyasa florist. checklist: 48, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 358, 1936; Lowe & Stanfield, Fl. Nigeria: Sedges: 106, 1974; Adam, Fl. descript. Mts Nimba 6: 2141, 1983; Haines & Lye, Sedges & rushes E. Afr.: 287−288, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 285, 1988; Troupin, Fl. Rwanda 4: 475, 1988; Fl. Eth. & Eritrea 6: 485, 1997 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 284, 2010.

bas.: ***Cyperus capillifolius*** A. Rich.

syn.: *Cyp. afzelii* Boeckeler; *Cyp. capillifolius* var. *major* (Cherm.) Kük.; *Pycreus setaceus* C. B. Clarke

Annual herb; culms tufted, 5−31,5 cm long, 0,4−1 mm ∅, trigonous, smooth; leaves to 20 cm long; sheath 2−4,5 cm long, brown; blade *narrowly linear* to *filiform*, 5−17 cm x0,6−1,2 mm, glabrous, apex acuminate (glabrous to minutely scabrid); inflorescence *appearing lateral*, capitate, 1−3 cm ∅, with 8−30 sessile spikelets per head, linear-oblong, 0,6−2 cm × 1,3−2 mm; glumes golden yellowish-brown.

Deep soils of hollows; humid places on quartzite; *Loudetia arundinacea* grassland with scattered trees, on rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals; shallow wet soils on rock; damp grassland; swampy areas; often on rock outcrops; stream edges; rice nurseries, ricefileds; roadsides; bare sands; slightly salt-tolerant; near sea-level to 2040 m alt.

Madagascar; Belize, Brazil.

"A very distinct species" (Fl. Trop. E. Afr., Cyper.: 284, 2010).

P. cataractarum C. B. Clarke; Lowe & Stanfield, Fl. Nigeria: Sedges: 105, 1974; Kuetegue & al. in PhytoKeys 121: 93−94, 95 (map), 2019. – Icon.: Fl. Gabon 44, Cyper.: 106, 2014 (nutlet; under *Cyperus*).

syn.: ***Cyperus cataractarum*** (C. B. Clarke) K. Schum. ex Engl.

Perennial, tufted herb with stout blackish rhizome; culms 5−40 cm long, 0,2−2 mm ∅, *trigonous*, glabrous; leaves numerous at base with lower sheaths pale brown-red, the higher green; blades 5−20 cm long, 0,5−2 mm wide, margin scabrid; inflorescence whitish, a cluster of spikes, each spike with a few spikelets usually arranged singly along a rhachis which may be shorter than the individual spikelets, in this case the inflorescence appears unbranched; the clusters are 2−4−5 cm ∅; spikelets ovate, 1−1,5 cm × 2−3 mm, brown.

Swampy grassland; rocky places in riverbed; riverbanks; submerged during high water periods; 0−550 m alt.

P. chrysanthus (Boeckeler) C. B. Clarke; Gordon-Gray, Cyper. Natal: 141, 1995; Clarke & Mannheimer, Cyper. Namibia: 93, 76 (map), 1999; Archer & Craven, Cyper. Namibia: 24, 2004.

bas.: ***Cyperus chrysanthus*** Boeckeler

syn.: *Cyp. chrysanthus* var. *occidentalis* Kük.

Tufted herb with stolons; culms 30−60 cm tall, compressed-trigonous; leaves all near the base of culms, ± as long as culms, 3−4 mm wide, with long sheaths; inflorescence a simple anthela 7,5 – c. 11 cm wide, with 5−7 rays; bracts 3−4, the lowest 7,5−20 cm long, leaf-like; spikelets 6−16 together, laxly spicate, ebracteate, *linear*, 12−16 × 2,5 mm, with parallel sides, *golden* yellow to cherry-red or chestnut, 16−22-flowered; glumes ovate, dense, mucronate.

Edge of river.

Namibia, S. Africa, Botswana, Lesotho, Swaziland.

P. cooperi C. B. Clarke; Gordon-Gray, Cyper. Natal: 141−142, 1995; Larridon & al. in Phytotaxa 166: 41, 2014 (as *Cyperus neocooperi*).

syn.: *Cyperus cooperi* (C. B. Clarke) Kük. 1934 (Bot. Not. 1934: 68, 1934), nom. illeg., and in Engler, Pflanzenreich IV. 20/101: 331, 1936, non *Cyp. cooperi* (C. B. Clarke) K. Schum. 1900 [= *Cyperus congestus* Vahl 1805 = *Mariscus congestus* (Vahl) C. B. Clarke 1897, a S. African plant]; ***Cyperus neocooperi*** Reynders 2014.

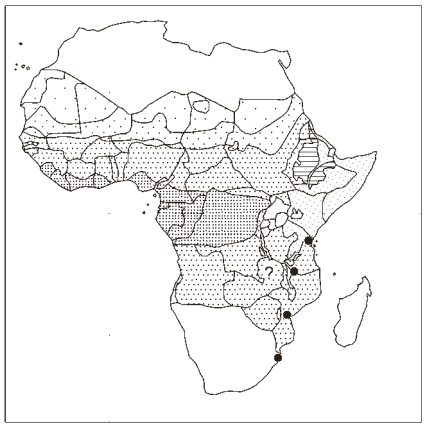
Perennial tufted herb with short thick rhizome; culms several, densely packed, *flexible*, 16−50 cm tall, bases enclosed in long *persistent dark brown* to black sheaths, with few leaves in lower part, the sheaths not breaking up into fibres; leaves longer than culms; inflorescence a simple contracted anthela, 1−2−3,75 cm ∅; bracts 2−3, the lower longer than anthela; rays short, or hardly visible with dense head-like clusters of dense blackish linear spikelets 6−12 × c. 2 mm; glumes dense, lanceolate-ovate, blackish red with yellowish keels which form pale narrow streaks; nutlet elongated elliptic, brown marked with dots.

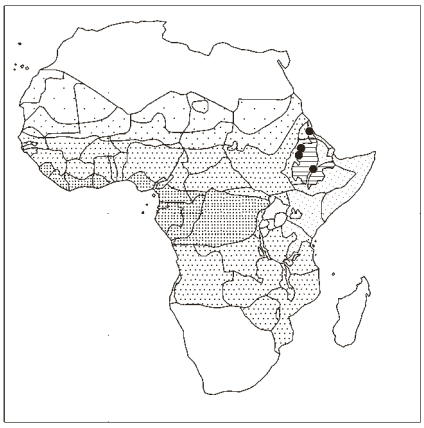
Edge of brooklet; swampy places; 1700−2000 m alt.

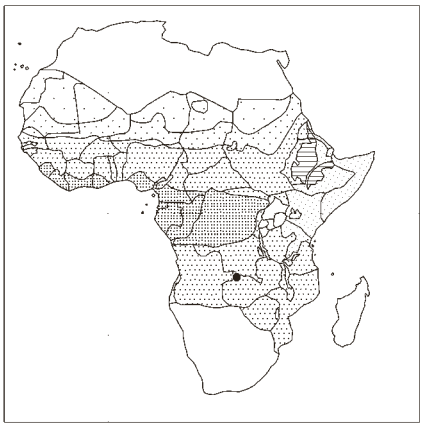
The specimen Gossweiler 2084 is given without locality in Angola by Kükenthal (l.c.), but this number corresponds with Gossweiler's time at Fort Princeza Amélia (from May 1905 onwards for c. 2 years).

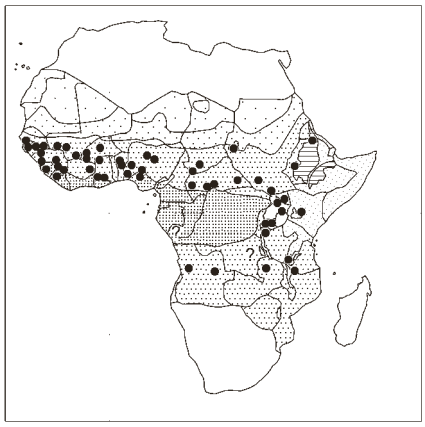
S. Africa, Lesotho, Swaziland.

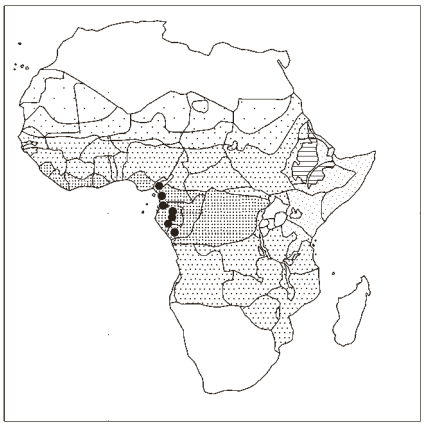
According to Reynders (l.c.) *Pycreus cooperi* could possibly be considered as conspecific with *P. aethiops*.

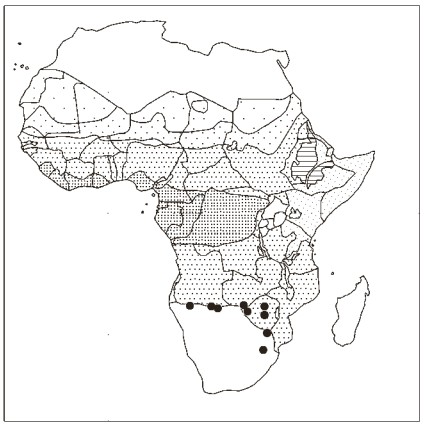

Pycreus atribulbus

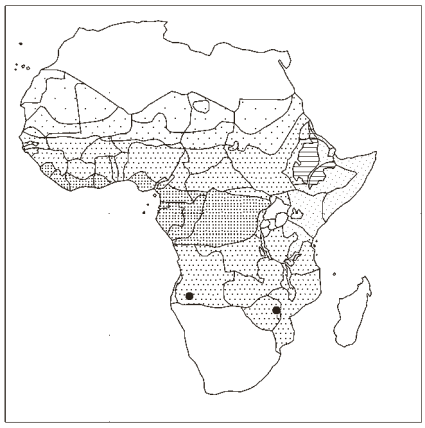

Pycreus atronervatus

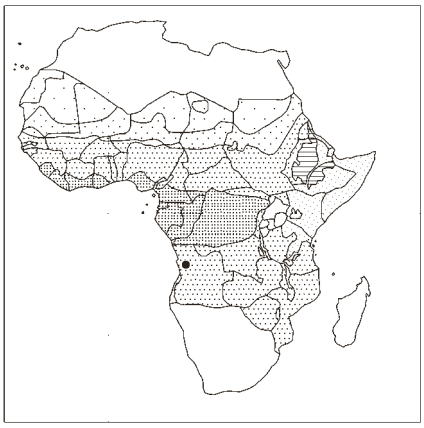

Pycreus atrorubidus

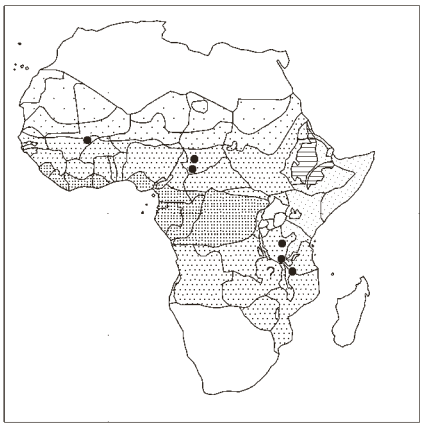

Pycreus capillifolius

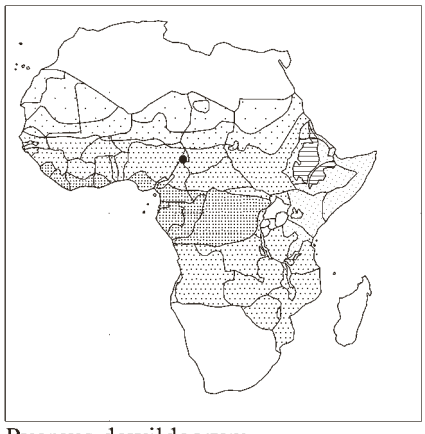

Pycreus cataractarum

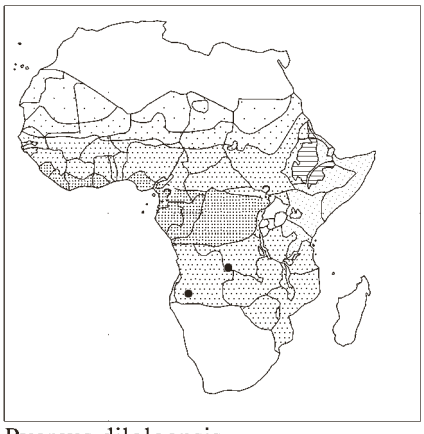

Pycreus chrysanthus

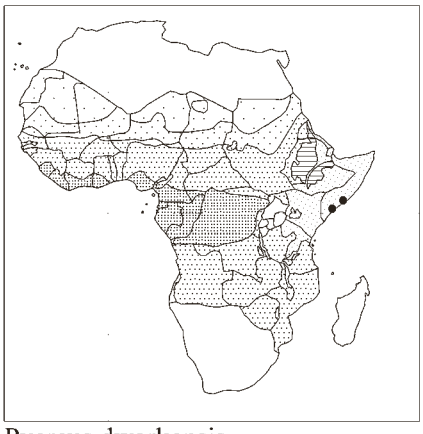

Pycreus cooperi


Pycreus cuanzensis


Pycreus demangei


Pycreus dewildeorum


Pycreus diloloensis


Pycreus dwarkensis

P. cuanzensis (Ridl.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 108, 1899.

bas.: ***Cyperus cuanzensis*** Ridl.

Perennial herb with short rhizome; culms 37−60 cm tall, decumbent at base but not bulbous; leaves nearly as long as culms, linear, flaccid, 3−4 mm wide; sheaths membraneous, lax, brown, entire; inflorescence a simple anthela with 1−2 rays, these ± sessile to 2 cm long; spikelets ± condensed into a head 3,3 cm high, linear-oblong, 8−15 × 2−4 mm, flattened, many-flowered; glumes lanceolate, whitish, with greenish keel.

Marshy meadows by river; 1050 m alt.

? Known only from the type (Welwitsch 6899) collected in 1857.

P. demangei J. Raynal; Fl. Trop. E. Afr., Cyper.: 278, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 284, 1983 (description below mostly cited from this).

syn.: ***Cyperus demangei*** (J. Raynal) Lye

Annual herb to 30 cm tall with *submerged leaves* and emergent inflorescence (neither leaves nor culms able to support themselves out of water); culms filiform, tufted, 2−20 cm long, 0,3−0,6 mm ∅, rounded to trigonous; leaf sheaths 1−2,5 cm long, pale brown, sometimes reddish-brown; blades filiform, 7−10,5 cm long, 0,5−1 mm wide, acuminate; inflorescence a simple lax anthela with primary branches 3−4, 1−4 cm long; spikelets in clusters, sessile and at end of primary branches, 1−4 per cluster, linear, 4−10 × 1,5−2 mm.

Seasonal pools; flooded plains and pans; to (1000−)1400 m alt.

Ecology similar to that of *P. waillyi*, which is, however, completely submerged except for its spikelets.

P. dewildeorum J. Raynal; Onana, Fl. Cameroun 40: 222, 2013 (under *Cyperus*).

syn.: ***Cyperus dewildeorum*** (J. Raynal) Lye

Described as close to *Pycreus lanceolatus* and *P. mortonii*, but differs from these by the longer surface cells of the nutlet; differs from *P. lanceolatus*, perennial, by its annual habit, open anthela, and 3 stamens; differs from *P. mortonii*, an annual, by its flattened beaked nutlets, longer glumes, and wider spikelets.

Marshy grassy site; c. 400 m alt.

Known only from the type collected in 1964 (N-most Cameroon). – Also present in Chad ?

P. diloloensis Kük. ex Cherm.; Kükenthal in Engler, Pflanzenreich IV. 20/101: 340, 1936; Figueiredo & Smith, Pl. Angola: 181, 2008; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015.

syn.: ***Cyperus diloloensis*** (Kük. ex Cherm.) Kük.; ? *Cyp. fibrillosus* sensu Friis & Vollesen, Biol. Skr. 51: 533, 2005, non Kük.

Perennial herb with short rhizome; culms 45 cm tall, trigonous, smooth, at base covered with old, *oblong-bulbous*, *dark brown* leaf sheaths *becoming fibrous* with age; blades much shorter than culms, very narrow, channelled, rigid; bracts 3, suberect-patent, channelled, the lower longer than anthela; this *almost spiciform*, with 5−6 spikelets; *lower spikelets solitary*, somewhat scattered; spikelets oblong, 10−16 × 3 mm, flattened, suberect, 14−18-flowered; glumes oblong-elliptic, 4 mm long, subacute, blackish brown, shining.

Seasonally inundated plain.

The two specimens from S. Sudan (Friis & Vollesen 1204) "require confirmation".

P. dwarkensis (K. C. Sahni & H. B. Naithani) S. S. Hooper; Kukkonen in Fl. Pakistan 206, Cyper.: 152, 2001. – Icon.: Hooper in Kew Bull. 40: 467, 1985; Thulin, Fl. Somalia 4: 144, 1995 (under *Cyperus*).

bas.: ***Cyperus dwarkensis*** K. C. Sahni & H. B. Naithani

Tufted annual herb; culms 1−8(−20) cm long, to c. 0,5 mm ∅, angular to ± terete, glabrous; leaves 3−4 per culm; sheaths reddish-brown, long, conspicuous; blades usually on the 2 upper sheaths, 2−5 cm long, to 0,5 mm wide, glabrous, strongly inrolled; inflorescence a dense head of 2−15 crowded spikelets and 1−2 erect, spreading leaf-like bracts to c. 8 cm long; spikelets linear-lanceolate, 5−12 × 2,5−3 mm, strongly compressed, variegated grey and reddish-brown, 15−25-flowered. – "The neat, silvery, many-flowered, somewhat julaceous spikelets give this small species a distinctive look" (Kew Bull. 40: 468, 1985).

Edge of stagnant pool; 200−300 m alt.

In coastal areas from Oman (Ghazanfar, Fl. Oman: 33, 2018), Pakistan, NW India (map in Kew Bull., l.c.). – Plant with a remarkable, spotted area, cf. *Urochondra setulosa*, *Poaceae* (Thulin, Fl. Somalia 4: 198, 1995).

Specimen from Oman formerly identified as *Cyperus rotundus* (Ghazanfar, l.c.).

P. elegantulus (Steud.) C. B. Clarke; Simpson & Inglis in Kew Bull. 56: 329, 2001; Fl. Trop. E. Afr., Cyper.: 303−304, 2010; Gereau & al., Lake Nyasa florist. checklist: 48, 2012. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 243, 1955; Haines & Lye, Sedges & rushes E. Afr.: 237, 1983 (as *Cyperus niger* subsp. *elegantulus*); Troupin, Fl. Rwanda 4: 475, 1988 (idem); Gordon-Gray, Cyper. Natal: 144, 1995 (as *Pycreus niger*; nutlet); Fl. Eth. & Eritrea 6: 481, 1997 (as *Cyperus elegantulus*); Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 111, 2001; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 343, 2008 (as *P. niger* subsp. *elagantulus*); Velayos & al., Fl. Guinea Ecuat. 11: 394, 2014 (as *P. niger* subsp. *elegantulus*).

bas.: ***Cyperus elegantulus*** Steud.

syn.: *Cyp. atronitens* Hochst. 1841, nom. nud., Hochst. ex A. Rich. 1851; *Cyp. melanocephalus* R. Br. 1814, nom. nud., non Miq. 1856; *Cyp. niger* Ruiz & Pav. subsp. *elegantulus* (Steud.) Lye; *Cyp. ischnocormus* Steud.; *Cyp. elegantulus* var. *submelanostachyus* Kük.; *Pycreus niger* (Ruiz & Pav.) Cufod. 1970 subsp. *elegantulus* (Steud.) Lye

Perennial herb with slender stolons, sometimes appearing annual without developed stolons; culms tufted, 20−70 cm long, 1,1−3 mm ∅, trigonous, smooth; leaf sheaths (pale) brown, 2,5−10,5 cm long; blades 2−4 per culm, linear, flattish-plicate, 10−35 cm × 2−4,7 mm, acute to acuminate, apex scabrid; inflorescence capitate or simple, when simple primary branches 1−5, 1−5,5 cm long; spikelets in dense clusters, sessile and at end of primary branches; spikelets 7−35 per cluster, to many in a head, ovoid, 3,5−14,5 × 1,6−2 mm; glumes black.

Swamps; river edges; wet forest margins; wet grasslands; (abandoned) plantations; track sides; rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*; seepage area in *Hagenia abyssinica* woodland; grassland plateau; riverine forest; swampy depressions in grassland; 800−3600 m alt.

Bioko/Fernando Poo; S. Africa; Saudi Arabia, Yemen (Wood, Handbook Yemen flora: 327, 1997).

The true *Pycreus niger* (Ruiz & Pavon) Cufod. is a plant from tropical and subtropical America.

P. felicis J. Raynal, Kew Bull. 26: 568, 1972; Lisowski, Fl. Rép. Guinée 1: 407, 2009.

syn.: ***Cyperus felicis*** (J. Raynal) Lye

Semi-aquatic herb with slender straggling branched stems (on the soil) putting forth shoots and roots at nodes; leaf blades filiform; inflorescence pseudolateral with 1−2 sessile spikelets, lanceolate, 5−12 × 3 mm; glumes ovate, 2 mm long; stamens 3; nutlet inflated, c. 2 × 2 mm.

Brook flowing out from a swamp with *Sacciolepis chevalieri*.

Known only from the type collected in 1956.

Near *P. demangei*, *P. waillyi*.

P. fibrillosus (Kük.) Cherm.; Fl. Trop. E. Afr., Cyper.: 296−297, 2010. – Icon.: R. E. Fries, Wiss. Ergebn. Schwed. Rhod.-Kongo-Exped. 1911−1921, 1: pl. 1 fig. 1−2, 1921 (type UPS), non Haines & Lye, Sedges & rushes E. Afr.: 278, 1983 (= *P. scaettae*); Larridon & al. in Phytotaxa 166: 42, 2014.

syn.: ***Cyperus fibrillosus*** Kük., excl. fa. *katangensis* (Cherm.) Kük., and var. *scaettae* (Cherm.) Kük., and var. *vanderystii* (Cherm.) Kük. (all = *Pycreus scaettae*).

Perennial, densely tufted herb; base of culms surrounded by many thick black fibres from old leaf sheaths to 16 cm high; culms 6−11 cm long, 0,6−0,7 mm ∅, rounded to somewhat trigonous, smooth; leaf sheath brownish-black or somewhat green, 3 cm long; blade folded or canaliculate, glabrous, linear, 7,5 cm × 1,1 mm, acute; inflorescence loosely capitate; spikelets in a loose digitate cluster; spikelets 4−7 per head, ovoid, 6,3−8,5 × 2−2,5 mm; *rachilla flexuous, hardly visible between the glumes*; "lower glumes mostly have 1−2 additional nerves on their wings" (Phytotaxa, l.c.).

Rocky secondary hillside miombo; dry forest on burnt soil; 1600 m alt.

Species limitation uncertain. "The current circumscription of *P. fibrillosus* is incorrect and in fact corresponds to *P. scaettae*… However, the immature UPS type does correspond to *P. scaettae* var. *katangensis* … An ETS1 molecular study shows *P. fibrillosus* is most related to *P. gracillimus*, a poorly known afro-alpine species with blackish glumes, while *P. scae(t)tae* is more related to *P. smithianus* and *P. cataractarum*, all characterized by white spikelets with a straight rachilla" (Reynders & al. in Scripta Bot. Belg. 46: 444, 2010).

P. flavescens (L.) P. Beauv. ex Rchb., excl. subsp. *laevinux* Lye (= *P. overlaetii*; see also comment under that species); Rendle, Cat. Welwitsch's Afric. pl. 2/1: 106, 1899; Renier, Fl. Kwango 1: 72, 1948; Clarke & Mannheimer, Cyper. Namibia: 93, 76 (map), 1999; Kukkonen in Fl. Pakistan 206, Cyper.: 152−153, 2001; Kukkonen in Taxon 53: 178, 2004 (typification); Naczi & Ford, Sedges: Uses…: 44, 2008 (under *Cyperus*); Lisowski, Fl. Rép. Guinée 1: 407, 2009 (incl. *P. fallaciosus* Cherm.); Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (map by Schmidt & al. in Phytotaxa 304: 173, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: C. B. Clarke in J. Linn. Soc. 21: 36, pl. 4/40−41, 1884 (under *Cyperus*); Kükenthal in Engler, Pflanzenreich IV. 20/101: 391 fig. 45 K-0, 1936 (as *Cyp. rehmannianus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 106, 1974; Haines & Lye, Sedges & rushes E. Afr.: 281, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 288, 1988 (subsp. *intermedius*, partial); Troupin, Fl. Rwanda 4: 473, 1988; Gordon-Gray, Cyper. Natal: 140, 1995 (nutlet); Fl. Eth. & Eritrea 6: 487, 1997 (under *Cyperus*); Boulos, Fl. Egypt 4: 399, 2005: Fl. Trop. E. Afr., Cyper.: 293, 2010; Vrijdaghs & al. in Pl. Ecol. Evol. 144: 59, 60, 61, 2011; Fl. Gabon 44, Cyper.: 109, 2012 (under *Cyperus*); Browning & Goetghebeur, Sedge genera Afr. & Madag.: 69, 2017.

bas.: ***Cyperus flavescens*** L.

syn.: *Chlorocyperus flavescens* (L.) Rikli; *Distimus flavescens* (L.) Raf. – See further under the subspecies below. Also World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual slender herb; culms tufted, 5−52 cm tall, 0,3−1,7 mm ∅, trigonous to ± rounded, smooth; leaves basal, shorter to longer than culm; sheath pinkish brown, pale brown to pale reddish-brown, sometimes tinged with purple, 1−6 cm long; blade flat to plicate, linear, 2−22 cm long, 0,5−3 mm wide, soft, acuminate, margins and midrib scabrous; inflorescence capitate or simple, umbel-like, with primary branches 0−5, unequal, 0−7 cm long; spikelets in digitate clusters, sessile and at end of primary branches, 3−14 per cluster and 15−40 in a head; spikelets linear-oblong, 0,6−2 cm × 1,8−3 mm, coloration variable, from pale yellowish-brown to deep dark red, the darker colours better represented at higher altitudes (Gordon-Gray, o.c.: 142); nutlet with faintly transversally undulate surface (with white silvery wavy lines; Boulos, o.c.).

Swamps, marshes; wet places by streams, riverbanks, lake shores; seepage over rocks; in shallow soil over rock outcrops; bare soil; wet grassland; small temporary waterhole in wooded grassland; riverine forest; seasonally humid meadows; sands; cultivations and cultivation edges; 0−2500 m alt. – Weed. "In any disturbed area where water is available" (Gordon-Gray, o.c.: 142).

Highly variable plant: in size, spikelet coloration.

Pantropical, subtropical, and in temperate regions, incl. Europe (from Portugal to Denmark) and the Baltic (Pellizari & Verloove in Webbia 72: 129, 134, 2017; Italy). – Namibia, S. Africa, Botswana, Lesotho, Swaziland; Madagascar; Madeira, Morocco, Algeria, Tunisia, Egypt; Yemen (Wood, Handbook Yemen flora: 327, 1997), Lebanon, Syria, Iraq, Turkey, C Asia, from N Iran – Pakistan – Kashmir (records from India, Karnataka and Vietnam are erroneous = determination wrong); USA (from Florida N to S Canada & W to Texas, Missouri), West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012), S. America. Introduced in E Australia.

Comprises 4 subspp., however "with the continuous range in plant form that constitutes *P. flavescens* in Natal, there seems no advantage in attempting establishment of infraspecific categories, their limits would be too vague" (Gordon-Gray, o.c.: 142). – We follow the main floras as we enumerate the infraspecific categories: – subsp. **flavescens** [syn.: *Pycreus fallaciosus* Cherm.; *P. flavescens* subsp. *fallaciosus* (Cherm.) Lye; *Cyperus fallaciosus* (Cherm.) Raymond; *Cyp. flavescens* subsp. *fallaciosus* (Cherm.) Lye; *Cyp. abyssinicus* Hochst. ex A. Rich.; *Cyp. flavescens* fa. *abyssinicus* (Hochst. ex A. Rich.) Kük.; *Cyp. flavescens* var. *abyssinicus* (Hochst. ex A. Rich.) C. B. Clarke; *Pycreus flavescens* var. *abyssinicus* (Hochst. ex A. Rich.) Cufod. (Malpighia 35: 64−65, 1939); *Chlorocyperus abyssinicus* (Hochst. ex A. Rich.) Rikli; *Cyperus durandii* Boeckeler]; a medium-sized to tall plant with golden yellow to golden brown glumes; widespread; – subsp. **intermedius** (Rikli) Lye [bas.: *Chlorocyperus intermedius* Rikli; syn.: *Pycreus intermedius* (Rikli) C. B. Clarke; *P. vicinus* Cherm.; *Cyperus intermedius* Steud., 1842, nom. illeg.; *Cyp. flavescens* subsp. *intermedius* (Rikli) Lye; *Cyp. subintermedius* Kük. 1936, incl. var. *vicinus* (Cherm.) Kük. and var. *angustisquamatus* Kük.; *Cyp. subintermedius* Lye in Haines & Lye, Sedges & rushes E. Afr.: 283, 1983, nom. nov. for *Cyp. intermedius* Steud.; *Pycreus lanceolatus* C. B Clarke 1894 and sensu Rendle in Cat. Afr. Pl.

Welwitsch 2: 107, 1899, non *Cyperus lanceolatus* Poir. 1806]; a medium-sized plant with brown glumes, treated as *P. intermedius* (Steud.) C. B. Clarke in Fl. Trop. E. Afr., Cyper.: 295−296, 2010, with the remark: "Differences from *P. flavescens* (and especially with var. *castaneus*) are difficult to find; this taxon is therefore questionable and requires more study"; occurs in Senegal (Raynal in Adansonia, N.S. 7: 320, 1967), Ethiopia, Tanzania, Angola, Madagascar; – subsp. **microglumis** Lye [syn.: *Cyperus flavescens* subsp. *microglumis* (Lye) Lye]; with golden brown small glumes (c. 1,6 mm long); with var. **castaneus** Lye [syn.: ***Cyperus flavescens*** var. ***rehmannianus*** (C. B. Clarke) Kük.; *Cyp. flavescens* var. *castaneus* (Lye) Lye, nom. illeg.; *Pycreus rehmannianus* C. B. Clarke; *P. flavescens* var. *rehmannianus* (C. B. Clarke) Govaerts; *P. flavescens* var. *castaneus* Lye; *Cyperus rehmannianus* (C. B. Clarke) Boeckeler ex Kuntze, incl. var. *bathiei* (Cherm.) Kük., var. *rigidiculmis* Kük., and fa. *minor* Kük.; *Pycreus bathiei* Cherm.]; with reddish-brown glumes; with a wide distribution from Cameroon to Uganda-Kenya, S-wards to S Africa, Angola, and Madagascar; – subsp**. tanaensis** (Kük.) Lye [bas.: *Cyperus tanaensis* Kük.; syn.: *Cyp. flavescens* subsp. *tanaensis* (Kük.) Lye; *Pycreus debilissimus* C. B. Clarke]; a small plant with a loosely capitate inflorescence with spikelets in sessile digitate clusters; known from Kenya (Tana River), Zambia, Angola; very few collections known.

Pycreus flavescens subsp. *laevinux* Lye is a synonym of *P. overlaetii* Cherm. ex S. S. Hooper & J. Raynal [syn.: *Cyperus overlaetii* (Cherm. ex S. S. Hooper & J. Raynal) Lye], described from Zaire. However, Haines & Lye (Sedges & rushes E. Afr.) cite *Cyperus overlaetii* from Tanzania, Ruaha Natl. Park, the specimen Bjørnstad 2600. According to Fl. Trop. E. Afr., Cyper.: 294, 2010, this gathering is probably misidentified and probably belongs to *Pycreus flavescens* subsp. *flavescens*.

Referring to *Cyperus flavescens* L. (= *Pycreus flavescens*) var. *castaneus* (Willd.) Pursh, non (Lye) Lye, it is a plant from S. Africa and subtropical Asia to Australia. *Cyperus flavescens* L. var. *rubromarginatus* Schrenk, and fa. *rubromarginatus* (Schrenk) Regel is a synonym of (*Cyperus sanguinolentus* Vahl =) *Pycreus sanguinolentus* (Vahl) Nees.

P. fluminalis (Ridl.) Rendle; Renier, Fl. Kwango 1: 72, 1948 (as *Pycreus monocephalus*); Cable & Cheek, Pl. Mt Cameroon: 155, 1998 (as *Cyperus smithianus*); Fl. Trop. E. Afr., Cyper.: 298, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 277−278, 1983; Fl. Gabon 44, Cyper.: 111, 2012 (as *Cyperus fluminalis*).

bas.: ***Cyperus fluminalis*** Ridl.

syn.: *Cyp. fluminalis* var. *longifolius* Cherm. ex Kük.; *Cyp. monocephalus* Baker 1887, nom. illeg., non Roxb. 1820; *Cyp. spiculosus* F. N. Williams 1904, nom. illeg., non Rchb. 1828; *Pycreus monocephalus* C. B. Clarke 1894 and var. *longifolius* Cherm. (not *longiflorus* !); *P. smithianus* sensu C. B. Clarke in Fl. Trop. Afr. 8: 301, 1902, non C. B. Clarke s. str.; *Cyperus smithianus* sensu Kükenthal in Engler, Pflanzenreich IV. 20/101: 349, 1936, non C. B. Clarke s. str.

Perennial herb sometimes with rhizome; culms tufted 21−39 cm long, 1,6−2,3 mm ∅, trigonous, smooth; leaves many at base; sheath pale brown, 1−8 cm long; blade stiff, linear, plicate, 5−20 cm × 1,5−5 mm, acuminate, apex scabrid; inflorescence densely capitate, spikelets sessile, many per head; spikelets ± linear, 7−25 × 2−3 mm.

Seasonally wet grassland; lake shores; swamp edges; riverbanks and other damp open habitats; sometimes submerged; growing right in the water along with reeds, *Pandanus welwitschii* and ferns; 0−1650 m alt.

? Bioko/Fernando Poo; Madagascar.

Often confused with *P. smithianus* from Zaire. Very similar to that species, which has, however, thicker and coarser leaves and glumes. According to Fl. Trop. E. Afr., l.c., all specimens from that area have been wrongly named *P. smithianus*.

(**P. fontinalis** Cherm.)

syn.: ***Cyperus fontinalis*** (Cherm.) Kük.

Under *Cyperus fontinalis* (p. 109) we discuss the relationships between this plant and *Pycreus sanguineosquamatus* Van der Veken (1955). The latter species is given as a synonym of *Cyperus fontinalis* in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, consulted in 2017.

Cyperus / *Pycreus fontinalis* occurs in Central Madagascar. *P. sanguineosquamatus* was described from S-most Zaire, Elisabethville, and is treated by us below under that name.

P. gracillimus Chiov.; Reynders & al. in Scripta Bot. Belg. 46: 444, 2010; Larridon & al. in Bot. J. Linn. Soc. 172: 113, 2013 (in table; Burundi).

syn.: ***Cyperus gracillimus*** (Chiov.) Kük.

Perennial densely tufted herb without stolons; culms filiform, c. 20 cm tall, 0,5 mm ∅, deeply furrowed, smooth; leaves numerous, filiform, shorter than culm, 0,7 mm wide; inflorescence a simple anthela forming a distichous dense spike of 4−5 solitary spikelets; these ovate, reddish-brown, shining, 5−10 × 3−4 mm; bracts to 4 cm long; glumes ovate, obtuse, 3−5 mm long, chestnut-reddish-blackish, 3−5 mm long with green keel.

Swampy plain in wet situation.

Said to be related to *P. nigricans*, *P. macranthus* Chiovenda (Ann. Bot. Roma 13: 58, 1914). Seems to be related to *P. fibrillosus*. "A poorly known afro-alpine species" (Reynders & al, l.c.).

Type (Bovone 75, collected in 1910) not seen by Kükenthal (Engler, Pflanzenreich IV 20/101: 393, 1936).

(***P. heterochrous*** Nelmes)

See under **P. poikilostachys** Nelmes below.

P. hildebrandtii C. B. Clarke, non *Cyperus hildebrandtii* Boeckeler 1880 (= *Mariscus hemisphaericus*). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 290, 1983 (as *Cyperus pseudo-hildebrandtii)*; Fl. Trop. E. Afr., Cyper.: 282, 2010.

syn.: *Cyperus hildebrandtii* (C. B. Clarke) K. Schum. ex T. Durand & B. D. Jackson 1902, nom. illeg.; ***Cyp. pseudo-hildebrandtii*** Kük.; *Cyp. minutulus* K. Schum.; *Pycreus minimus* C. B. Clarke

Annual herb; culms tufted, 4,2−20 cm long, 0,5−1,3 mm ∅, trigonous, smooth; leaf sheath membranous, reddish-brown to sometimes purplish-brown, 1−2,2 cm long; blade linear, flat, glabrous, 5−19 cm × 1,3−2 mm, acuminate; inflorescence simple with primary branches 4−8, 0,5−4 cm long; spikelets loosely arranged in digitate clusters, sometimes on an elongated axis, situated at end of primary branches, often at least one cluster sessile; spikelets 7−32 per cluster, linear, 0,4−1,2 cm × 0,7−1,7 mm.

Swamps; riverbeds; seasonal pools; humid cultivations; along salty creeks; sandy soils; 0−800 m alt.

Resembling *P. pumilus* var. *patens*, *P. polystachyos*.

(**P. intactus** (Vahl) J. Raynal, Adansonia, Sér. 2, 17: 46−47, 1977); Fl. W. Trop. Afr., ed. 2, 3/2: 302, 1972 (as *P. ferrugineus*); Autrey & al., Fl. Mascareignes 202, Cypér.: 55, 2018. – Icon.: Berhaut,

Fl. ill. Sénégal 9: 287, 1988; Gordon-Gray, Cyper. Natal: 140, 1995 (nutlet; text p. 142).

bas.: ***Cyperus intactus*** Vahl

syn.: *Cyp. ferrugineus* Poir. 1806, nom. illeg., non Forssk. 1775; *Cyp. micans* Kunth; *Cyp. elongatus* Steud. 1854, nom. illeg., syn. emend. (type: Leprieur s.n. Senegal); *Cyp. polystachyos* Rottb. var. *ferrugineus* Boeckeler, var. *micans* (Kunth) C. B. Clarke, and var. *baronii* C. B. Clarke; *Pycreus ferrugineus* (Poir.) C. B. Clarke; *P. micans* (Kunth) Karthik.; *Cyperus ferrugineus* Poir. var. *baronii* (C. B. Clarke) Kük.; *Cyp. minor* Steud.; *Cyp. foliosus* Willd. ex Kunth

Perennial (sometimes annual) leafy, tufted herb with thin rhizomes; culms erect, 15−60 cm tall, 1−3 mm ∅, trigonous, glabrous; leaves in lower part of culm; sheath reddish; blade 10−40 cm long, 1−5 mm wide; inflorescence a branched anthela with unequal rays, with 2−5 spikelets at end of each ray; spikelets *lanceolate* (not linear at base), 4−15 × c. 1−2 mm; glumes *laxly placed*, often greenish-red, 1,5−2,8 mm long; style branches 2. – "The general facies is of species of *Cyperus* rather than *Pycreus*" (Gordon-Gray, l.c.).

Rice-fields, humid depressions in littoral dunes; "weed".

According to Fl. ill. Sénégal (l.c.) the plant occurs in S Senegal, Cap Vert, Niayes region, Basse Casamance. – Probably anciently collected in Senegal (Galam); rediscovered more recently also (Adam 18115, 18295 p.p.) fide Raynal and Fl. W. Trop. Afr. (l.c.). The identity of the specimens cited by Lisowski (Fl. Rép. Guinée 1: 407−408, 2009, viz. Jacques-Félix 7384, 7282, 7409, and Chillou 2622) needs confirmation.

A plant from S. Africa, Swaziland (not in Namibia, fide Archer & Craven, Cyper. Namibia: 24, 2004); Madagascar; S India, Bangladesh. – However, according to Gordon-Gray (l.c.) the plant is known throughout Africa, and in both Old and New World, but absent from Europe.

Seems to be confused with *P. polystachyos* (Rottb.) P. Beauv.

P. juncelliformis (Peter & Kük.), ined. – Insufficiently known species, probably a true **Pycreus** without a valid name in that genus. – See under **Cyperus juncelliformis** Peter & Kük. p. 114 above.

P. lanceolatus (Poir.) C. B. Clarke, excl. subsp. *ugandensis* Lye (= *P. mortonii*), and excl. "*P. lanceolatus* C. B. Clarke" in Rendle, Welwitsch's Afric. pl. 2/1: 107, 1899 (= *P. flavescens* subsp. *intermedius*); Renier, Fl. Kwango 1: 72, 1948 (as *P. propinquus*); Longhi-Wagner & al. in Kew Bull. 65: 455, 458, 2010 (Cyper. raddianae); Naczi & Ford, Sedges: Uses…: 44, 2008; Lisowski, Fl. Rép. Guinée 1: 408, 2009; Fl. Trop. E. Afr., Cyper.: 291−292, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (map by Schmidt & al. in Phytotaxa 304: 174, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 112, 1974; Haines & Lye, Sedges & rushes E. Afr.: 276, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 289, 1988; Fl. Eth. & Eritrea 6: 483, 1997 (under *Cyperus*); Akoègninou & al., Fl. analyt. Bénin: 110, 2006; Fl. Gabon 44, Cyper.: 111, 113 (nutlet), 2012 (under *Cyperus*).

bas.: ***Cyperus lanceolatus*** Poir.

syn.: *Cyp. elliottianus* Schult. 1824, nom. superfl.; *Cyp. densus* Link; *Pycreus densus* (Link) C. B. Clarke; *Cyperus setaceus* Raddi 1823, nom. illeg.; *Mariscus setaceus* Raddi 1823, nom. illeg., non *M. setaceus* (L.) Moench 1794; *Pycreus propinquus* Nees; *P. elliottianus* Nees, incl. var. *humilis* Nees; *Cyperus variegatus* Griseb. 1864, nom. illeg., non Boeckeler 1870; *Cyp. jacquemontii* Boeckeler; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb (sometimes appearing to be annual); culms tufted, 14−60 cm long, 0,9−2,5 mm ∅, trigonous, smooth, base covered with reddish-brown to purplish bladeless sheaths; leaf sheaths reddish-brown to brown, 2−8 cm long; blade linear, flattish or plicate, 7−30 cm × 1−2,5 mm, acuminate; inflorescence capitate with spikelets in a dense, digitate, globose cluster; spikelets 8−30 to many per head, ± ovoid, 0,8−2,8 cm × 2,6−3,8 mm; glumes *golden-yellow* to *golden-brown*.

Swamps; wet grassland; river and swamp edges; rice-fields; humid places in meadows; also sand pits, granite rocks; 0−2100 m alt.

Madagascar, Mauritius; tropical and subtropical America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012).

Sometimes confused with single-headed forms of *P. flavescens*, but heads larger, spikelets broader, and nutlets without transverse frills.

P. laxespicatus (Kük.) Hoenselaar, Fl. Trop. E. Afr., Cyper.: 303, 2010. – Icon.: R. E. Fries, Wiss. Ergebn. Schwed. Rhod.-Kongo-Exped. 1911−12 (1): (insert) pl. 2, 1921.

bas.: ***Cyperus laxespicatus*** Kük. [excl. var. *testui* (Cherm.) Kük.]

syn.: *Cyp. laxespicatus* var. *brunneotinctus* Kük., and var. *percrassus* Kük.

Stoloniferous perennial herb; culms densely tufted, 57 cm long, 2,5 mm ∅, trigonous to rounded, smooth; leaf sheath brown to brownish-black, 6 cm long; blade linear, caniculate, ± tough and succulent, 24−25 cm × 4−5 mm, acute, apex ± scabrid; inflorescence compound with primary branches 6−8, 4−9,5 cm long; spikelets on elongated axis on secondary branches; spikelets 9−16 per cluster, linear-ellipsoid, 6,8−10 × c. 1,5 mm.

Boggy grassland at edge of small peaty stream; loamy places in humid meadow near stream; 450−1450 m alt.

P. longistolon (Peter & Kük.) Napper, incl. subsp. *atrofuscus* Lye; Fl. Trop. E. Afr., Cyper.: 304−305, 2010. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 334, 1936 (under *Cyperus*); Haines & Lye, Sedges & rushes E. Afr.: 274, 1983 (as *Cyperus longistolon* subsp. *atrofuscus*).

bas.: ***Cyperus longistolon*** Peter & Kük.

syn.: *Cyp. longistolon* subsp. *atrofuscus* (Lye) Lye; *Mariscus diurensis* (Boeckeler) C. B. Clarke var. *longistolon* (Peter & Kük.) Podlech, Mitt. Bot. Staatsamml. München 4: 112, 1961.

Perennial herb with long stolons; culms 30−77 cm long, 1,2−3,3 mm ∅, trigonous, smooth; leaf sheaths pale yellow brown, 2−10 cm long, often spongy; blade linear, plicate, 16−34 cm × 2,6−7 mm, acute, apex almost glabrous to scabrid; inflorescence simple with primary branches 1−8, 1−15,5 cm long; spikelets in clusters on elongated axis, sessile and at end of primary branches; spikelets 5−23 per cluster, lanceolate, 1,3−3,5 cm × 2,4−5 mm.

Wet depression in grassland; lake shores; bushland; sometimes on or at base of rocky outcrops; 700−1850 m alt.

Sometimes confused with *P. nitidus* that is, however, a more robust plant with a massive base bearing scales and (old) leaf bases and with glumes having an obtuse to acute apex; in *P. longistolon* the glumes are mucronate and their sides fold inwards during maturation of the nutlet.

P. macranthus (Boeckeler) C. B. Clarke, incl. var. *angustifolius* (Ridl.) C. B. Clarke ex Rendle; Fl. Trop. E. Afr., Cyper.: 299−300, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 280−281, 1983 (under *Cyperus*); Gordon-Gray, Cyper. Natal: 140, 1995 (nutlet); Fl. Eth. & Eritrea 6: 487, 1997 (under *Cyperus*).

bas.: ***Cyperus macranthus*** Boeckeler

syn.: *Cyp. macranthus* var. *angustifolius* (Ridl.) Kük., but excl. var. *mucronatus* (Kunth) Kük., and fa. *acuticarinatus* (Kük.) Kük.; *Cyp. lanceus* Thunb. var. *macrostachya* Kunth and var. *angustifolius* Ridl.; *Pycreus segmentatus* C. B. Clarke

Perennial stoloniferous herb growing in small tussocks; culms 5−39−60 cm long, 0,5−1 mm ∅, slender, trigonous to ± rounded, smooth; leaf sheath brown, 2−6 cm long, often splitting into thin fibres; blade linear, folded, glabrous, 6−21 cm × 1−2 mm, acute, apex scabrid; inflorescence capitate (sometimes loosely so); spikelets 4−15 per head, ± ellipsoid, 1−1,8 cm × 2,8−4,5 mm; glumes dark reddish-brown; nutlet muricate.

Swamps; seasonally damp grassland; depressions on poor soil; rice-fields; marshy places; 840−2150 m alt.

Botswana, S. Africa.

Sometimes confused with *P. nigricans* and *P. muricatus*; a number of specimens (Fl. E. Trop. Afr., l.c.) are intermediate between *P. macranthus* and *P. muricatus* regarding inflorescence structure. Further study on these specimens is needed.

P. macrostachyos (Lam.) J. Raynal, incl. subsp. *tremulus* (Poir.) Lye, and var. *tenuis* (Boeckeler) Wickens; Thulin, Fl. Somalia 4: 143, 1995 (under *Cyperus*); Clarke & Mannheimer, Cyper. Namibia: 93, 76 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 274−275, 2002; Lisowski, Fl. Rép. Guinée 1: 408, 2009; Fl. Trop. E. Afr., Cyper.: 288−289, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 54, 2012 (map by Schmidt & al. in Phytotaxa 304: 174, 2017); Gereau & al., Lake Nyasa florist. checklist: 48, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 358, 1936 (as *Cyperus albomarginatus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 2, 1974; Haines & Lye, Sedges & rushes E. Afr.: 288−289, 1983 (under *Cyperus*); Troupin, Fl. Rwanda 4: 473, 1988; Berhaut, Fl. ill. Sénégal 9: 290, 1988; Gordon-Gray, Cyper. Natal: 140, 1995 (nutlet); Fl. Eth. & Eritrea 6: 484, 1997 (under *Cyperus*); Fl. Mascareignes 202, Cyper.: 56, 2018 (details).

bas.: ***Cyperus macrostachyos*** Lam.

syn.: *Cyp. macrostachyus* subsp. *tremulus* (Poir.) Lye; *Cyp. tremulus* Poir.; *Pycreus tremulus* (Poir.) C. B. Clarke; *P. albomarginatus* Mart. & Schrad. ex Nees; *Cyperus albomarginatus* (Mart. & Schrad. ex Nees) Steud.; *Cyp. hochstetteri* Nees ex Krauss; *Cyp. retusus* A. Rich. 1850; *Cyp. retusus* Nees ex Steud. 1854; *Cyp. hochstetteri* var. *tenuis* Boeckeler, and var. *russa* C. B Clarke; *Cyp. albomarginatus* var. *tenuis* (Boeckeler) Kük.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb; culms solitary or tufted, 15−82 cm tall, 1,6−6,2 mm ∅, trigonous, sometimes ± triquetrous, smooth, lower part covered by *broad membranous* reddish-brown leaf bases; leaf sheath rather loose, pale brown to dark brown, 2−13 cm long, base often reddish-purple; blade linear, 15−50 cm × 2,6−9 mm, acuminate, apex scabrid; inflorescence simple, or sometimes ± compound; spikelets in clusters on elongated axis at end of primary branches, at least one cluster sessile; primary branches 2−8, 1−15,5 cm long; spikelets linear, 10−30 to many per cluster, 0,8−2,5 cm × 1,7−2,5 mm (sometimes 3,5 cm long in fruit); glumes with a *distinct white hyaline margin*.

Seasonal lakes and ponds; river edges, rice fields; other damp places; bare, humid to flooded sandy to clayey soils; hollows in dunes; sometimes in to 25 cm deep water; in or near rock pools; alluvial flooded plain; riverine forest; wooded grassland; 0−2000 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar, Réunion, Mauritius; India – Burma; Australia; (sub)tropical America: C. & S. America.

P. malangensis Meneses – Icon.: Garcia de Orta 4: 243, 1956.

Annual tufted herb; culms slender, 5−15 cm tall, trigonous, striate; leaves ± as long as culms, flat, 2 mm wide, margins scabrid; inflorescence a simple anthela with 3−4 rays (very short to 2,5 cm long); spikes lax, each with 3−5 spikelets; these spreading, oblong-lanceolate, 1−2 cm × 4 mm, flattened, 18−38-flowered; glumes imbricate, ovate, 2,5 mm long with green keel; stamens and stigmas 2; nutlet ovate, 1 mm long, surface transversely undulate.

Humid meadow near river.

Described as related to ("*P. latespicatus* C. B. Clarke" =) *P. diaphanus* (Schrad. ex Roem. & Schult.) S. S. Hooper & T. Koyama, a plant from tropical and subtropical Asia (illustration, partial, in Fl. China, Ill. 23: 329, 2012). Known only from the type collected in 1937 (Exell & Mendonça 480).

P. melanacme Nelmes; Kew Bull. 40: 782−784, 1985; Fl. Trop. E. Afr., Cyper.: 280, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 285−286, 1983 (as *Cyperus pauper*); Fl. Eth. & Eritrea 6: 485, 1997 (idem).

syn.: ***Cyperus melanacme*** (Nelmes) Raymond

Annual herb; culms 16 cm long, 0,4 mm ∅, trigonous, smooth; leaf sheath 1,5−2,5 cm long, reddish-brown; blade linear, folded, 8,5−12,5 cm × 0,8 mm, glabrous; inflorescence capitate, with 2 bracts, lowermost leaf-like, erect, 3−6,5 cm long, second bract inconspicuous, glume-like; spikelets 1−6 per head, ovoid, 5−7 × 3−4 mm; *glumes striking yellow*, c. 3 × 3 mm, *apex black*; nutlet very little compressed, surface coarsely papillose.

Shallow pools; damp places; water edges; humid and rather shady part of open forest; very sandy ground among rocks; 1350−1650 m alt.

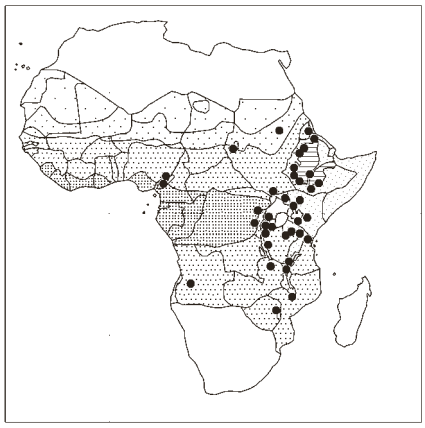
Distribution disjunct.

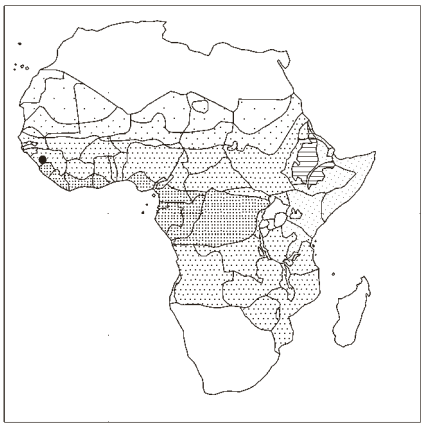
Differs from *P. pauper* which has an inflorescence of 1−2 spikelets, the 2 bracts always exceeding the spikelet in length, spikelets < 4 mm wide, glumes straw-brown with dark tip, achene compressed with very long concave surface cells in groups bordered by raised short horizontal ridges (= surface muriculate-excavate), fide Kew Bull. 40: 784, 1985.

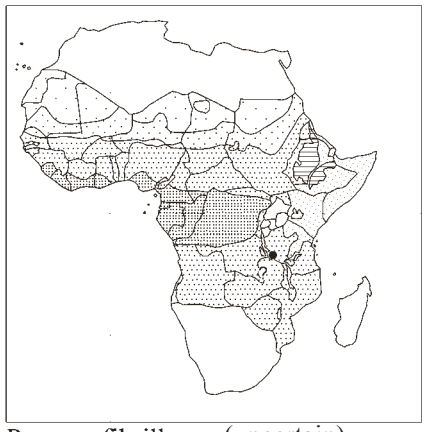
P. melas (Ridl.) C. B. Clarke; Akoègninou & al., Fl. analyt. Bénin: 110, 2006; Fl. Trop. E. Afr., Cyper.: 279, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (s. loc.). – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 106, 1974; Haines & Lye, Sedges & rushes E. Afr.: 286, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 291, 1988 (doubtful occurrence); Burrows & Willis, Pl. Nyika Plateau, Malawi: 302, 2005; Mesterházy in Lidia 7/5: 115, 2012 (Liberia).

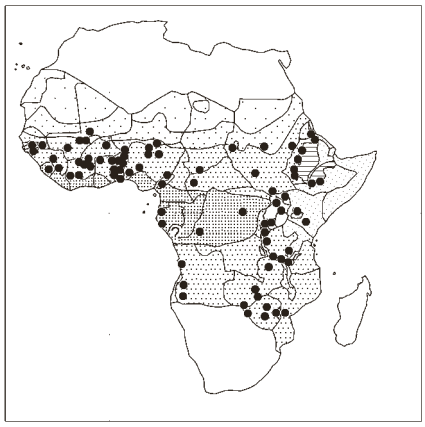
bas.: ***Cyperus melas*** Ridl.

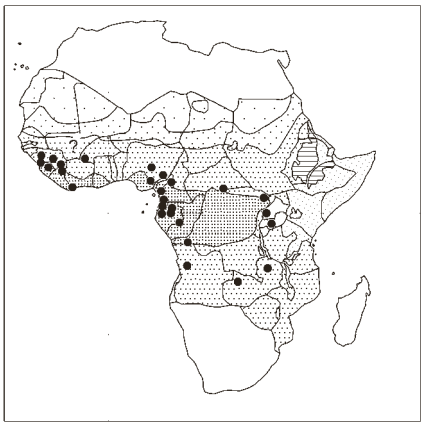
syn.: *Juncellus ater* C. B. Clarke; *Pycreus ater* (C. B. Clarke) Cherm.

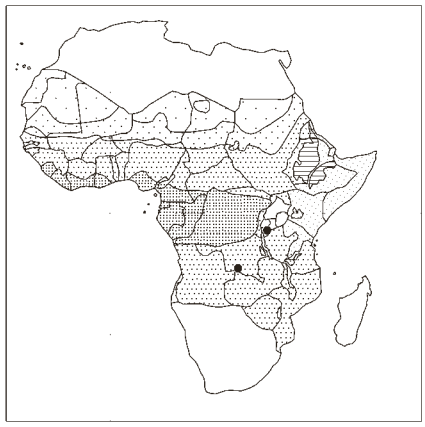

Pycreus elegantulus

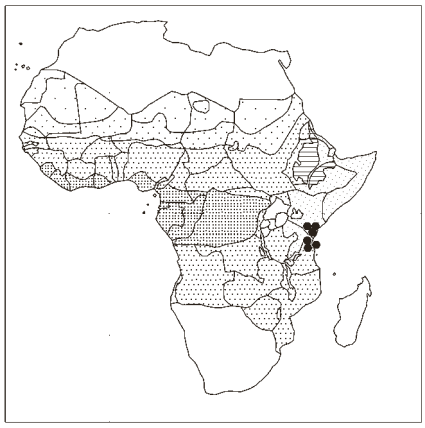

Pycreus felicis

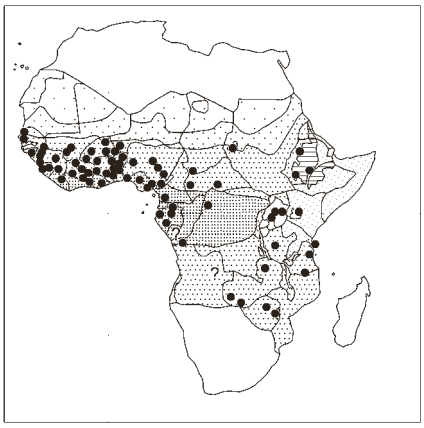

Pycreus fibrillosus (uncertain)

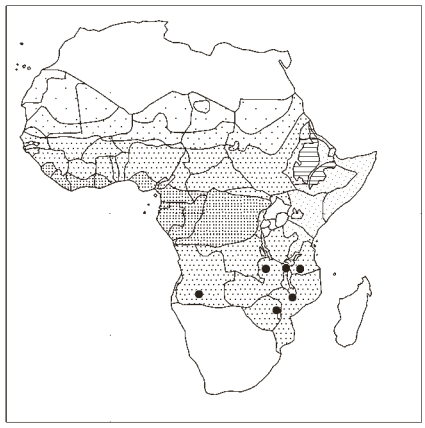

Pycreus flavescens

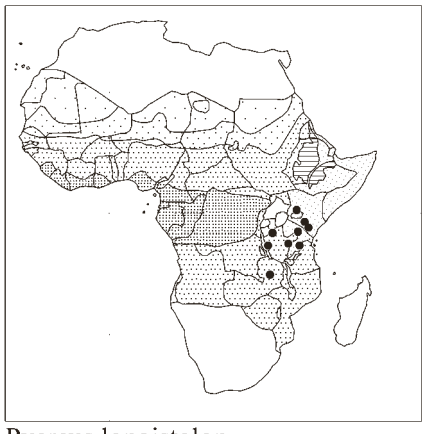

Pycreus fluminalis

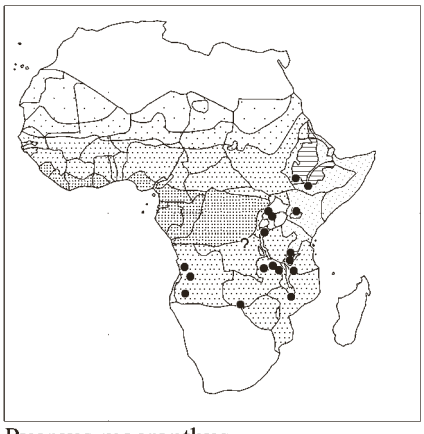

Pycreus gracillimus

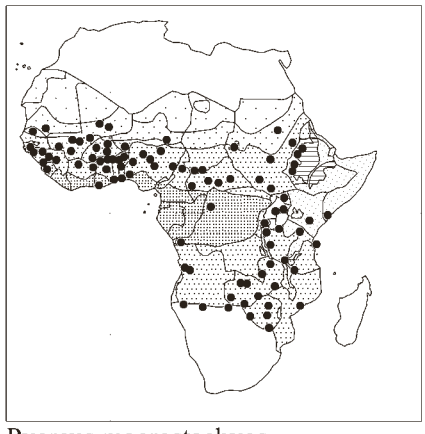

Pycreus hildebrandtii


Pycreus lanceolatus


Pycreus laxespicatus


Pycreus longistolon


Pycreus macranthus


Pycreus macrostachyos

PYCREUS MELAS

Annual herb; culms tufted, 6−32 cm long, 0,3−0,5 mm ∅, trigonous to rounded, smooth; leaf sheath reddish-brown to brown, 1,4−2,3 cm long; blade ± filiform, folded, 1,4−7,5 cm × 0,6−1,2 mm, acute, glabrous; inflorescence loosely capitate with primary branches 0−2, 0−1 cm long; spikelets sessile or in digitate clusters at end of very short primary branches, 3−7 per primary branch, to 30 in a head, linear-oblong, c. 7−11 × 1−1,5 mm (to 1,6 cm long in fruit), *brown* to *almost black*.

Sandy, boggy grasslands; places flooded in rainy season; edges of pools; weed in rice fields; wet flushes on rocky hillsides; with dwarf *Irideae* (*Ferraria andongensis*), *Xyris fugaciflora*; muddy places in quarry; 750−1180 m alt.

Similar to *P. capillifolius* (with spikelets 1,3−2 mm wide and lighter coloured).

P. micromelas Lye; Lock in Kew Bull. 70: § 46: 3, 2015 (Robinson coll., Zambia). – Icon.: Nord. J. Bot. 1: 618, 1981; Haines & Lye, Sedges & rushes E. Afr.: 287, 1983 (under *Cyperus*).

syn.: ***Cyperus micromelas*** (Lye) Lye

Annual herb with 1−2 culms 2−5 cm long, 0,1−0,2 mm ∅, trigonous, glabrous; leaves 0,5−2 cm long, very slender; inflorescence a cluster of 2−12 sessile spikelets (very rarely with an additional stalked cluster of 2−4 spikelets); spikelets linear, 2−9 × 0,5 mm (to 1 mm with glumes spreading), reddish-brown, 10−25-flowered.

Bare soil over rocks.

Most similar to *P. melas* but differs from that by its smaller spikelets (2−9 × 0,5−1 mm, not 5−15 × 1−1,7mm), smaller glumes (0,7−0,9 mm long, not 1−1,2 mm), and triangular nutlet (not obovate, ± flattened).

Known only from the type collected in 1961.

P. micropelophilus (Lye) J.-P. Lebrun & Stork, **comb. nov**. in Candollea 74: 149, 2019; Lye in Biol. Skr; 54: 204, 2001. – Icon.: Thulin, Fl. Somalia 4: 144, 1995 (English description only, under *Cyperus*); Willdenowia 26: 234−235, 1996 (under *Cyperus*).

bas.: ***Cyperus micropelophilus*** Lye, Willdenowia 26: 233, 1996; type: Somalia, Bay region, Bur Akaba inselberg, 2°48'N × 44°05'E; J. B. Gillett & C. F. Hemming 1983, nº 24892 (K, holo-).

Tufted annual herb; culms few to numerous, 5−20 cm long, c. 1 mm ∅, trigonous, glabrous, with 2−3 leaves in lower half; sheaths grey to purple; blade 5−15 cm long, 1−3 mm wide, scabrid at least on margin; inflorescence lax, 2−5 cm wide, with 1 central sessile spikelet-cluster and 2−8 stalked spikelet-clusters; largest penduncle 2−5 cm long; spikelets linear, 0,2−1 cm × 1−2 mm, reddish-brown with 10−25 closely overlapping glumes.

Damp spots where water trickles over rock (inselberg) after rain; 200−350 m alt.

Only known from the type collected in 1983.

Somewhat intermediate between *P. pelophilus* and *P. hildebrandtii* but nutlet obovate to squarish, flattened, 0,6−0,5 mm (not 1 × 0,8 mm for *P. pelophilus*, 0,9−0,4 mm for *P. hildebrandtii*), and glumes reddish-brown (Table in Willdenowia, o.c.: 234).

P. mortonii S. S. Hooper; Lowe & Stanfield, Fl. Nigeria: Sedges: 109, 1974; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011. – Icon.: Berhaut, Fl. ill. Sénégal 9: 292, 1988. – N.B.: Haines & Lye, Sedges & rushes E. Afr.: figs. 565 & 566 p. 277, 1983, under the name *Cyperus mortonii*, represent *Pycreus* (*Cyperus*) *unioloides*; the same is true for fig. 4 p. 620 in Nord. J. Bot. 1, 1981, here named *Pycreus lanceolatus* subsp. *ugandensis*.

PYCREUS MORTONII

syn.: ***Cyperus mortonii*** (S. S. Hooper) Lye; "*Pycreus lanceolatus* (Poir.) C. B. Clarke subsp. *ugandensis* Lye" (See Note above).

Annual (or sometimes perennial) herb with slender rhizome; culms erect, solitary or tufted, 20−70 cm tall, 0,5−1,5 mm ∅, triquetrous, glabrous; leaves 1−2 per culm; sheath brown-red, the basal bladeless; blade to 40 cm long, 1−2 mm wide; inflorescence a simple umbel with c. 6 rays, the longest c. 5 cm; spikes 1−2 cm long, with spikelets forming a group 1,5−3 cm across; spikelets golden, tinged brown, 1−1,8 cm long, 3−4 mm broad.

Damp savanna; ferruginous soils; grassy and very humid ricefield.

Not in Uganda (= *P. unioloides*); ? Cameroon.

Similar to *P. unioloides* but: annual, altogether smaller, without spinulose-scabrid leaf and bract-tips.

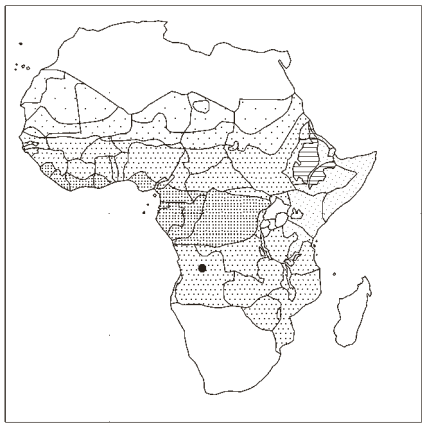
P. mundii Nees (sphalm. *mundtii*) – For orthography: Glen & al. in Taxon 52: 601−602, 2003; named after Johannes Ludwig Leopold Mund (1791−1831), born in Berlin, Prussia (holotype: W. Cape, Mund s.n.). – Rendle, Cat. Welwitsch's Afric. pl. 2/1: 106−107, 1899; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 245−246, 1955; Clarke & Mannheimer, Cyper. Namibia: 93, 76, 1999 (doubtful); Archer & Craven, Cyper. Namibia 24, 2004; Naczi & Ford, Sedges: Uses…: 24, 2008 (under *Cyperus*); Lisowski, Fl. Rép. Guinée 1: 408, 2009; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 174, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Kirkia 2: pl. XVI (p. 65−66), 1961; Lowe & Stanfield, Fl. Nigeria: Sedges: 112, 1974; Haines & Lye, Sedges & rushes E. Afr.: 270, 1983 (under *Cyperus*); Candollea 45: 429, 1990; Gordon-Gray, Cyper. Natal: 140, 1995 (nutlet); Fl. Eth. & Eritrea 6: 480, 1997 (under *Cyperus*); Cook, Aquat. & wetland pl. south. Africa: 108, 2004; Boulos, Fl. Egypt 4: 399, 2005; Fl. Trop. E. Afr., Cyper.: 285, 2010; Fl. Gabon 44, Cyper.: 112, 2012.

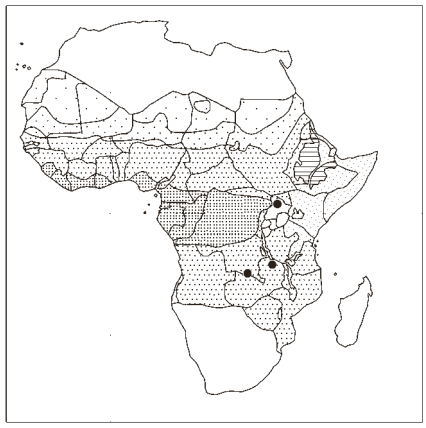
syn.: ***Cyperus mundii*** (Nees) Kunth; *Chlorocyperus mundii* (Nees) Rikli (See also under the varieties below).

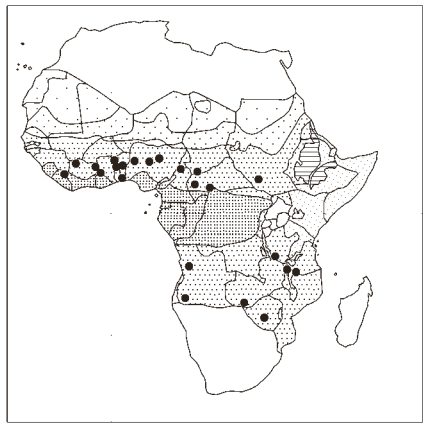
Semi-aquatic perennial herb with stolons to 2 m long, 1−3 mm ∅, with elongate internodes and short brown-black scales, and rooting copiously at each node and ending in an inflorescence; culm usually solitary, trigonous, smooth, sometimes ± grooved, the non-bearing leaf part 3−30 cm long, 0,7−5 mm ∅; leaf sheath yellow-brown, sometimes greenish, often with a red-purple coloured triangle at the side opposite the leaf, 1−7 cm long; blade linear, ± plicate, 2−16,5 cm × 1,5−7,2 mm, acute, apex often ± minutely scabrid; inflorescence capitate or simple, when simple primary branches 0−12, 0−6,5 cm long; spikelets crowded in digitate, ovoid clusters, sometimes on slightly elongated axis, sessile and at end of primary branches; spikelets 2−13 per cluster, ovoid-lanceolate to broadly ovoid, flattened or sometimes almost conical, 1−12 × 1−4 mm.

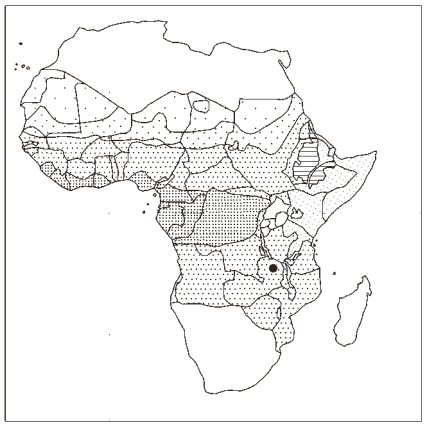
Wet habitats: *Papyrus* swamps, lake edges, wet or damp grasslands, riverine and swamp forest; in or near open water, frequently floating, sometimes forming a continuous thick turf on water surface "giving way but not breaking under the weight of crocodiles and monitor lizards"; plants closely interwoven with other species of *Cyperus* (Rendle, l.c.); growing with *Mamboga stipulosa*; sand; 0−2300 m alt. – Dispersal of fragments broken from rafts (sudd), or floating fragments, by water currents or winds.

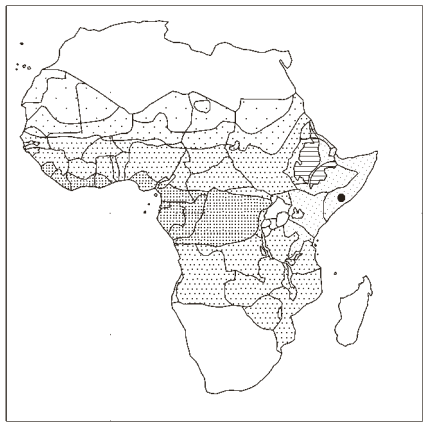
Very variable in: habit, shape of inflorescence, size, shape of spikelets (thus many varieties described).

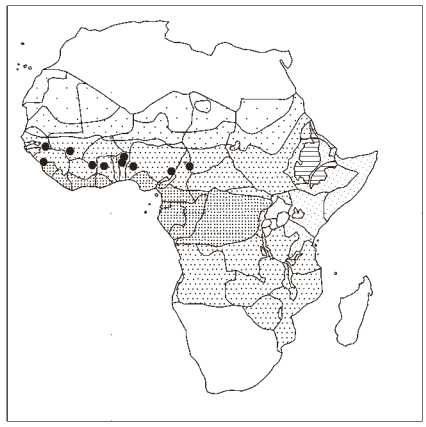

Pycreus malangensis

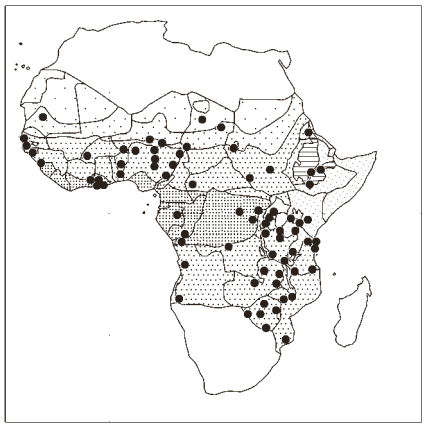

Pycreus melanacme

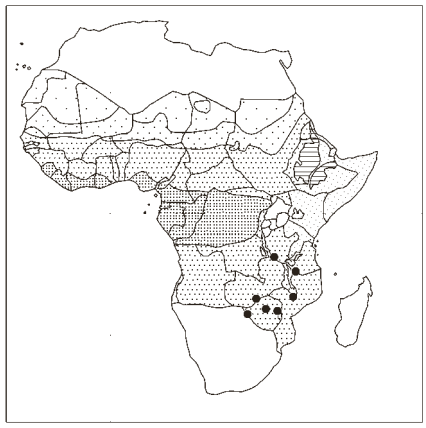

Pycreus melas

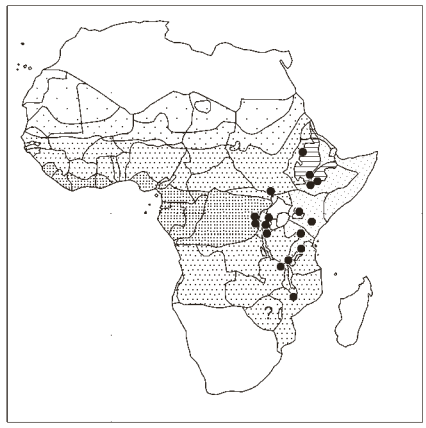

Pycreus micromelas

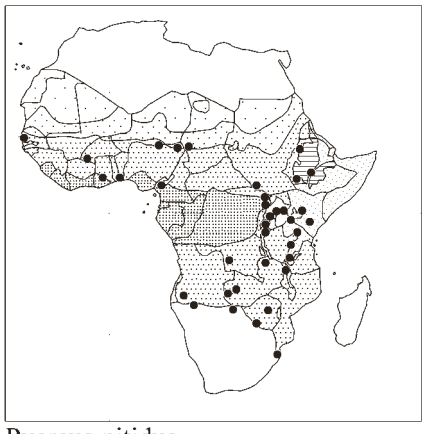

Pycreus micropelophilus

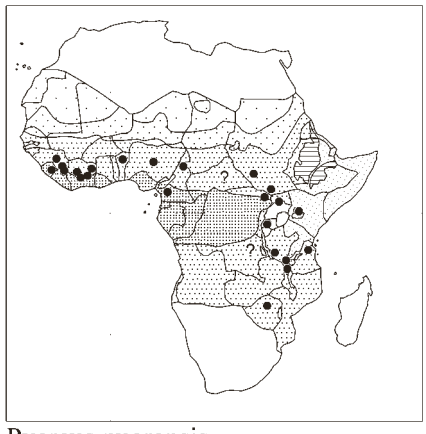

Pycreus mortonii

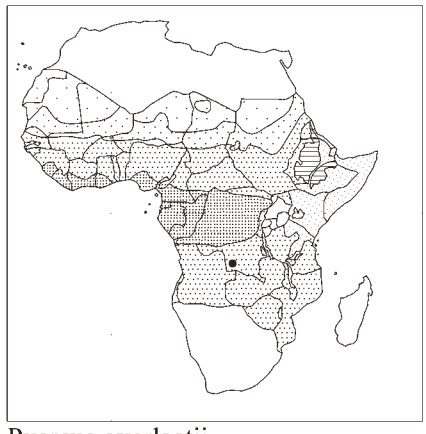

Pycreus mundii


Pycreus muricatus


Pycreus nigricans


Pycreus nitidus


Pycreus nuerensis


Pycreus overlaetii

S & E Spain; Tenerife, Canary Isl. (Siverio Núñez & al. in Bot. Macaron. 28: 170, 2013); Cape Verde Isl.; Morocco, Egypt; Namibia ?, S. Africa, Botswana, Lesotho, Swaziland; Madagascar, Réunion; introduced in Cuba, Brazil, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012).

"I do believe that varieties can be recognized in this species to a certain level; this distinction will not work on all specimens" (Fl. Trop. E. Afr., l.c.). 3 vars. are distinguished: – var. **densispiculosus** (Kük.) Hoenselaar [bas.: *Cyperus mundii* var. *densispiculosus* Kük.], with yellowish glumes, and spikelets c. 5 × 2–4 mm, in W & SW Tanzania; – var. **mundii** [syn.: *Cyperus densifolius* Kunth 1837; *Cyp. densifolius* Steud. 1854, nom. illeg.; *Cyp. turfosus* Salzm. ex Kunth 1837, or ex Boiss. 1841; *Cyp. mundii* var. *glaucus* Boeckeler, and var. *gracilis* (Cherm.) Robyns & Tournay (o.c.: 245), 1955; *Pycreus mundii* var. *gracilis* Cherm.; *P. densifolius* (Kunth) Nees ex Cherm.; *P. decumbens* T. Koyama], with a coarse habit, simple inflorescence, spikelets 5–11 × 2,5–2,8 mm, glumes dark-black; the most common and widespread variety; – var. **uniceps** (C. B. Clarke) Napper [syn.: *Pycreus sanguinolentus* (Vahl) Nees var. *uniceps* C. B. Clarke; *Cyperus mundii* fa. *distichophyllus* (Steud.) Kük., and var. *distichophyllus* (Steud.) Kük., and var. *uniceps* (C. B. Clarke) Kük.; *Cyp. distichophyllus* Steud. 1842; *Chlorocyperus distichophyllus* Steud. 1842], a small plant with black glumes, similar to *P. sanguinolentus*; widespread in E-S Africa.

Confusion with *P. nitidus* possible, especially in herbaria. But easy to recognize as it has leaves up the flowering culm, and glumes with furrows on each side of the keel; Also very similar to *P. altus* (cf. under that species above).

P. muricatus (Kük.) Napper; Kükenthal in Engler, Pflanzenreich IV. 20/101: 395, 1936 (under *Cyperus*); Simpson & Inglis in Kew Bull. 56: 330, 2001; Fl. Trop. E. Afr., Cyper.: 298–299, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 284–285, 1983.

bas.: ***Cyperus muricatus*** Kük.

Perennial, often tussocky herb with stolons 1–5 cm long, 1–2 mm ∅ covered by dark brown scales; culms 25–82 cm long, c. 1–2 mm ∅, trigonous to rounded, smooth; leaf sheath reddish-brown, 3–7 cm long; blade linear, plicate to sometimes crescentic, often folded, 15–42 cm × 2–3 mm, acuminate to acute, apex ± scabrid; *inflorescence simple, open*, with primary branches 1–5, 1,5–5 cm long, with a red-dark purple tubular prophyll at base; spikelets in loose digitate clusters, sessile and at end of primary branches; spikelets 3–10 per cluster, ± ellipsoid, 8,5–18,5 mm (to 22 mm in fruit) × c. 3,5 mm; glumes brown; *nutlet* strongly *muricate-zonate*.

Boggy grassland; lake shores; stream-sides; 450–1850 m alt.

S. Africa.

(**P. niger** (Ruiz & Pav.) Cufod.)

bas.: ***Cyperus niger*** Ruiz & Pav.

syn.: *Cyp. cimicinus* J. Presl & C. Presl; *Pycreus cimicinus* (J. Presl & C. Presl) H. Pfeiffer; *Chlorocyperus cimicinus* (J. Presl & C. Presl) Rikli

A plant from tropical and subtropical America, confused with **Pycreus elegantulus** (Steud.) C. B. Clarke (See under that species above p. 288).

P. nigricans (Steud.) C. B. Clarke, incl. var. *simulans* (Cherm.) Cherm. and var. *firmior* (Kük.) Cherm.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 240, 242, 1955 (under *Cyperus*); Puff & Sileshi, Pl. Simen: 240, 2005; Strugnell & al., Checklist spermat. Mt. Mulanje, Malawi: 77, 2006 (under *Cyperus*); Fl. Trop. E. Afr., Cyper.: 305–307, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 273, 1983; Troupin, Fl. Rwanda 4: 475, 1988; Fl. Eth. & Eritrea 6: 437, 1997; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 339, 2008.

bas.: ***Cyperus nigricans*** Steud.

syn.: *Cyp. nigricans* var. *firmior* Kük. and var. *simulans* (Cherm.) Kük.; *Pycreus nigrescens* C. B. Clarke; *P. nyasensis* C. B. Clarke; *P. simulans* Cherm.; *P. vavatensis* Cherm., incl. var. *simulans* (Cherm.) Cherm.

Perennial herb forming very large dense tussocks to 30 cm ∅ with many crowded leaves; root system of closely packed tough woody rhizomes and thick roots bearing persistent hard dark polished leaf bases; culms tufted, 35–90 cm long, 1–1,8 mm ∅, trigonous to slightly triquetrous, smooth, the angles *sometimes* set *with* small *spine-like teeth*, leaf sheath brownish-red (old ones black), 6–8 cm long; blades linear, folded, stiff, 22–74 cm × 2–3,5 mm, acute, apex scabrid; inflorescence *very dark*, capitate, compact, with a tar-like smell; spikelets crowded in sessile, ovoid-globose clusters, sometimes viviparous; spikelets 5–25 per cluster, ovoid, 8–17 × 2,5–5 mm; nutlet ± trigonous.

Marshy ground, swamps, bogs, by rivers; montane grassland; meadow in bamboo forest; 1800–3600 m alt.

Madagascar.

Rarely collected as rhizome and roots are tangled tight together and difficult to break up.

P. nitidus (Lam.) J. Raynal, incl. var. *grantii* (C. B. Clarke) J. Raynal; Clarke & Mannheimer, Cyper. Namibia: 93, 76 (map), 1999; Simpson & Inglis in Kew Bull. 56: 330–331, 2001; Prasad & Simpson in Rheedea 21: 157–159, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 114, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 272, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 294, 1988; Troupin, Fl. Rwanda 4: 473, 1988; Gordon-Gray, Cyper. Natal: 144, 146, 1995; Fl. Eth. & Eritrea 6: 481, 1997 (under *Cyperus*); Cook, Aquat. & wetland pl. south. Africa: 108, 2004; Akoègninou & al., Fl. analyt. Bénin: 111, 2006; Fl. Trop. E. Afr., Cyper.: 306, 2010.

bas.: ***Cyperus nitidus*** Lam.

syn.: *Cyp. lanceus* Thunb. 1794, non F. Muell. 1874; *Cyp. lanceus* fa. *densior* (Cherm.) Kük., var. *divaricatus* Kük., var. *grantii* C. B. Clarke, var. *humilis* Kunth, var. *melanopus* (Boeckeler) Kük., var. *palaestinensis* Kük., and var. *ramosus* Kük., but *excl*. var. *angustifolius* Ridl. (= *Pycreus macranthus*), var. *macrostachya* Kunth (idem), and var. *mucronatus* Kunth (= *P. permutatus*); *Cyp. melanopus* Boeckeler; *Pycreus lanceus* (Thunb.) Turrill, incl. var. *humilis* Kunth, var. *melanopus* (Boeckeler) Troupin; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with long stolons (to > 40 cm × 3–8 mm ∅) sometimes branching, rooting at nodes, not developing sterile leafy stems; base of plant massive, with scales and (old) leaf bases; culms usually solitary, 15–70 cm long, *1,3–3 mm* ∅, trigonous to triquetrous, smooth; leaves several at base of culm; sheath pale yellowish-brown, brown to almost black, 2,5–14 cm long; blade linear, flattish plicate, 18–70 cm × 2,5–8,6 mm, acute to acuminate, apex glabrous to minutely scabrid; inflorescence simple with spikelets in ovoid, digitate clusters, sessile or at end of primary branches; these 4–9, 0–10 cm long; spikelets 5–30 per cluster, ovoid (-oblong), 8–16 × 3–4,3 mm, flattened, shining brown.

Swamps; burned areas; forming large stands in or near permanent water; grassland with oozing water; edges of woods in damp

places; estuaries where salinity is not high; near sea-level to 2450 m alt.

Namibia, S. Africa, Botswana, Swaziland; Madagascar; Syria, Israel. – Not in India (erroneous citation; See Prasad & Simpson in Rheedea 21: 157−159, 2011).

Before commercial salt was available, plants were burnt and the ashes lixivated to obtain a cooking salt. Culms used for mats (Simpson & Inglis, l.c.).

P. nuerensis (Boeckeler) S. S. Hooper; Akoègninou & al., Fl. analyt. Bénin: 111, 2006; Lisowski, Fl. Rép. Guinée 1: 408, 2009; Fl. Trop. E. Afr., Cyper.: 302, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Adam, Fl. descr. Mts Nimba 6: 2141, 1983; Haines & Lye, Sedges & rushes E. Afr.: 274−275, 1983 (under *Cyperus*).

bas.: ***Cyperus nuerensis*** Boeckeler

syn.: *Cyp. globosus* All. var. *nuerensis* (Boeckeler) Kük.; *Cyp. polystachyos* Rottb. var. *sanguineus* Kük.; *Pycreus globosus* (All.) Rchb. var. *nuerensis* (Boeckeler) Troupin; *P. globusus* var. *nilagiricans* sensu C. B. Clarke in Fl. Trop. Afr. 8: 299, 1902.

Perennial herb with or without stolons; culms tufted, 23−54 cm long, 1,6−2,4 mm ∅, trigonous, smooth, basal part covered with loose leaf sheaths (brown, 3−9 cm long); blade linear, plicate, 17−31 cm × 3,4−4,7 mm, acute to acuminate, apex scabrid; inflorescence simple to compound, with primary branches 2−8, 0,5−7 cm long; spikelets loosely to densely arranged in digitate clusters, sometimes on an elongated axis, the clusters sessile and at end of primary branches; spikelets many per cluster, linear-lanceolate, 5,7−11,5 × 1,1−1,5 mm.

Granitic, oozing pan; swamp on rocks with *Drosera pilosa*… in gallery; swamps; ditches; moist grassland; marsh on floating humus; peat-bog on conglomerate; forest gallery, on grassy thick tussocks; humid rice-fields; 450−1800 m alt.

Quite similar to *P. aethiops* but this species has brown-black glumes (not red-brown), 3 stamens (not 2), glumes 1−1,3 mm wide (not 0,8−1 mm).

P. overlaetii Cherm. ex S. S. Hooper & J. Raynal, Kew Bull. 23: 314, 1969.

syn.: ***Cyperus overlaetii*** (Cherm., ex S. S. Hooper & Raynal) Lye; ? *Pycreus flavescens* (L.) P. Beauv. ex Rchb. subsp. *laevinux* Lye (See below).

Species near *P. alleizettei* Cherm., an annual plant from Madagascar, but with shorter, narrower spikelets (in *P. alleizettei* 0,8−1,6 cm × 3,5−4 mm) and shorter glumes (in *P. alleizettei* 2,5−3 mm long).

Ecology not recorded.

Known only from the type collected in 1932.

The identity of *Pycreus flavescens* var. *laevinux* from Tanzania is uncertain. Citation from Ruaha Natl. Park (based on specim. Bjørnstad 2600) seems to be a misidentification of a specimen belonging to *P. flavescens* subsp. *flavescens* (Fl. Trop. E. Afr., Cyper.: 294, 2010; cf. above under *P. flavescens* pp. 289−290).

P. pagotii J. Raynal, Kew Bull. 23: 314, 1969.

syn.: ***Cyperus pagotii*** (J. Raynal) Lye

Species distinct from *Pycreus mortonii* S. S. Hooper by its larger spikelets and glumes, and by the aspect of the surface cells of the nutlet which are narrowly elongate and not papillose; it is

distinct from *P. alleizettei* Cherm. and *P. overlaetii* Cherm. ex S. S. Hooper & J. Raynal by its acute spikelets and its inflated nutlet. In addition *P. pagotii* is distinct from the above-mentioned species by its much longer anthers.

"Hydromorphic" area.

Known only from the type collected in 1964.

P. pauper (Hochst. ex A. Rich.) C. B. Clarke 1895; Hooper in Kew Bull. 40: 782, 784, 1985; Fl. Trop. E. Afr., Cyper.: 279−280, 2010, p.p. – Note: in Haines & Lye, Sedges & rushes E. Afr.: figs. 588, 589 p. 285−286 (1983) represent *Pycreus* (*Cyperus*) *melanacme*, not *P.* (*Cyp.*) *pauper*. This is also true for Flora of Ethiopia & Eritrea 6: fig. 212, 146 p. 485 (1997). Cf. p. 292 above.

bas.: ***Cyperus pauper*** Hochst. ex A. Rich. 1850, non Phil. 1873, nec C. B Clarke 1884.

syn.: *Cyp. angulatus* W. Watson 1876, nom. illeg., non Nees 1834 (= *Pycreus unioloides*); *Chlorocyperus pauper* (Hochst. ex A. Rich.) Rikli

Annual herb to c. 25 cm tall; culms trigonous, smooth; leaves few, ± as long as culms, filiform, sheaths purplish-brown; inflorescence of 1−2 (less commonly −5) spikelets; the *2 bracts* always *exceeding the spikelet in length*; spikelets usually < 4 mm wide; glumes straw-brown with a green or golden tinge and dark tip; *nutlet compressed*, with *very long concave surface cells* in groups *bordered by raised short horizontal ridges*, producing a *muriculate-excavate surface* (Hooper 1985: l.c.). See *P. melanacme* (p. 292) for comparison.

Swamps; roadside ditches; seasonally moist depressions; bare wet soil; along streams; shallow soils over rocks; swampy grassland; up to c. 2400 m alt.

Distribution disjunct: N Ethiopia – S Tanzania (Songea distr., Milne Redhead & Taylor 9184, ? or 1956). An extension to NW Zambia (Mwinilunga) possible. – ? Nigeria, C. Afric. Rep., Cameroon, Angola.

P. melanacme has a much wider distribution.

P. pelophilus (Ridl.) C. B. Clarke; Clarke & Mannheimer, Cyper. Namibia: 93, 77 (map), 1999; Lisowski, Fl. Rép. Guinée 1: 408, 2009; Fl. Trop. E. Afr., Cyper.: 280−281, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 289−290, 1983 (under *Cyperus*); Gordon-Gray, Cyper. Natal: 144, 1995 (nutlet); Lye in Willdenowia 26: 234, 1996 (nutlet; under *Cyperus*); Pl. Ecol. Evol. 144: 54, 2011 (flower ontology).

bas.: ***Cyperus pelophilus*** Ridl.

syn.: *Cyp. pelophilus* fa. *nanus* Kük.; *Cyp. guanipensis* Schnee; *Pycreus chorisanthus* C. B. Clarke; *P. decaryi* Cherm.; *P. sulcinux* sensu Fl. Trop. Afr. 8: 298, 1902, non (C. B. Clarke) C. B. Clarke s. str.

Annual herb; culm 4,5−28 cm long, 0,5−1 mm ∅, trigonous, smooth; leaf sheath (pale) brown, sometimes purplish at base, 1−4,5 cm long; blade linear, flattish-plicate, 3−22 cm × 1,2−3 mm, acuminate, scabrid; inflorescence simple, sometimes partially compound with primary branches 3−8, 1−7 cm long; spikelets in loose digitate clusters, sessile and at end of primary branches (when inflorescence partially compound also clusters on secondary branches); spikelets 4−15 per cluster, ± linear, 0,7−2 cm × 1,5−3 mm.

Pool edges; swamps; wet depressions in cultivated area; recently disturbed silt on riverbanks; moist sandy places near water; sandy-cleyey marshes; by dried-up pools and ponds; 0−1650 m alt.

Scattered distribution: Namibia, S. Africa, Botswana, Swaziland; Madagascar; introduced in the Caribbean, S. America. – Not in Somalia (Lye in Willdenowia 26: 236, 1996, replaced by *Pycreus micropelophilus*) nor in Congo-Brazzaville but in Chad.

Easily overlooked or missed, because plants (small) are soon overtaken by more robust vegetation.

Easily recognized by the strong zig-zag spikelet rachilla with ± spreading mucronate glumes and flattened nutlets.

P. permutatus (Boeckeler) Napper; Fl. Trop. E. Afr., Cyper.: 300, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 275, 1983 (under *Cyperus*).

bas.: ***Cyperus permutatus*** Boeckeler

syn.: *Cyp. lanceus* Thunb. var. *mucronatus* Kunth; *Cyp. macranthus* Boeckeler var. *mucronatus* (Kunth) Kük.

Perennial herb with massive base of one or more slightly swollen culm-bases; culms tufted 23,5−70 cm long, 1−1,7 mm ∅, trigonous to somewhat rounded, smooth; base surrounded by stiff sheaths and tough usually blackened fibres through which the roots penetrate; leaf sheath light brown to brown-black, 1−6,5 cm long; blade linear, flat or folded, stiff, 9−40 cm × 1,6−3 mm, acute to acuminate, apex glabrous to minutely scabrid; inflorescence capitate or simple, when simple primary branches 0,4−0,5 cm long; spikelets in digitate clusters or on an elongated axis, sessile and at end of primary branches; spikelets 5−15 per cluster, when in a head 20 to many, ± lanceolate, 9−17,5 × 2−3 mm.

Swamps; seasonally wet grassland; 950−1900 m alt.

S. Africa.

P. poikilostachys Nelmes

syn.: ***Cyperus poikilostachys*** (Nelmes) Reynders

Annual herb; culms erect, obscurely or obtusely trigonous, slender, smooth, 10−20 cm tall, with few leaves at base; leaves much shorter than culm or ± of equal length, *filiform*, ± erect; sheaths tawny; inflorescence a simple anthela, contracted, with *1−10 spikelets*; these oblong-lanceolate, acute, 7−15 × 2−3 mm, 10−18-flowered; glumes dark brown (var. **poikilostachys**) or pale reddish-brown (var**. heterochrous**); *nutlet oblong-orbicular or oblong-obovate*, c. 1,5 × 1 mm.

Shallow moist soil overlying "laterite".

Two varieties are distinguished under **Cyperus**, based on colour of glumes; "as both are sympatric with an absence of individuals showing intermediate glume colours, Nelmes (1938) considered both colour variants as different species… an unreliable character for species delimitation in *Cyperus*" (Reynders in Phytotaxa 166: 41, 2014): – ***Cyperus poikilostachys*** var. ***heterochrous*** (Nelmes) Reynders (bas.: *Pycreus heterochrous* Nelmes); – var. ***poikilostachys***. – These two entities were collected in Zambia, Mwinilunga District, in 1938 (Milne-Redhead 4309 and 4311, respectively).

Perhaps close to *P. rubidomontanus*.

P. polystachyos (Rottb.) P. Beauv.; Renier, Flore Kwango 1: 72, 1948; Bodard in Bull. Soc. Bot. France 99: 61−63, 1952; Raynal in Adansonia, N. S. 15: 111−112, 1975; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 638, 1985; Clarke & Mannheimer, Cyper. Namibia: 93, 77 (map), 1999; Simpson & Inglis in Kew Bull. 56: 331, 2001; Kukkonen in Fl. Pakistan 206, Cyper.: 150−151, 2001; Prasad & Singh, Sedges Karnataka (India): 277−279, 2002; Ngwenya in Sabonet News 8/1: 18, 2003; Naczi & Ford, Sedges: uses…: 44, 2008 (under *Cyperus*); Lisowski, Fl. Rép. Guinée 1: 408, 2009 (? also includ. *P. intactus* p. 407−408); Fl. Trop. E. Afr., Cyper.: 289−291, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 122, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Mesterházy in Lidia 7/5: 116, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 279−280, 1983; Berhaut, Fl. ill. Sénégal 9: 294, 1988; Gordon-Gray, Cyper. Natal: 144, 1995 (nutlet); Fl. Eth. & Eritrea 6: 483−484, 1997 (under *Cyperus*); Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 77, 2002; Boulos, Fl. Egypt 4: 401, 2005; Steentoft, Flow. pl. W. Africa: 318, 2008; Vrijdaghs & al. in Pl. Ecol. Evol. 144: 55, 2011 (details); Fl. Gabon 44, Cyper.: 112, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 395, 2014; Illustrated Cyperaceae of Korea: 497, 2016; Clark & al., Guide vascul. fl. Kitty Hawk Woods, N. Carolina: 39, 2016 (under *Cyperus*); Fl. Mascareignes 202, Cyper.: 58, 2018.

bas.: ***Cyperus polystachyos*** Rottb. 1773, non Jungh. 1831 (= *Pycreus flavescens* subsp. *flavescens*).

syn.: *Chlorocyperus polystachyus* (Rottb.) Rikli; See also under the varieties below.

Annual or short-lived perennial herb, sometimes producing small stolons; culms tufted, 10−80 cm long, 1−3 mm ∅, trigonous to sometimes slightly triquetrous, smooth; leaf sheath pale yellowish-brown, sometimes with reddish or purplish base, 3−12 cm long; blade linear, flattish-plicate, 5−50 cm × 1−5 mm, acute to acuminate, apex sometimes ± scabrid; inflorescence a congested head-like anthela of numerous crowded spikelet-clusters, or more lax with few-many stalked brush-like groups of spikelet-clusters, or inflorescence with laxly arranged spikelets (erect-patent spikelets having a characteristically neat "plaited" appearance); spikelets 5−30 per cluster, ± linear, 6−19 × 0,8−1,8 mm.

Wet grassland; lakeshores; swamps; marshy meadows with species of *Ascolepis*; in a few places with *Typha*; mangrove; short grassland with standing water; dunes; sands temporarily humid; sandy shores of lagoons; edges of pools and ponds; weed of hydric soil in ditches, waste places, grasslands, disturbed agricultural areas as fields, rice fields; 0−2400 m alt.

A variable species especially in size and form of inflorescence.

Canary Isl.; S Italy (e.g. Ischia isl.; Sibilio & al. in Pl. Biosystems 149: 933−942, 2015); Morocco, Algeria, Tunisia, Egypt; Cape Verde Isl.; Bioko/Fernando Poo, Príncipe; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Mauritius, Comoros, Réunion, Seychelles, Andaman & Nicobar Isl. (Prasad in Nelumbo 59: 157, 2017); Palestine, Yemen (Wood, Handbook Yemen flora: 327, 1997), Iraq, Pakistan, India, Sri Lanka, E-wards to China, Japan, Philippines, Indonesia; Australia; S USA, Mexico, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012). – Cosmopolitan (weed) in tropical & subtropical regions, extending into warm-temperate climates.

Infraspecific categories are numerous. Kükenthal (in Engler, Pflanzenreich IV. 20/101: 367−373, 1936, under *Cyperus*) enumerates (in bold) 11 varieties and 5 forms, his index (p. 656) comprises 17 varieties and 9 forms. Two subspecies are currently recognised, viz. subsp. *polystachyos* and var. *microdontus* (syn. var. *laxiflorus*). They "do not show any difference… in floral characters … However, the plants look entirely different as the typical variety [var. *polystachyos*] has congested inflorescence and the var. *microdontus* is with open, spreading inflorescence. Intermediatre forms are also found" (Prasad in Nelumbo 59: 157, 2017). It can be added that var. *polystachyos* has more distinctly acute or mucronate glumes. – Here we distinguish these 2 varieties: – var. **polystachyos** [syn.: *Pycreus caespitosus* (Poir.) C. B. Clarke; *Cyperus caespitosus* Poir. 1806, non Llanos 1851, nec A. St.-Hil. 1833; *Cyp. polystachyos* var. *caespitosus* (Poir.)

Kük., var. *thouarsii* (Kunth) Kük., var. *fascicularis* (Poir.) Kuntze, var. *chlorostachys* (Boeckeler) Kük.; *Cyp. fascicularis* Poir.; *Cyp. olidus* Vahl; *Cyp. polystachys* Boeckeler; *Cyp. olivaceus* Vahl; *Cyp thouarsii* Kunth; *Cyp. sonderi* J. A. Schmidt; *Cyp. liebmannii* Steud.; *Cyp. boivinii* Boeckeler; *Pycreus odoratus* Urb. 1900, (L.) Urb. according to Boulos, o.c.: 400]; etc. See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; – var. **microdontus** (Torr.) Govaerts, World Checklist Cyperaceae: 610, 2007 [bas.: *Cyperus microdontus* Torr. 1836; syn.: *Cyperus polystachyos* var. *laxiflorus* Benth. 1878, and subsp. *laxiflorus* (Benth.) Lye 1983; *Cyp. polystachyos* var. *leptostachyus* Boeckeler; *Pycreus polystachyos* var. *laxiflorus* (Benth.) C. B. Clarke; *Cyperus holosericeus* Link; *Cyp. polystachyos* subsp. *holosericeus* (Link) T. Koyama; *Cyp. polystachyos* var. *holosericeus* (Link) C. B. Clarke; *Pycreus polystachyos* subsp. *holosericeus* (L.) T. Koyama; *Pycreus ferrugineus* sensu Cufod., Enum. 1970, non (Boeckeler) C. B. Clarke (= *P. intactus*); etc., cf. above].

Relationship is with *Pycreus intactus*. *P. polystachyos* has linear, rather dull brown spikelets, *P. intactus* lanceolate, greenish-red spikelets. According to Gordon-Gray (1995: 147) *P. polystachyos* var. *microdontus* is poorly recorded for S. Africa, Natal, but "most herbarium specimens are probably placed with *P. intactus* … which intergrades".

P. polystachyos is the most common *Pycreus* species in weed communities in disturbed and wet places (Mesterházy 2012: 116).

There is some resemblance to *Cyperus tonkinensis* var. *baikiei* (cf. p. 145).

P. pseudodiaphanus S. S. Hooper, incl. var. *occidentalis* S. S. Hooper; Lowe & Stanfield, Fl. Nigeria: Sedges: 111, 1974; Lisowski, Fl. Rép. Guinée 1: 408, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012; Fl. Gabon 44, Cyper.: 115–116, 2012. – Icon.: Berhaut, Fl. ill. Sénégal 9: 295–296, 1988.

syn.: ***Cyperus pseudodiaphanus*** (S. S. Hooper) Lye, Nord. J. Bot. 3: 231, 1983, and Lye, Lidia 7: 97, 2011.

Annual tufted herb; culms 7–15–40 cm long, 0,5–1 mm ∅, triquetrous, glabrous; leaves many in lower part of culm; blade flat, 2–10 cm long, 1–2 mm wide; inflorescence a terminal fascicle of 2–5 spikelets, or an anthela of 1 sessile fascicle with 3–6 spikelets and 1–2 fascicles of spikelets on rays to 3 cm long, rays unequal in length; spikelets linear-lanceolate, 5–12 × 2–5 mm, 15–30-flowered; nutlet cylindric, c. 1 × 0,5 mm, greyish-white, often iridescent.

Damp places; bare sands temporarily humid; ricefields; hollows in coastal dunes; the species is weakly halophilous; oozing sandstone; temporary marshland on sandstone; near sea-level to 200 m alt.

The record from NW Gabon is based on a photograph of a now lost specimen from Ogooué-Ivindo): identification uncertain.

The 2 vars. described, viz. *Pycreus pseudodiaphanus* var. *pseudodiaphanus* (from Ghana), and var. *occidentalis* S. S. Hooper (from Senegal, Casamance) are based on size of spikelets and nutlets, these wider and larger in var. *occidentalis* (spikelets 3,5–5 mm wide, not 2–3 mm; nutlets 0,9–1,25 × 0,9–1 mm, not 0,7–1 × 0,6–0,9 mm).

P. pubescens Turrill 1914, non *Cyperus pubescens* J. Presl & C. Presl, nec Steud. 1854.

syn.: ***Cyperus gossweileri*** Kük.

Perennial herb with short rhizome; culms erect, to 85 cm tall, triangular, grooved, pubescent, covered at base by fibrous sheaths; leaves linear, to 30 cm long, 3 mm wide, *pubescent* on both sides; inflorescence a simple anthela, lax, with 4–5 rays to 10,5 cm long, of 2–8 spikes, hemispherical to ovate in outline, to 3,5 cm ∅, with

few and lax spikelets; these lanceolate, acute, 1–2 cm × 3,5–5 mm, flattened, many-flowered.

Sides of brooks.

A *Pycreus* with "remarkable characters … Similar hairy leaves and stems are very uncommon in those *Cyperaceae* which have distichous glumes. The nuts are remarkably persistent on the rhachis, and the style too is subpersistent, though it finally breaks off, leaving its base … as a short apiculus. The two style arms fuse when the flowering period is over, and so in ripening nuts there appears to be an entire style" (Turrill in Bull. Misc. Inform. Kew 1914: 339).

P. pumilus (L.) Nees, incl. var. *patens* (Vahl) Hoenselaar, and subsp. *patens* (Vahl) Podlech, and var. *punctatus* Domin 1915; Thulin, Fl. Somalia 4: 143, 145, 1995 (under *Cyperus*); Clarke & Mannheimer, Cyper. Namibia: 93, 77 (map), 1999; Fl. Eth. & Eritrea 6: 484, 1997 (under *Cyperus*); Kukkonen in Fl. Pakistan 206, Cyper.: 151–152, 2001; Prasad & Singh, Sedges Karnataka (India): 279–280, 2002; Cafferty & Jarvis in Taxon 53: 179, 2004 (typification); Naczi & Ford, Sedges: uses…: 44–45, 88, 2008 (under *Cyperus*); Lisowski, Fl. Rép. Guinée 1: 408, 2009; Fl. Trop. E. Afr., Cyper.: 283, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 174, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Kükenthal in Engler, Pflanzenreich IV. 20/101: 377, 1936 (under *Cyperus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 106, 1974; Haines & Lye, Sedges & rushes E. Afr.: 290–291, 1983 (under *Cyperus*); Berhaut, Fl. ill. Sénégal 9: 297, 1988; Gordon-Gray, Cyper. Natal: 144, 1995 (nutlet); Bajpai & al. in Phytomorphology 53: 118, 121 (text), 2003 (nutlet, under *Cyperus*); Vrijdaghs & al. in Pl. Ecol. Evol. 144: 52, 61, 2011 (details); Fl. Gabon 44, Cyper.: 117, 2012 (under *Cyperus*).

bas.: ***Cyperus pumilus*** L. 1756, non Rottb. 1773 (= *Pycreus sanguinolentus* subsp. *sanguinolentus*).

syn.: *Cyp. pumilus* var. *patens* (Vahl) Kük. and other vars.; *Cyp. patens* Vahl; *Pycreus patens* (Vahl) Cherm.; *Dichostylis patens* (Vahl) Rikli; *Cyperus pusillus* Vahl 1805; *Cyp. truncatulus* Steud.; *Cyp. nitens* Retz., incl. var. *muticus* Boeckeler; *Pycreus nitens* (Retz.) Nees; *Dichostylis nitens* (Retz.) Palla; *Juncellus pumilus* Peter; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb 1–40 cm tall; culms tufted, 1–18 cm long, 0,3–1 mm ∅, triquetrous, smooth; leaf sheath brown, 0,5–2 cm long, sometimes almost absent; blade linear, flat, 2,4–15 cm × 1–2 mm, acuminate, glabrous to minutely scabrid; inflorescence capitate or simple with primary branches 0–4, 1,1–4,5 cm long; spikelets loosely arranged in digitate clusters, sometimes on an elongated axis, the clusters at end of primary branches, often 1 or more clusters sessile; spikelets 6–12 per cluster, oblong, flattened, 5–14(–20) × 1,3–2 mm.

Along drainage channels; seasonal wet hollows in grassland; stream sides; riverbeds; swamps; often on shallow soils over rocks; cultivated and disturbed habitats on sandy soils; hollows in coastal dunes; wooded savannas; rice fields; dry bottoms of ponds and on their edges; wooded marshes in sunny places; rather damp sandy fields with a clayey subsoil with dwarf *Eriocaulaceae*; 0–2100 m alt.

Variable species (many varieties described). "African specimens have generally longer and broader glumes than Indian, but the ranges overlap" (Fl. W. Trop. Afr., ed. 2, 3/2: 302, 1972).

Tropical and subtropical Old World, extending into the Himalayas. – Spain (Verloove & al. in Fl. Medit. 24: 201, 2014); Namibia, S.

Africa, Botswana, Swaziland; Madagascar, Comoros, Aldabra; S Asia from Pakistan, NW India, Sri Lanka E-wards to S China, Taiwan, Malesia, Indonesia, Philippines, New Guinea; N Australia. Introduced in S USA (spreading lately), West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012).

Could be confused with *Cyperus cuspidatus*, *C. tenuispica*, *Pycreus hildebrandtii*, *P. polystachyos*.

P. rubidomontanus Browning, Phytotaxa 405: 83, 2019. – Icon.: ibid.: 84−86, 88 (map).

syn.: *P. atrorubidus* sensu auctt. ex Afric. occid. non Nelmes 1952 (cf. under *P. atrorubidus* above).

Perennial densely tussocky herb, with thin rhizomes and stolons c. 0,5−1 mm ∅; culms many per tussock, 8−25 cm tall; leaf blade filiform, 8,5−16 cm × 0,3−1 mm; inflorescence pseudolateral with a single sessile cluster of 3−16 spikelets, rarely only one spikelet; bract 1 (or with an additional much smaller bract), erect, to 13 cm long; spikelets lanceolate, 3−16 × 2−2,5 mm; glumes not closely imbricate, dark reddish-brown to ± black, with dark green midrib; nutlet compressed, red-brown, c. 1 mm long, with papillae in longitudinal rows.

Grassland in temporarily humid depressions; between rocks, between bare stones and tall herbs; edges of streams; in crevices of soft rock in a regularly flooded stream bed; forming mats; 1000−2700 m alt.

Has been confused with *P. atrorubidus* (annual); also similar to *P. reductus* Cherm. from Madagascar; probably most related to *P. poikilostachys* Nelmes (annual !).

P. sanguineosquamatus Van der Veken – Icon.: Bull. Jard. Bot. Etat Bruxelles 25 (!): 146, 1955.

Annual tufted herb; culms erect, obtusely trigonous, grooved-striate (when dried); 3−15 cm tall, smooth, glabrous; leaves basal, much shorter than culms; sheath tubular, red, striate, entire; blade filiform, 1−6,5 cm × 1 mm, erect or suberect; inflorescence a simple anthela, contracted, with 2−6 spikelets; these sessile, digitate, obliquely spreading or curved, flattened, oblong-lanceolate, 8−25 × c. 4 mm, 6−28-flowered, margins serrate; stamens 2; style red, deeply bifid; nutlet obovate, 1,3−1,5 mm long, densely and minutely dotted.

Ecology not recorded.

? Known only from the type (Bredo 2750) collected in 1939.

Described as resembling (*Cyperus teneriffae* Poir. =) *Cyp. rubicundus* Vahl in the aspect of the spikelets, but very different from that species in "the form of the inflorescence, its 9−11-nerved glumes, its 3 stamens and 3 stigmas, and its trigonous nutlet". However, the illustration of *Cyp. rubicundus* figuring in Haines & Lye, Sedges & rushes E. Afr.: 258, 1983, does not show a great difference as regards the form of the anthela and the spikelets. The only marked difference is the number of stamens and stigmas, and the form of the nutlet. – Cf. under **Cyperus rubicundus** Vahl 1805 p. 137 above.

The relationship between *Pycreus sanguineosquamatus* and *Cyperus fontinalis* (Cherm.) Kük. (bas.: *Pycreus fontinalis* Cherm.), a plant from C Madagascar (illustration by Kükenthal in Engler, Pflanzenreich IV. 20/101: 341, 1936), was discussed by Larridon & al. in Phytotaxa 166: 43, 2014; and in the end, *Cyp. fontinalis* was put in synonymy under *P. sanguineosquamatus*: "when comparing the type material of both taxa, this distinction in growth forms is, in our opinion, no more than a matter of interpretation as no striking differences could be observed between the plant bases of the Congolean and Malagasy material. In addition, glumes and nutlets … are very similar. The type locality of *Cyperus fontinalis* in Antsirabe [Madagascar] seems to have been destroyed due to exploitation of the hot water from the springs … and the species may even be locally extinct … The salt marshes in southern Congo are similarly being exploited. The salt marshes of this region are of volcanic origin and provide a habitat to a large number of endemic plant species …". See also our discussion under *Cyperus fontinalis* (p. 109), and also under *Cyp. rubicundus* (p. 137). – However, we prefer treating Van der Veken's plant apart.

P. sanguinolentus (Vahl) Nees 1834 (1835) nom. illeg. ex C. B. Clarke 1893, incl. subsp. *nairobiensis* Lye, fa. *flaccidulus* (Boeckeler) Cufod., and fa. *neurotropis* (Steud.) Cufod. (etc.); cf. Govaerts & Simpson, World Checklist Cyperaceae: 612−613, 2007. – Fl. Eth. & Eritrea 6: 480, 1997 (under *Cyperus*); Simpson & Inglis in Kew Bull. 56: 331, 2001; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 78−79, 2001; Prasad & Singh, Sedges Karnataka (India): 282−283, 2002; Naczi & Ford, Sedges: uses…: 36, 43−44, 53, 73, 88, 2008; Fl. Trop. E. Afr., Cyper.: 287−288, 2010. – Icon.: Nord. J. Bot. 1: 618, 1981; Haines & Lye, Sedges & rushes E. Afr.: 271, 1983; Kukkonen in Fl. Pakistan 206, Cyper.: 148, 2001; Vrijdaghs & al. in Pl. Ecol. Evol. 144: 61, 2011 (nutlet); Fl. China, Ill. 23: 329, 331−332, 2012; Illustrated Cyperaceae of Korea: 493, 2016; Fl. Mascareignes 202, Cypér.: 56, 2018.

bas.: ***Cyperus sanguinolentus*** Vahl 1805, nom. cons.

syn.: *Cyp. sanguinolentus* subsp. *nairobiensis* (Lye) Lye, and fa. *rubromarginatus* (Schrenk) Kük. (and many forms, vars. & subspp.); *Cyp. pumilus* Rottb. 1773, nom. illeg., non L. 1756; *Cyp. eragrostis* Vahl 1805, and Kunth 1807 (See Fl. Trop. E. Afr., Cyper.: l.c.), incl. var. *flaccidulus* Boeckeler, and fa. *flaccidulus* (Boeckeler) Cufod. (and many other vars.); *Cyp. neurotropis* Steud.; *Cyp. erythraeus* Schrad.; *Cyp. flavescens* L. var. *rubromarginatus* Schrenk, and fa. *rubromarginatus* (Schrenk) Regel; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

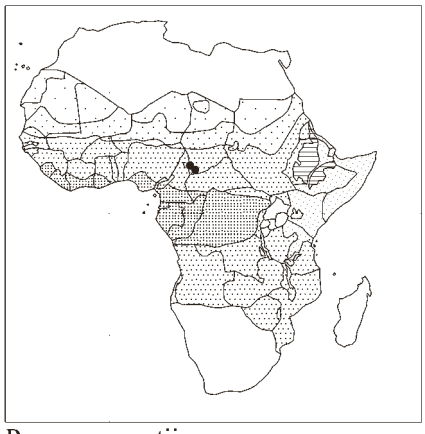
Annual or short-lived perennial herb; culms tufted, 21−65 cm long, 0,8−2,5 mm ∅, trigonous to sometimes triquetrous, smooth, lower part with several nodes; leaves basal; sheath yellowish-brown to green to sometimes reddish, 3−10,7 cm long; blade linear, flattish or plicate, 8−17 cm × 1−4 mm, acuminate to acute, sometimes ± scabrid; inflorescence ± capitate or simple; primary branches 0−5, 1−3 cm long; spikelets crowded in digitate, ovoid clusters, sessile or at end of primary branches; spikelets 3−20 per cluster, ± oblong, 0,8−1,8 cm × 2−2,8 mm.

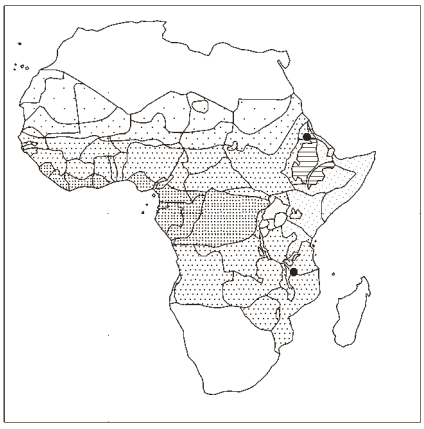
Along streams; in riverbeds, ditches, waterholes; (seasonally) wet grassland; thin soil over rocks; weed in rice-fields, and other damp crop fields; 950−2200 m alt.

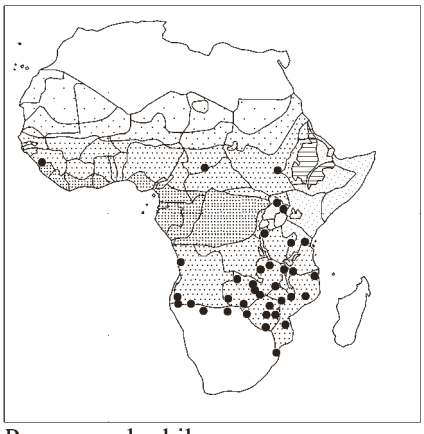
Saudi Arabia, Yemen (Wood, Handbook Yemen flora: 327, 1997); Turkey; widely distributed in warmer parts of C & E Asia, E Hemisphere, such as Russian middle Asia, Caucasus, Afghanistan, India, Sri Lanka, SE Asia, China, Japan, Philippines, Indonesia; Australia; Pacific islands. Naturalised in other regions of the World, e.g. SE USA: locally common in periodically disturbed sites. Its introduction is associated with the cultivation of rice, and its dispersal and range expansion there are associated with road construction and maintenance activities (Naczi & Ford, o.c.: 44).

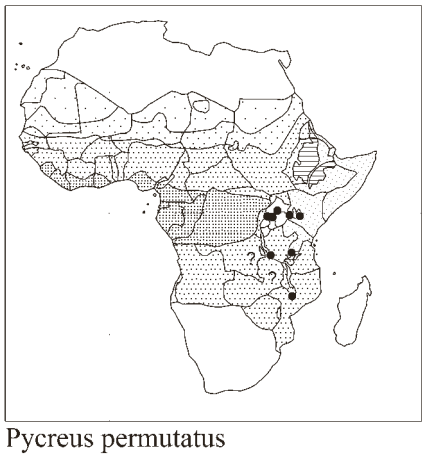
Subsp. *nairobiensis* Lye has slender culms, narrow spikelets and leaves, and wrinkled nutlet, characters not consistent.

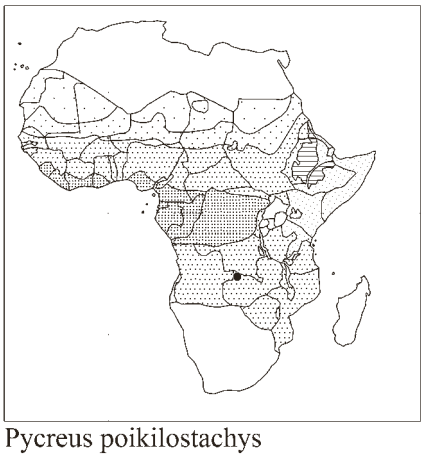
P. scaettae Cherm., incl. var. *katangensis* Cherm.; Renier, Fl. Kwango 1: 72, 1942 (as *P. vanderystii*); Lowe & Stanfield, Fl. Nigeria: Sedges: 111, 1974; Fl. Trop. E. Afr., Cyper.: 296, 2010; Reynders & al. in Scripta Bot. Belg. 46 (AETFAT XIX,

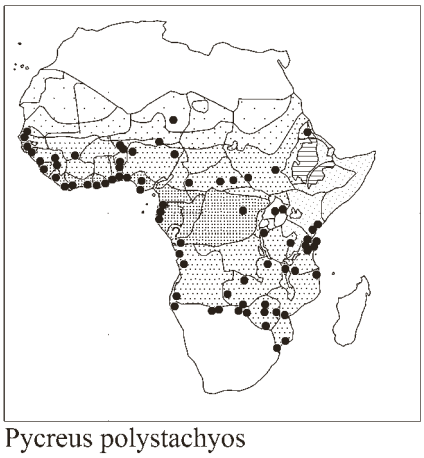

Pycreus pagotii

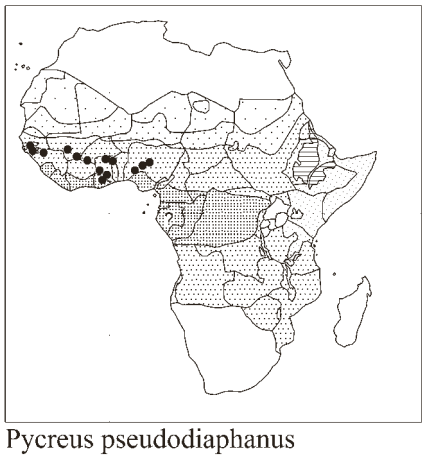

Pycreus pauper

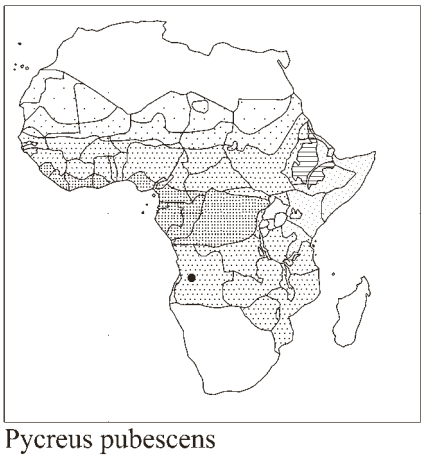

Pycreus pelophilus

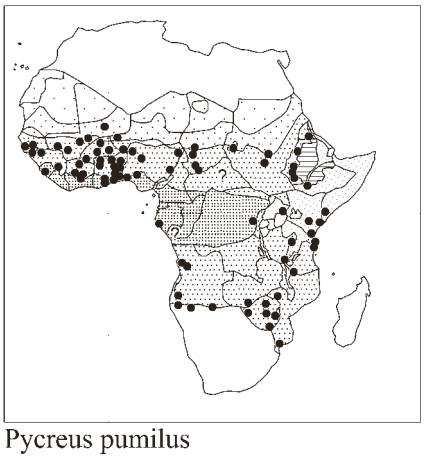

Pycreus permutatus

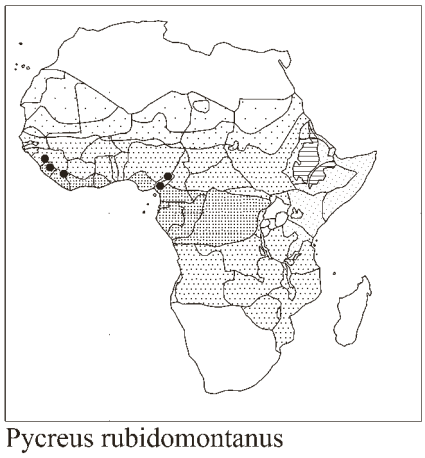

Pycreus poikilostachys

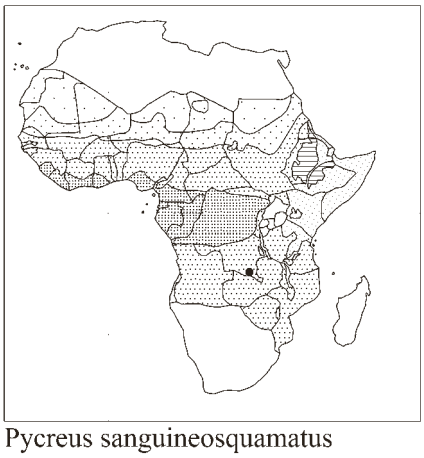

Pycreus polystachyos

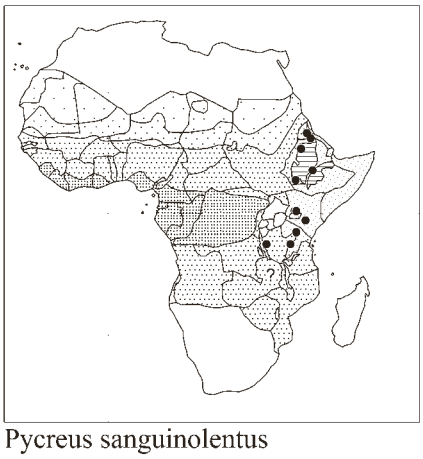

Pycreus pseudodiaphanus


Pycreus pubescens


Pycreus pumilus


Pycreus rubidomontanus


Pycreus sanguineosquamatus


Pycreus sanguinolentus

Madagascar): 444, 2010. – Icon.: Fl. Gabon 44, Cyper.: 109, 2012 (as *Cyperus fibrillosus* var. *scaettae*); Larridon & al. in Phytotaxa 166: 42, 2014.

syn.: *P. katangensis* Cherm. 1933, nom. nud.; *P. vanderystii* Cherm.; ***Cyperus scaettae*** (Cherm.) Reynders, incl. var. *vanderystii* (Cherm.) Reynders; *Cyp. fibrillosus* Kük., incl. fa. *katangensis* (Cherm.) Kük., var. *scaettae* (Cherm.) Kük., and var. *vanderystii* (Cherm.) Kük.; *Cyp. monostigma* C. B. Clarke 1907, p.p. quoad specim. Chevalier 4170, Brazzaville (cf. under *Cyp. clavinux* above).

Perennial, densely tufted herb; culms 10,5−20−35 cm long, 0,3−0,7 mm ∅, trigonous, smooth, base swollen; leaf sheaths 3,5−6 cm long, old sheaths turning into tough brownish-black fibres, surrounding base of culms and leaves; blades filiform, 7−10 cm long, 0,7−0,8 mm wide, acute, glabrous to minutely scabrid at apex; inflorescence loosely capitate with spikelets in a loose white digitate cluster; spikelets 5−7 per cluster, ± ovoid, 0,8−1,15 cm × 2,2−2,8 mm; glumes *pale-brownish-yellow*.

Hard packed path in *Brachystegia* woodland; grassland liable to burning; meadow; swampy savanna; river sides; 100−2100 m alt.

The differences between the 2 varieties (var. *scaettae* and var. *vanderystii*) upheld by Reynders (Phytotaxa 166: 43, 2014) refer to the average size of the glumes, although "there is a slight overlap". Var. *vanderystii* has overall larger dimensions of plant and glumes, and the glumes are yellowish.

A species different from *P. fibrillosus* (Kük.) Cherm. that has a flexuous rachilla hardly visible between the glumes; *P. scaettae* "has larger spikelets with strongly imbricate glumes and a straight rachilla that is visible between the glumes".

Superficially resembling *Cyperus niveus* var. *tisserantii*.

? Also in Ghana.

P. smithianus (Ridl.) C. B. Clarke; Ridley in J. Bot. 22: 15−16, 1884 (= description under *Cyperus smithianus* Ridl.); Fl. Trop. E. Afr., Cyper.: 298, 2010 (under *Pycreus fluminalis*); Fl. Gabon 44, Cyper.: 112, 2012 (under *Cyperus fluminalis*).

bas.: ***Cyperus smithianus*** Ridl. (Zaire, mouth of Congo river, Ch. Smith n°s 47, 67).

Culms triquetrous c. 23 cm long, base bulbous; leaves numerous, stiff, linear, c. 18 cm long, acuminate; sheath membranous, striate; involucral bracts 4, spreading, 10 cm long; inflorescence a loose head of crowded linear spikelets, these white, 1 cm long; glumes c. 2 mm long, rather broad, 3-ribbed; style 3-fid; nutlet small, ± trigonous (not quite ripe).

Ammophilus plant.

Said to be near *Cyperus proteinolepis* [sin. auct.; *Cyp. proteinolepis* Steud. 1854 (= *Cyp. jeminicus*) = *Cyp. conglomeratus*; *Cyp. proteinolepis* Boeckeler 1879 = *Cyp. rotundus*]; probably meant *C. conglomeratus* (inflorescence a congested head).

In Flora of Tropical East Africa, Cyp.: 298, 2010, compared with *Pycreus fluminalis* (Ridl.) Troupin: "the two species are very similar, but *P. smithianus* has somewhat thicker and coarser leaves and glumes, and is only found in the Congo region." All examined specimens studied were wrongly named and belong to *P. fluminalis*. In Fl. du Gabon 44, Cyper.: 112, 2012, *Cyp. smithianus* is also mentioned as resembling *Cyp. fluminalis*. However, the distinguishing characters are questionable. In Flora of Tropical Africa 8: 301, 1902, Clarke cites the following specimens: Smith, Hens C 116, Dewèvre 706, Luja 184, all from the mouth of the (Lower) Congo River E-wards to Kinshasa-Stanley Pool; but adding Stuhlmann specimens (1593, 3960) from Tanzania, Karagwe, Bukoba (T1 = 1°30'S × 31°E). In other recent treatises *Pycreus* (*Cyperus*) *smithianus* is cited by, e.g., Lejoly & al. (Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 114, 2010; c. 0°31'N × 25°14'E), Onana (Vascul. pl. Cameroon: 163, 2011), Velayos & al. (Fl. Guinea Ecuat. 11: p. 129−130 & fig. 212 p. 396, 2014), and Larridon & al. (in Bot. J. Linn. Soc. 172: 114, 2013, from Burundi).

The taxonomic identity of *P. smithianus* seems doubtul. Cf. under **P. fluminalis** above. Not mapped by us.

P. spissiflorus C. B. Clarke; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006.

syn.: ***Cyperus spissiflorus*** (C. B. Clarke) K. Schum.

Perennial herb with woody rhizome; culms 20−30 cm tall, covered with black leaf sheaths at base; leaves 2/3 the length of culm, c. 3 mm wide; inflorescence a simple anthela with 4−5 rays 0−2,5 cm long, or congested into a head; spikes loose of 3−9 spikelets; these oblong-lanceolate, acute, *brownish-yellow*, *6−8* × c. 2 mm, *flattened*, 16−20-flowered; glumes closely packed, elliptic, mucronate; stamens 3; style 2-fid; nutlet small, obovate, biconvex. Description from a unique young specimen.

Ecology not recorded.

"Resembling some forms of *Pycreus globosus* Rchb." = *Cyperus flavidus* Retz. = *Pycreus flavidus* (Retz.) T. Koyama (from S Europe – N. Africa, S. Africa, E-wards to E Australia; but differs in the woody rhizome (Fl. Trop. Afr. 8: 304, 1901). – Near *P. chrysanthus*.

Known only from the type (A. Whyte s.n.), Mt Mulanje.

Cyperus spissiflorus "C. B. Clarke"sensu Baum 1903 = *Cyperus hensii*.

P. subtrigonus C. B. Clarke; Boupoya-Mapikou in Scripta Bot. Belg. 46 (AETFAT XIX, Madagascar): 95, 2010. – Icon.: De Wildeman & Durand, Ill. Fl. Congo 1: pl. 19, 1898; Fl. Gabon 44, Cyper.: 113, 2012 (nutlet).

syn.: ***Cyperus subtrigonus*** (C. B. Clarke) Kük.

Perennial herb with culms at end of erect or creeping stolons 1 mm ∅; culms solitary or tufted, 10−30 cm long, c. 1 mm ∅, trigonous-terete, glabrous, smooth; leaves only in lower 3−8 cm of culm; upper sheaths green, lower straw-coloured to reddish-brown; blades flat, 4−10 cm long, 1−3 mm wide; inflorescence a solitary spike, 1,5−3 cm wide, of 3−30 spikelets; these sessile, contracted, ± linear, 10−18 × 1,7−2 mm, light yellowish-brown, somewhat flattened, 10−30-flowered; glumes ovate, 1,6−2 mm long, reddish-brown; nutlet obovoid, with a protuberance on each side so it is almost trigonous, 0,5−0,5 mm, blackish-brown.

Seasonally humid meadows; forest clearings on hydromorphic soil; 400−700 m alt.

Very close to *P. flavescens*, *P. lanceolatus*.

"This species is altogether a *Pycreus*; but it is the only one which affords any clue to the route by which *Cyperus* has passed into *Pycreus*. The nut has sometimes a large asymmetric depression, being then similar to the nut of *Carex*, called 'nux prava' by Boott" (Fl. Trop. Afr. 8: 293, 1901).

P. sumbawangensis Hoenselaar; Fl. Trop. E. Afr., Cyper.: 297−298, 2010.

syn.: ***Cyperus sumbawangensis*** (Hoenselaar) Lye

Perennial densely tufted herb; culms 10−34 cm long, 0,4−1 mm ∅, rounded to somewhat trigonous, smooth, bases surrounded by many thick black fibres from old leaf sheaths; sheath brownish-black, sometimes somewhat green, 2−7 cm long; blade linear,

folded or canaliculate, 6−11 cm × 0,5−1,5 mm, acute to acuminate, tips often burned and black, glabrous; inflorescence loosely capitate with spikelets in a loose digitate cluster; spikelets ovoid, 3−11 per head, 0,6−1,3 cm × 2,5−5 mm; glumes red-brown to black.

Grassland, seasonally flooded; 1500−2500 m alt.

? S. Africa.

Near *P. fibrillosus*, and has some resemblance with *P. permutatus*.

P. testui Cherm.; Lisowski, Fl. Rép. Guinée 1: 409, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011. – Icon.: Berhaut, Fl. ill. Sénégal 9: 298, 1988.

syn.: *Cyperus laxespicatus* Kük. var. *testui* (Cherm.) Kük.

Perennial herb with short woody rhizome; culms 40−60−90 cm long, 1−2 mm ∅, smooth, trigonous, glabrous, base bulbous; leaves few, shorter than culms or equal, 1,5−3 mm wide, rigid, folded, apex lightly scabrous; inflorescence a simple or compound anthela with 2−8 rays strongly unequal, to 1−8 cm long; spike of 6−15 spikelets; these spreading, strongly compressed, 0,8−1,5 cm × 2 mm, 12−24-flowered.

Wet savanna; swamp, and swamp recently burned.

P. unioloides (R. Br.) Urb., incl. var. *typicus* Domin, nom. invalid.; Fl. Eth. & Eritrea 6: 481−482, 1997 (under *Cyperus*); Lisowski, Fl. Rép. Guinée 1: 409, 2009; Fl. Trop. E. Afr., Cyper.: 305, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 226, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 174, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Clarke, Ill. Cyper.: pl. IV, 1909 (as *Pycreus angulatus*); Haines & Lye, Sedges & rushes E. Afr.: 273, 277 figs. 565−566 (as *Cyperus mortonii*), 1983; Berhaut, Fl. ill. Sénégal 9: 299, 1988; Gordon-Gray, Cyper. Natal: 148, 1995 (nutlet); Cook, Aquat. & wetland pl. south. Africa: 109, 2004; Fl. China, Ill. 23: 329, 2012.

bas.: ***Cyperus unioloides*** R. Br.

syn.: *Cyp. unioloides* var. *bromoides* (Link) C. B. Clarke, fa. *reductus* Kük. (and several other forms and vars.); *Cyp. mortonii* sensu Haines & Lye, Sedges & rushes E. Afr., 1983: l.c., non (S. S. Hooper) Lye; *Cyp. angulatus* Nees 1834, non W. Watson 1876; *Cyp. bromoides* Link; *Pycreus angulatus* (Nees) Nees ex C. B. Clarke, incl. fa. *bromoides* (Link) Lidm.; *Pycreus* sp. aff. *alleizettei* Cherm. sensu Lebrun & al., Cat. pl. vascul. Tchad mérid.: 215, 1972 (specim. Audru 1607, 1611, 1744) in César & Chatelain, Fl. ill. Tchad.: 126, 2019; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Short-lived perennial herb with short rhizome soon dying off; culms tufted, 0,36−1 m long, 1,4−7 mm ∅, triquetrous, sometimes ± trigonous, smooth, often scabridulous above, scaly below; leaf sheath (dark) reddish-brown, 3−10 cm long; blade linear, flattish-plicate, sometimes folded, 21−45 cm × 1,8−4,5 mm, acute, apex often scabrid; inflorescence simple, open or congested with spikelets in digitate clusters or on an elongated axis, sessile or at end of primary branches, these 3−6, 2,5−7,5 cm long; spikelets 7−22 per cluster, lanceolate, 1−1,8 cm × 3−4,6 mm.

Small grass swamp in *Albizia zygia*, *Combretum* woodland; swamps; basalt clay depression; grassland; riverbanks; ditches; moist places in savanna; 300−1950 m alt.

S. Africa, Botswana, Lesotho, Swaziland (not in Namibia, fide Archer & Craven, Cyper. Namibia: 24, 2004); Madagascar; India, Bhutan, E-wards to China, Indonesia, Japan, New Guinea, Philippines; E Australia; C. & S. America, West Indies

(Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012). – Pantropical, subtropical plant.

See note under **Pycreus mortonii** S. S. Hooper p. 294.

P. waillyi Cherm., Bull. Soc. Bot. France 85: 366−367, 1938; Bull. Jard. Bot. Natl. Belg. 45: 389, 1975; Fl. Trop. E. Afr., Cyper.: 277, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 291, 1983 (as *Cyperus wailleyi* !); Lisowski & Malaisse, Groupements végétaux des mares et des anses calmes des rivières du Plateau des Kundelungu, in Symoëns, Exploration hydrobiologique du bassin du Lac Bangweolo … 18/1: 35, 1989.

syn.: ***Cyperus waillyi*** (Cherm.) Lye (as *C. wailleyi*).

Annual herb, completely or partially submerged in water; culms 5−25 cm long, 0,4−0,8 mm ∅, trigonous, smooth; leaves basal; sheath straw-coloured yellow, 2,5−4 cm long; blade flat, c. 8−18 cm long, 0,5−1,5 mm wide, acuminae, glabrous; inflorescence a simple anthela of 1 sessile spikelet and 4−5 stalked spikelets, rays 5−8,5 cm long; spikelets lanceolate, 0,8−1,2 cm × 1,7−2 mm. – Neither leaves nor culm able to support themselves out of the water.

Submerged in stream; pools in steppe, marsh; 1490−2150 m alt.

P. xantholepis Nelmes; Fl. Trop. E. Afr., Cyper.: 291, 2010.

syn.: ***Cyperus xantholepis*** (Nelmes) Lye

Annual herb; culms tufted ?, 23−38 cm long, c. 1 mm ∅, triquetrous, smooth; leaf sheath pale brown, 2,2−3,5 cm long, sometimes ± purplish at base; blade linear, 10−17 cm x1,2−1,6 mm, acuminate, apex scabrid; inflorescence simple with primary branches 1−2, 2−5,3 cm long; spikelets in loosely digitate clusters at end of primary branches, at least one cluster sessile; spikelets 3−5 per cluster, ovoid, 1,2−1,5 cm × 4 mm (after fruiting to 3,4 cm long).

Swamp; rice fields; muddy pool in open; 950−1350 m alt.

P. zonatus Cherm. 1921, non *Cyperus zonatus* Kük. 1913 (= *Pycreus afrozonatus* Lye); Fl. Trop. E. Afr., Cyper.: 278, 2010 (as *P. zonatissimus* Cherm. 1928). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 285, 1983 (as *Cyperus zonatissimus*).

syn.: ***Cyperus zonatissimus*** (Cherm. 1928), Kük. 1936; *Pycreus zonatissimus* Cherm. 1928, nom. illeg.

Annual herb; culms tufted, 10−30 cm long, 0,6−1 mm ∅, trigonous to rounded, smooth; leaf sheath brown, 1,7−4,5 cm long, often with a purplish base; blade linear, folded, 4,7−16,5 cm × 0,8−1 mm, acute, glabrous; inflorescence loosely capitate; spikelets ± sessile, 2−11 per head, ovoid, 1−1,5 cm × 2,8−3,8 mm.

Seasonally moist depression; wet grassland; ditches at roadsides; 1000−2300 m alt.

C Madagascar.

SYNONYMS:

Pycreus albomarginatus Mart. & Schrad. ex Nees
= **Pycreus macrostachyos**
sp. aff. *alleizettei* Cherm. sensu Lebrun & al. 1972
= **P. unioloides**
angulatus (Nees) Nees ex C. B Clarke, incl. fa. *bromoides* (Link) Lindm. = **P. unioloides**
angulatus sensu Fl. W. Trop. Afr., ed. 1, non Nees
= **P. acuticarinatus**
ater (C. B. Clarke) Cherm. = **P. melas**
atrorubidus auctt. Afric. occid., non Nelmes
= **P. rutidomontanus**
baoulensis A. Chev. 1920, nom. = **Mariscus baoulensis**

bathiei Cherm. = **Pycreus flavescens** subsp**. microglumis** var. **castaneus**
caespitosus (Poir.) C. B. Clarke = **P. polystachyos** var**. polystachyos**
chorisanthus C. B. Clarke = **P. pelophilus**
cimicinus (J. Presl & C. Presl) H. Pfeiffer = **P. niger**
congestus (Vahl) Hayek = **Mariscus congestus**
debilissimus C. B. Clarke = **Pycreus flavescens** subsp. **tanaensis**
decaryi Cherm. = **P. pelophilus**
decumbens T. Koyama = **P. mundii** var. **mundii**
densifolius (Kunth) Nees ex Cherm. = **P. mundii** var. **mundii**
densus (Link) C. B. Clarke = **P. lanceolatus**
divulsus (Ridl.) C. B. Clarke subsp. *africanus* S.S. Hooper = **P. africanus**
djalonis A. Chev. = **Cyperus pustulatus**
elliottianus Nees, incl. var. *humilis* Nees = **Pycreus lanceolatus**
esculentus (L.) Hayek = **Cyperus esculentus**
fallaciosus Cherm. = **Pycreus flavescens** subsp. **flavescens**
ferrugineus (Poir.) C. B. Clarke = **P. intactus**
ferrugineus sensu Cufod. 1970 = **P. polystachyos** var**. microdontus**
flavescens (L.) P. Beauv. ex Rchb. var. *abyssinicus* (Hochst. ex A. Rich.) Cufod. = **P. flavescens** subsp. **flavescens**
flavescens var. *castaneus* Lye = **P. flavescens** subsp. **microglumis** var. **castaneus**
flavescens subsp. *fallaciosus* (Cherm.) Lye = **P. flavescens** subsp. **flavescens**
flavescens subsp. *laevinux* Lye = **P. overlaetii**
flavescens subsp. *laevinux* sensu Lye p.p. (= ex Tanzania) = **P. flavescens** subsp. **flavescens**
globosus (All.) Rchb. var. *nilagiricus* sensu C. B. Clarke 1902 = **P. nuerensis**
globosus var. *nuerensis* (Boeckeler) Troupin = **P. nuerensis**
heterochrous Nelmes = **P. poikilostachys** (var.)
hyalinus (Vahl) Domin = **Queenslandiella hyalina**
intermedius (Rikli) C. B. Clarke = **Pycreus flavescens** subsp. **intermedius**
intermedius (Steud. 1842, nom. illeg.) C. B. Clarke = **P. flavescens** subsp. **intermedius**
katangensis Cherm. 1833, nom. nud. = **P. scaettae**
lanceolatus C. B. Clarke and sensu Rendle 1899 = **P. flavescens** subsp. **intermedius**
"*lanceolatus* (Poir.) C. B. Clarke subsp. *ugandensis* Lye" (= *P. mortonii* S. S. Hooper) = **P. unioloides**
lanceus (Thunb.) Turrill, incl. var. *humilis* Kunth and var. *melanopus* (Boeckeler) Troupin = **P. nitidus**
micans (Kunth) Karthik. = **P. intactus**
minimus C. B. Clarke = **P. hildebrandtii**
monocephalus C. B. Clarke, incl. var. *longifolius* ! (not *longiflorus*) Cherm. = **P. fluminalis**
mortonii sensu Haines & Lye 1983: figs. 565–566 = **P. unioloides**
mundii Nees var. *gracilis* Cherm. = **P. mundii** var. **mundii**
niger (Ruiz & Pav.) Cufod. subsp. *elegantulus* (Steud.) Lye = **P. elegantulus**
nigrescens C. B. Clarke = **P. nigricans**
nigricans (Steud.) C. B. Clarke var. *firmior* (Kük.) Cherm. = **P. nigricans**
nitens (Retz.) Nees = **R. pumilus**
nyasensis C. B. Clarke = **P. nigricans**
odoratus Urb. 1900 = **P. polystachyos** var**. polystachyos**
patens (Vahl) Cherm. = **P. pumilus**
polystachyos (Rottb.) P. Beauv. subsp. *holosericeus* (Link) T. Koyama, and var. *laxiflorus* (Benth.) C. B. Clarke = **P. polystachyos** var. **microdontus**
propinquus Nees = **P. lanceolatus**
pumilus (L.) Nees var. *substerilis* E. G. Camus = **Queenslandiella hyalina**
pumilus sensu C. B. Clarke 1901 = **Queenslandiella hyalina**
pygmaeus (Rottb.) Nees = **Cyperus michelianus** subsp. **pygmaeus**
rehmannianus C. B. Clarke = **Pycreus flavescens** subsp. **microglumis** var. **castaneus**
rehmannianus var. *rehmannianus* (C. B. Clarke) Govaerts = **P. flavescens** subsp. **microglumis** var. **castaneus**
sanguinolentus (Vahl) Nees var. *uniceps* C. B. Clarke = **P. mundii** var. **uniceps**
segmentatus C. B Clarke = **P. macranthus**
setaceus C. B. Clarke = **P. capillifolius**
smithianus sensu C. B. Clarke, non C. B. Clarke s. str. = **P. fluminalis**
squarrosus (L.) Nees = **Mariscus squarrosus**
sulcinux sensu Fl. Trop. Afr. 8 : 298, 1902, non (C. B. Clarke) C. B. Clarke s. str. = **Pycreus pelophilus**
tremulus (Poir.) C. B. Clarke = **P. macrostachyos**
umbrosus Nees = **P. nitidus**
vanderystii Cherm. = **P. scaettae**
vavavatensis Cherm., incl. var. *simulans* (Cherm.) Cherm. = **P. nigricans**
vicinus Cherm. = **P. flavescens** subsp. **intermedius**
zonatissimus Cherm. = **P. zonatus**

QUEENSLANDIELLA / *1*

Queenslandiella Domin

syn.: *Mariscopsis* Cherm.; *Cyperus* subgen. *Queenslandiella* (Domin) Govindara; *Cyperus* sect. *Queenslandiella* (Domin) Kern

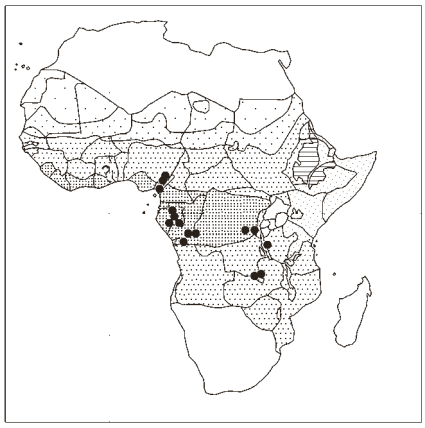
Monotypic genus extending from coastal E Africa over Madagascar – tropical Asia to NE Australia. Relationship with *Kyllinga* as well as *Pycreus*.

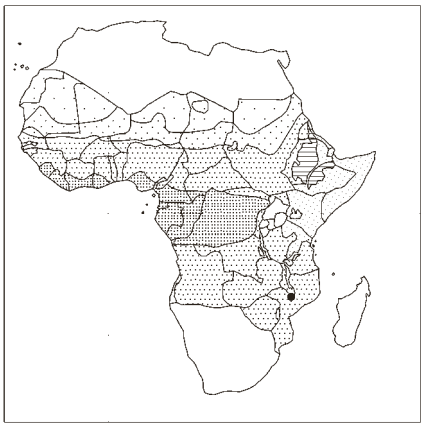
Queenslandiella hyalina (Vahl) Ballard; Thulin, Fl. Somalia 4: 143, 1995 (under *Cyperus*); Goetghebeur in K. Kubitzki, Families & genera vascul. pl. 4: 172, 1998; Simpson & Inglis in Kew Bull. 56: 331, 2001; Huygh & al. in Taxon 59: 1888, 2010; Uberti & al. in Bot. Rev. 82: 244, 2016. – Icon.: Hook. Ic. Pl. 33: pl. 3208, 1933; Kern in Fl. Males. 7: fig. 68, 1974; Haines & Lye, Sedges & rushes E. Afr.: 292–293, 1983 (under *Cyperus*); Lidia 3: 50, 1993; Prasad & Singh, Sedges Karnataka (India): 286, 2002; Fl. Trop. E. Afr., Cyper.: 309, 2010; Ind. J. Forestry 36: 278, 2013; Browning & Goetghebeur, Sedge genera Africa & Madag.: 70, 2017.

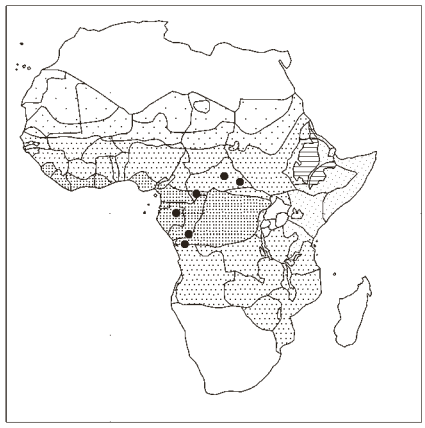
bas.: ***Cyperus hyalinus*** Vahl

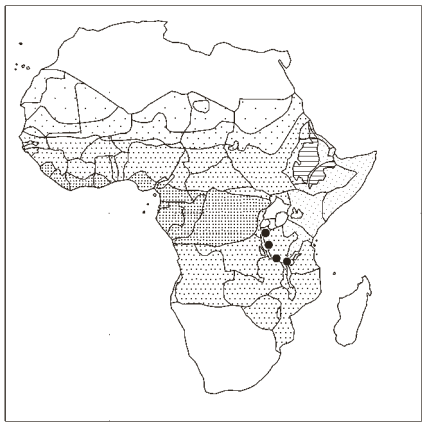
syn.: *Cyp. hyalinus* var. *substerilis* (E. G. Camus) Kük.; *Cyp. suaveolens* Boivin ex Cherm. 1919, nom. inval.; *Mariscopsis suaveolens* Cherm. 1919; *M. hyalinus* (Vahl) Ballard; *Pycreus hyalinus* (Vahl) Domin; *P. pumilus* (L.) Nees var. *substerilis* E. G. Camus; *Kyllinga hyalina* (Vahl) T. Koyama; *Queenslandiella mira* Domin; *Pycreus pumilus* sensu C. B. Clarke in Fl. Trop. Afr. 8: 296, 1901.

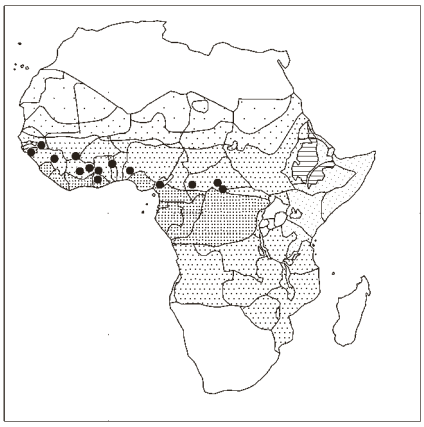
Tufted annual herb; culms 5–30 cm long; leaves basal, flat, 5–15 cm long, 2–6 mm wide, glabrous but margins and midrib scabrid; sheath grey to reddish-brown; inflorescence a simple

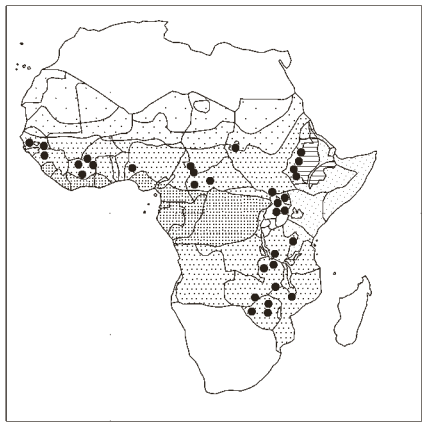

Pycreus scaettae

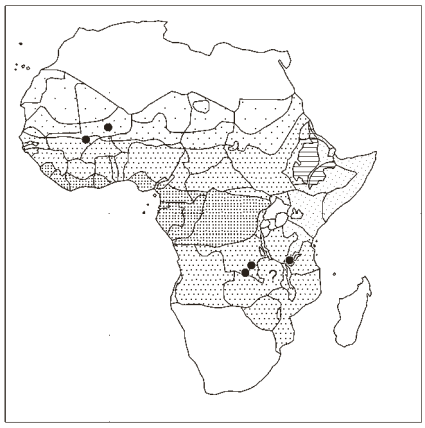

Pycreus spissiflorus

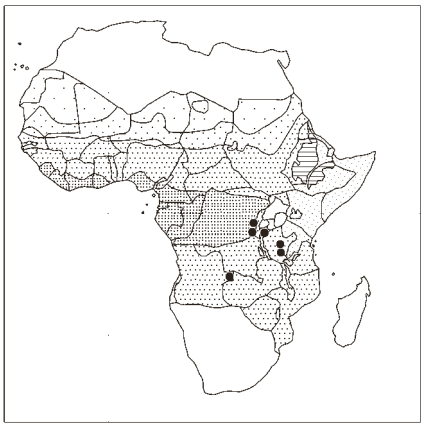

Pycreus subtrigonus

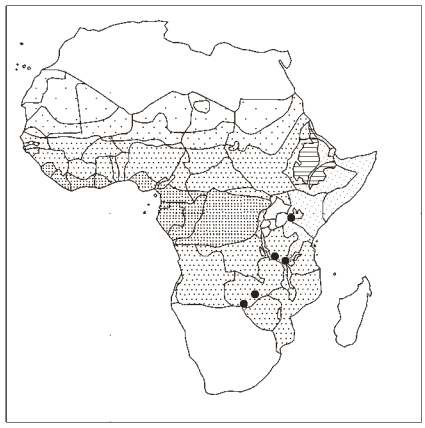

Pycreus sumbawangensis

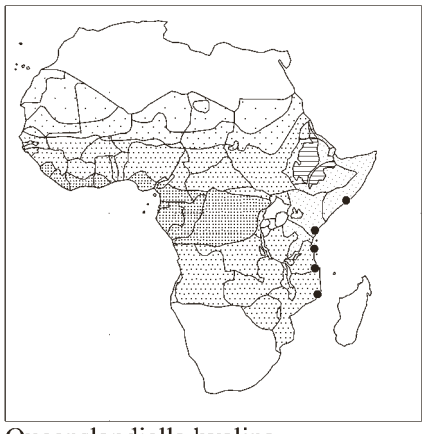

Pycreus testui

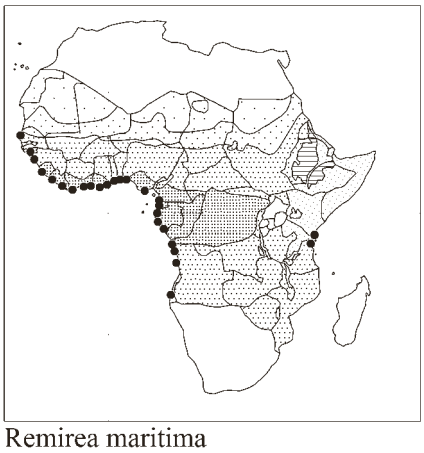

Pycreus unioloides

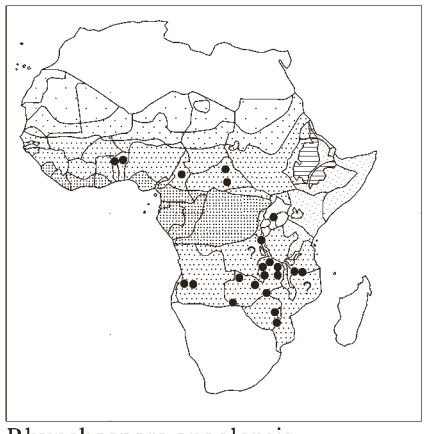

Pycreus waillyi


Pycreus xantholepis


Pycreus zonatus


Queenslandiella hyalina


Remirea maritima


Rhynchospora angolensis

umbel or with 1-few sessile spikes and 1−8 stalked spikes; rays to 12 cm long; spikes 0,8−1,8 × 0,7−1,7 cm with 8−15 ovate spikelets 4−9 × 1,5−2,5 mm, falling entire; rachilla broadly winged. – Whole plant with pungent odour of curry or fenugreek (*Trigonella foenum-graecum*), long persistent in dried specimens.

Grassland, bushland on coral rag; dunes; also weed in coastal lawns, sisal plantations, under coconut palms, rough turf in gardens; 0−30 m alt.

Madagascar, Mauritius, Maldives, India, Sri Lanka E-wards to Malesia, N Australia (N Queensland).

(RAYNALIA)

Raynalia lipocarphioides (Kük.) Soják
= **Alinula lipocarphioides**

(REIGERA)

Reigera maritima (L.) Opiz = **Bolboschoenus maritimus**
maritima var. *tuberosa* (Desf.) Opiz = **B. glaucus**

REMIREA / *1*

Monotypic genus widely distributed throughout the tropics. "The spikelet structure was longtime misunderstood", clarified by Kern (Acta. Bot. Neerl. 7: 795−798, 1958).

Remirea maritima Aubl., incl. var. *pedunculata* (R. Br.) Benth.; Goetghebeur in Kubitzki, Families & genera vascul. pl. 4: 170−171, 1998; Simpson & Inglis in Kew Bull. 56: 331−332, 2001; Lisowski, Fl. Rép. Guinée 1: 409, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 226, 2011; Mesterházy in Lidia 7/5: 117, 2012. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 297, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 8, 1974; Boissiera 24a: 199, 201−202, 1975; Haines & Lye, Sedges & rushes E. Afr.: 294, 1983; Berhaut, Fl. ill. Sénégal 9: 300, 1988; Lidia 3: 55, 1992; Prasad & Singh, Sedges Karnataka (India): 289, 2002; Akoègninou & al., Fl. analyt. Bénin: 112, 2006; Fl. Trop. E. Afr., Cyper.: 261, 2010; Fl. Gabon 44, Cyper.: 183, 2012; Fl. China, Ill. 23: 328, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 397, 2014; Browning & Goetghebeur, Sedge genera Africa & Madag.: 71, 2017.

syn.: ***Cyperus pedunculatus*** (R. Br.) J. Kern; *Duval-jouvea maritima* (Aubl.) Palla; *Remirea pedunculata* R. Br.; *R. rigidissima* Steud.; *R. distichophylla* Boeckeler; *Mariscus pedunculatus* (R. Br.) T. Koyama; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with long creeping rhizome 1−3 mm ∅, internodes 3−6 cm long with brown membranous acute sheaths; culms with many nodes, hidden in leaf sheaths, trigonous, 3−12 cm long, 1−2 mm ∅; leaves crowded, thick, 4−5 mm wide basally, canaliculate, scabrid on upper margins, apex stiff, sharp; inflorescence capitate of several congested cymes (spikes), subsessile among the leaves; spikes ovoid-ellipsoid, 8−15 × 7−10 mm; spikelets sessile, crowded, 4−5 × 1,5−2 mm, 1-flowered, glumes distichous, part of spikelet deciduous as a unit; nutlets ± ellipsoid, trigonous, beaked, clasped by much enlarged corky uppermost rachilla internode.

Dunes and (coarse) sandy sea shores just above the high tide level; See Adam in Bull. Soc. Bot. France 117: 421, 423, 425, 1979, for locality of Cap Palmas, Liberia; beside estuaries or lagoons; "grows in dense masses … and when not in flower resembles in habit some Portuguese species of *Statice* (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 132, 1899); 0−300 m alt.

Bioko/Fernando Poo, Annobón; Madagascar, Seychelles; India, Sri Lanka, E-wards to China, Japan, Indonesia, New Guinea, N Australia; Pacific islands; SE N. America, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 282, 2012). – Pantropical. – Anciently collected in Senegal (Camberene near Dakar); extinct ?

The achene remains enclasped in a buoyant corky rachilla and is thereby dispersed by moving water (Naczi & Ford, Sedges: uses…: 25, 2008).

RHYNCHOSPORA / *12*

Rhynchospora Vahl 1805 (who separated it from *Schoenus* L.), nom. cons.

syn.: *Haplostylis* Nees 1834 (many synonyms given in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew).

The third largest genus of *Cyperaceae* with 270 (−354 −386) species. Cosmopolitan, but most divers in the Americas, primarily in warm temperate zones (Viji & al. in Kew Bull. 69/3: § 9519: 1, 2014). The highest figures (354 species) are given by Silva da Silva Filho & al. in Phytotaxa 149: 1, 2013 and (386 species) by Thomas & Silva da Silva Filho (in Brittonia70: 60, 2018). Raynal (Adansonia, Sér. 2, 7: 326, 1967) even suggested an ancient introduction of *Rynchospora* from America to W. Africa.

Some species are entomophilous.

"Generalization of the morphology of *Rhynchospora* … is difficult due to the variability of this large genus" [McMillan, P., Rhynchospora (Cyperaceae) of South Carolina and the Eastern United States: 1, 2007]. McMillan shows (in pictures) the general features of the gross morphology, inflorescence outline, spikelet characteristics, and achene morphology (p. 2−7).

LUCERO, L. E. & A. C. VEGETTI (2012). Inflorescence structure in Rynchospora Vahl (Cyperaceae). *Flora* 207: 47−56

LUCERO, L. E. & al. (2014). Evolution and development of the spikelet and flower of Rhynchospora (Cyperaceae). *Int. J. Plant Sci*. 175: 186−201.

REUTEMANN, A. & al. (2012). Structure of the Cyperaceae inflorescence. *Bot. Rev*. 78: 184−204 [p. 198].

THOMAS, W. W. (2009). A preliminary molecular phylogeny of the Rhynchosporeae (Cyperaceae). *Bot. Rev*. 75: 22−29.

Rhynchospora angolensis Turrill; Akoègninou & al., Fl. analyt. Bénin: 113, 2006; Fl. Trop. E. Afr., Cyper.: 360−361, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 318, 1983.

syn.: *R. africana* Cherm.; *R. glauca* Vahl subsp. *chinensis* (Boeckeler) C. B. Clarke var. *africana* (Cherm.) Kük. in Bot. Jahrb. Syst. 75: 149, 1950.

Perennial herb with short rhizome; culms many, crowded, rounded with longitudinal ridges, 24−90 cm long, 0,5−10 mm ∅, glabrous, bases covered with scales and old leaf bases split by the new shoots and some disintegrating into fibres; leaf sheath brown, 2,5−7,5 cm long; blade linear, stiff, erect, flat or triangular, 22−34 cm × 0,6−1,8 mm, glabrous, margins and apex sometimes scabrid, apex acuminate; inflorescence a slender panicle 13−28 cm long, with main branches protruding from the upper leaf sheaths and ending in a few usually stalked and solitary spikelets; leaves subtending the primary branches with sheaths 1,5−3,2 cm long, blade 1,5−5 cm × 0,6−1 mm; spikelets ovoid, 0,5−1,2 cm × 1,8−5 mm.

Swampy and boggy grassland; open swamp; spongy bogs with ± perennial seepage; 450−1160 m alt.

Madagascar.

Near *R. rugosa* but in *R. angolensis* culms rounded, glabrous; spikelets larger, 0,5−1,2 cm × 1,8−5 mm (not 4−5 × 1−2 mm); perianth bristles longer, 3−3,5 mm long (not 0,6−1,5 mm).

R. brevirostris Griseb., incl. var. *clarkei* (Rose) Kük. and var. *truncata* Kük.; Robinson in Kirkia 1: 39−40, 1961; Lisowski, Fl. Rép. Guinée 1: 409, 2009; Fl. Trop. E. Afr., Cyper.: 362, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011. – Icon.: Clarke, Ill. Cyper.: pl. LXXI/1−2, 1909 (as *R. barteri*); Haines & Lye, Sedges & rushes E. Afr.: 316−317, 1983; Berhaut, Fl. ill. Sénégal 9: 302, 1988.

syn.: *R. barteri* C. B. Clarke (1894, nom. nud.) 1902; *R. pringlei* C. B. Clarke 1908, nom. illeg., non Greenm. 1903.

Annual herb; culms trigonous, 6−11 cm long, c. 0,5 mm ∅, glabrous; leaf sheaths green to brown, 0,7−2,5 cm long; blades linear, 4,2−10,2 cm × 0,3−1,2 mm, glabrous, apex acuminate; inflorescence a slender panicle; leaves subtending the primary branches 2−3,3 cm × 0,3−0,7 mm; spikelets 2−4 per cluster, spaced out over the panicle, ± lanceolate, 3,8−4,3 × 1−1,4 mm; glumes larger towards apex of spikelet, awned.

Seasonally wet soil; often on laterite outcrops; rice-fields; damp sands or muddy places where there is little competition from strong-growing grasses; path sides; swampy meadows; not common and probably overlooked because hidden; ?-900−1200 m alt.

Botswana; C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 283, 2012).

R. candida (Nees) Boeckeler, incl. var. *pilosa* Schnee; Renier, Fl. Kwango 1: 68, 1948; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 227, 2002; Lisowski, Fl. Rép. Guinée 1: 409, 2009; Fl. Trop. E. Afr., Cyper.: 357, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 176, 2017). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 319−320, 1983; Fl. Gabon 44, Cyper.: 187, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 398, 2014.

bas.: *Psilocarya candida* Nees

syn.: *Pachymitra candida* (Nees) Nees ex Boeckeler; *Dichromena candida* (Nees) Ridl.; *Rynchospora adscendens* C. B. Clarke 1894, nom. illeg.

Perennial herb with creeping stolons; culms spaced, single (or 2−3 together), rounded, often trigonous at base of inflorescence, 20−82 cm long, 0,5−1,5 mm ∅, basally swollen and covered with stiff scales and old leaf sheaths, glabrous or sometimes with long transparent hairs, leaf sheath pale green to brown, 1,5−8 cm long; blade linear, flat or V-shaped, stiff, 7−35 cm × 2−5 mm, glabrous or margins and midrib scabrid, both surfaces with long transparent hairs; inflorescence simple to compound, corymbose with 2−6 primary branches 0,5−2,7 cm long; spikelets *solitary*, *white*, at end of primary or secondary branches, ovoid, 0,5−1,2 cm × 3−5,5 mm, with *to 50 glumes*.

Grassland liable to flooding; sands; sometimes locally common; seasonally wet to permanently flooded grasslands; seasonally flooded sedge meadow; lake shore; swamps; boggy places; rather damp wooded meadows with *Scabiosa columbaria* and various *Lamiaceae*; 0−1830 m alt.

Botswana; Madagascar; tropical S. America (Guianas: Strong, Taxon. & distrib. Rhynchospora in the Guianas, S. America: 61−62, 2006).

(**R. contracta** (Nees) J. Raynal, Adansonia, Sér. 2, 17: 277−278, 1978).

bas.: *Haloschoenus contractus* Nees

syn.: *Psilocarya teneriffae* Steud.; *Scleria cincta* Steud.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew; and J. Raynal, l.c.

A tropical American species (e. g. Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 284, 2012) recorded for Guinea Bissau by L. Catarino & al., Plantas vascul. briófitos Guiné-Bissau: 157, 2006. Probably adventitious in that country.

R. corymbosa (L.) Britton, incl. fa. *angustirostris* Manuel Barros, var. *angustirostris* (Manuel Barros) Guagl., var. *bonariensis* Manuel Barros ex Cabrera & Dawson, fa. *chacoensis* Maud Barros, var. *chacoensis* (M. Barros) Svenson, var. *florida* (Rudge) Kük., var. *minor* (Nees) Kük., var. *pandurangani* (Viji, Shaju & Geetha Kum) Sang. Dey & Prasanna, and var. *singularis* Kük., but ***? excl***. var. *grandispiculosa* Kük. (= *R. spectabilis*; cf. below under that name). – Renier, Fl. Kwango 1: 67, 1948 (as *R. aurea*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 639, 1985; Simpson & Inglis in Kew Bull. 56: 332, 2001; Prasad & Singh, Sedges Karnataka (India): 291−292, 2002; Akoègninou & al., Fl. analyt. Bénin: 113, 2006; Lisowski, Fl. Rép. Guinée 1: 409, 2009; Fl. Trop. E. Afr., Cyper.: 360, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 222, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 176, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115−116, 2011. – Icon.: Andrews, Flow. pl. Sudan 3: 365, 1956; Lowe & Stanfield, Fl. Nigeria: Sedges: 116, 1974; Haines & Lye, Sedges & rushes E. Afr.: 313, 1983; Berhaut, Fl. ill. Sénégal 9: 304, 1983; Cook, Aquat. pl. book, ed. 2: 81, 1990; Gordon-Gray, Cyper. Natal: 149, 1995 (nutlet); Fl. Eth. & Eritrea 6: 494, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 84, 2002; Cook, Aquat. & wetland pl. south. Afr.: 110, 2004; Dey & Prasanna in Rheedea 20: 6, 2010; Fl. Gabon 44, Cyper.: 187, 2012; Fl. China, Ill. 23: 339, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 399, 2014; Lucero & al. in Int. J. Pl. Sci. 175: 189−190, 193, 2014 (floral development); Flora of India 27: 37, 2015; Autrey & al., Fl. Mascareignes 202, Cypér.: 72, 2018.

bas.: *Scirpus corymbosus* L.

syn.: *Rhynchospora aurea* Vahl; *Chaetospora aurea* Kunth; *Schoenus corymbosus* (L.) Pers.; *Dichromena corymbosa* (L.) J. F. Macbr.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial leafy herb with thick creeping rhizome, and base covered with closely imbricate tough leaf bases, split by scaly buds emerging forming new culms; culms trigonous, grooved, 0,45−1,5−2,5 m long, 0,4−1,2 cm ∅, glabrous; leaves many, densely crowded; sheath pale yellowish-green to brown, 5,5−15 cm long; blade tough, linear, 45−96 × 1−1,8 cm, apex acuminate, margins, midrib and apex scabrid; inflorescence of one terminal and several lateral corymbs; leaves subtending the primary branches 20−56 cm long, 0,8−1,6 cm wide; primary branches several, 2,5−11 cm long, ending in a corymb; spikelets in clusters at secondary branches, lanceolate, 0,7−1 cm × 0,7−2,5 mm.

Marshy depression in woodland; swamp in *Albizia zygia*, *Combretum* woodland; lake shores; riverbanks; shallow pools; swampy areas; inundated rice fields, not cultivated; sometimes in or near (deep) water in high forest; forest gallery; 0−2000 m alt.

Bioko/Fernando Poo; S. Africa, Namibia uncertain (Archer & Craven, Cyper. Namibia: 24−25, 2004); Madagascar, Mauritius,

Réunion, Indian Ocean islands; India, Sri Lanka, Pakistan, E-wards to China, Indonesia, New Guinea, Philippines, Australia; C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 284, 2012). – Widely distributed in the tropics and subtropics worldwide, "a common member of the tropical sedge marshes".

Gordon-Gray (o.c.) treats *R. spectabilis* Hochst. ex C. Krauss as a synonym of *R. corymbosa*.

The smut fungus *Testicularia africana* is known from W. Africa, Guinea and Sierra Leone, and also common in Cameroon (Piatek in Scripta Bot. Belg. 46: 354, 2010; Denchev & Denchev in Mycotaxon 130: 607−611, 2015, with figs.), and now found in Tanzania and Mozambique.

Confused with *Cladium mariscus*. Small specimens may be similar to *Rhynchospora triflora*.

R. eximia (Nees) Boeckeler, incl. var. *pleiantha* (Cherm.) Raymond, var. *multiflorens* Kük., and var. *schroederi* (K. Schum.) Kük.; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Fl. Trop. E. Afr., Cyper.: 263, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 55, 2012 (map by Schmidt & al. in Phytotaxa 304: 176, 2017). – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 116, 1974; Haines & Lye, Sedges & rushes E. Afr.: 316, 1983; Berhaut, Fl. ill. Sénégal 9: 305, 1988; Fl. Gabon 44, Cyper.: 188−189, 2012.

bas.: *Spermodon eximius* Nees

syn.: *Psilocarya eximia* (Nees) D. B. Ward; *Rhynchospora schroederi* K. Schum.; *R. testui* Cherm. var. *pleiantha* Cherm.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual herb; culms rounded to trigonous, 18−34 cm long, 0,7−1,2 cm ∅, with prominent ridges, glabrous; leaf sheath 1,5−7 cm long, brownish-green; blade linear, flat, 9−21 cm × 1,5−5 mm, apex acuminate, glabrous to scabrid; inflorescence a panicle with leaves subtending the primary branches like basal leaves; spikelets pedicellate, solitary or in clusters of 2−3 per branch, ovoid, 0,6−1 cm × 2,4−3,5 mm, with many glumes, many-flowered.

Open marshy area of well-grazed grassland; clayey bare humid sands; rice-fields derelict and inundated; humid hollows in savannas; brooks; wet places, from mangrove swamps to wet flushes on rocks; 0−750 m alt.

USA: Florida, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 285, 2012).

R. gracillima Thwaites 1864 (non C. Wright 1871) subsp. **subquadrata** (Cherm.) J. Raynal; Fl. Eth. & Eritrea 6: 493−494, 1997 (as *R. subquadrata*); Akoègninou & al., Fl. analyt. Bénin: 114, 2006; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Fl. Trop. E. Afr., Cyper.: 363−364, 2010; Mesterházy in Lidia 7/5: 117, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 176, 2017). – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 116, 1974; Haines & Lye, Sedges & rushes E. Afr.: 315−316, 1983; Berhaut, Fl. ill. Sénégal 9: 305, 1988; Gordon-Gray, Cyper. Natal: 149, 1995 (nutlet); Fl. Gabon 44, Cyper.: 188−189, 2012; Autrey & al., Fl. Mascareignes 202, Cypér.: 72, 2018.

bas.: *R. subquadrata* Cherm.

syn.: *R. testui* Cherm., excl. var. *pleiantha* Cherm.; "*R. gracillima* Thwaites var. *subquadrata* (Cherm.) R." in Berhaut, Fl. Sénégal, ed. 2: 459, 1967, comb. inval.

Annual or perennial herb; culms crowded on short rhizome, old dead culms frequently persistent, to 45 cm tall; culms rounded to trigonous, 14−21 cm long, 0,2−1 mm ∅, with slight ridges, glabrous, basally with very few scales; leaf sheath greenish-brown, 2−5 cm long; blade linear, 13−26 cm × 0,3−1,2 mm, apex acuminate, minutely scabrid; inflorescene a panicle spread along culm; leaves subtending the primary branches with sheath 1,5−2 cm long, blade 7−12 cm × 0,3−0,8 mm; primary branches 2,5−8 cm long; spikelets in clusters at end of primary branches, pedicellate, 1−5 per cluster, ovoid, 0,5−1 cm × 0,8−2,2 mm.

Seasonally wet grasslands; bogs; swamp edges; depressions; wet sandy surface; boggy meadows; rocky outcrops; survives recurrent burning; 0−1800 m alt. – "Can stand competition with dense growth of other vegetation, and often occurs in bush grassland where it grows very lanky and is hard to see" (Robinson in Kirkia 1: 40−41, 1961).

S. Africa, Swaziland; Madagascar.

Subsp. **gracillima** occurs in Asia, from India, Assam, Sri Lanka E-wards to China, New Guinea, Australia (Queensland). Distinguished from subsp. **subquadrata** on a difference in the number of transverse corrugations on the face of the nutlet (6−8 in the first, 10−12 in the latter).

R. holoschoenoides (L. Rich.) Herter; Robinson in Kirkia 1: 34−35, 1961 (as *R. mauritii*); Podlech in Mitt. Bot. Staatssamml. München 4: 118−120, 1961 (as *R. arechavaletae*); Darwiniana 23: 499, 1981; Clarke & Mannheimer, Cyper. Namibia: 88, 1999 (map); Archer & Craven, Cyperaceae Namibia 25, 2004; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Mesterházy in Lidia 7/5: 117−118, 2012. – Icon.: Amer. J. Bot. 39: 388, 1952; Fl. W. Trop. Afr., ed. 2, 3/2: 330, 1972; Darwiniana 23: 503−504, 1981; Haines & Lye, Sedges & rushes E. Afr.: 314, 1983; Berhaut, Fl. ill. Sénégal 9: 307, 1988; Gordon-Gray, Cyper. Natal: 152, 1995 (nutlet); Akoègninou & al., Fl. analyt. Bénin: 114, 2006; Fl. Trop. E. Afr., Cyper.: 359, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 760, 2010; Fl. Gabon 44, Cyper.: 190−191, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 400, 2014; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 72, 2017; Autrey & al., Fl. Mascareignes 202, Cypér.: 72, 2018.

bas.: *Schoenus holoschoenoides* L. Rich. 1792.

syn.: *S. cyperoides* Sw. 1788, nom. illeg., non Retz. 1786; *Rynchospora cyperoides* Mart.; *R. mauritii* Steud.; *R. urvillei* Steud.; *R. arechavaletae* Boeckeler, incl. var. *ostenii* (Kük.) Kük.; *R. dolichostyla* K. Schum.; *R. ostenii* Kük.; *R. cyperoides* var. *longifructus* Kük.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with base rounded, covered by fibres formed from older leaf-bases, set at end of a short curving scaly stolon, and emitting new thick stolons; culms solitary or tufted, trigonous to triquetrous, 0,3−1,4 m long, 0,5−3,7 mm ∅, glabrous; leaf sheaths pale green to brownish, 2−12 cm long; blade linear, stiff and ascending, curved at apex, 26−63 cm × 2,5−7,4 mm, apex acuminate, glabrous or sometimes scabrid on margins, midrib and apex; inflorescence *capitate or simple* with primary branches 0−5, 1−15,5 cm long; spikelets in dense *globose clusters* at end of primary branches, at least one cluster sessile; spikelets lanceolate, 3−7 × 1,2−2 mm with ± 5 glumes per spikelet.

Permanent swamps and ponds; rice fields uncultivated; sandy soils; generally near surface water which may be brackish; seasonally humid or inundated meadows; temporary pools; in lagoon 20 cm deep; only on sand; 0−1800 m alt.

Namibia, S. Africa, Botswana; Madagascar, Mauritius, Réunion; Mexico, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 287, 2012).

Resembling *R. rubra* subsp. *africana*, but *R. holoschoenoides* has always at least some spikes on primary branches, whereas *R. rubra* has always a capitate inflorescence without any branched spikes.

Confused with *Actinoschoenus thouarsii*, a plant of inselbergs.

R. perrieri Cherm.; Robinson in Kirkia 1: 40, 1961; Raynal in Adansonia, N. S. 7: 322−323, 1967; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 115, 2010; Boupoya-Mapikou in Scripta Bot. Belg. 46: 95, 2010 (Gabon); Fl. Trop. E. Afr., Cyper.: 362−363, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Mesterházy in Lidia 7/5: 117, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 319, 1983; Adam, Fl. descr. Mts Nimba 6: 2143, 1983; Berhaut, Fl. ill. Sénégal 9: 308, 1988; Gordon-Gray, Cyper. Natal: 152, 1995 (nutlet); Fl. Gabon 44, Cyper.: 190, 2012.

syn.: *R. deightonii* Hutch. in F.W.T.A., ed. 1, 2/2: 468, 1936, descr. angl., excl. specim. Chevalier 22316 (= *R. gracillima*); *R. setacea* (P. J. Bergius) Boeckeler var. *africana* R. Gross & Dinklage, nom. nud.; *R. setacea* var. *semisetacea* Kük., syn. emend.

Annual or sometimes short-lived perennial herb; culms trigonous, 2−50(−70) cm long, 0,3−1 mm ∅, sometimes erect, sometimes spreading, always inconspicuous, glabrous; leaf sheath brownish-green, 1,8−4 cm long; blade linear, 7−38 cm × 0,6−1,8 mm, apex acuminate, glabrous to scabrid; inflorescence a slender panicle, with 3−4 clusters of spikelets; these 1−10 per cluster, *sessile*, ovoid, 3,5−5 × 0,7−1,5 mm, 1−2-flowered; nutlet *strongly transversely rugose* with decurrent style-base.

Swamp areas; roadside ditches; alongside streams; damp places; rice fields; sandy-pebbly river bed; thalweg on ferrugineous carapace; muddy places in querry; on reef in river; edge of swamp; wet sandy soil; "a pioneer, spreading through moist areas that have become open due to some previous disturbance"; 0−1770 m alt.

S. Africa, Botswana, Swaziland; Madagascar.

R. rubra (Lour.) Makino; Akoègninou & al., Fl. analyt. Bénin: 114, 2006; Fl. Trop. E. Afr., Cyper.: 357−358, 2010. – Icon.: Raynal in Adansonia, N. S. 7: 324, 1967 (subsp. *senegalensis*); Lowe & Stanfield, Fl. Nigeria: Sedges:116, 1974; Haines & Lye, Sedges & rushes E. Afr.: 315, 1983 (subsp. *africana*); Berhaut, Fl. ill. Sénégal 9: 309−310, 1988; Gordon-Gray, Cyper. Natal: 152, 1995; Fl. Gabon 44, Cyper.: 193, 2010 (subsp. *africana*); Fl. China, Ill. 23: 339, 342, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 401, 2014 (subsp. *africana*); Fl. India 27: 30, 2015; Illustrated Cyperaceae of Korea: 361, 2016.

bas.: *Schoenus ruber* Lour.

Annual or sometimes perennial herb; culms solitary or tufted, 5−100 cm long, 0,5−2,5 mm ∅, erect, triquetrous, glabrous; leaves (nearly) basal, shorter than culms, 1−5 mm wide, apex acuminate, glabrous, sometimes scabrid on margins and apex; involucral bracts 2−8, the lowermost 2,5−7,5 cm long, densely ciliate at base; inflorescence capitate, a solitary head with a dense cluster of spikes; spikelets many per spike, 2−10 × 0,7−1 mm, compressed, 2−4-flowered.

Brackish or freshwater swamps; seasonally swampy grasslands; rice fields; temporarily very wet sands; brackish dune slacks; bare sands; 0−100 m alt. – Dominant species on wet sands: lowlands (Liberia).

Botswana, S. Africa; Madagascar (subsp. *africana*); subsp. *senegalensis* in Sénégal. – Tropical and sub-tropical Old World; subsp. *rubra* in Asia, from India, Sri Lanka E-wards to Vietnam, S. China, C Japan, Malesia, Australasia, N Australia, Pacific islands.

Comprises 2 subspp. in Africa: – subsp. **africana** J. Raynal [syn.: *Chaetospora madagascariensis* Steud.; *Rynchospora madagascariensis* (Steud.) Cherm.; *R. minor* Nelmes 1957, nom. illeg., non Nees 1842; *R. cyperoides* sensu Adam, J. Agric. Trop. Bot. Appl. 5: 651, 1958, p.p., non (Sw.) Britt.; *R. wallichiana* sensu C. B. Clarke in Fl. Trop. Afr. 8: 478−479, 1902, non (Nees) Kunth]; – subsp. **senegalensis** J. Raynal [syn.: *R. cyperoides* sensu Adam, l.c., p.p., quoad specim. Adam 11020], differs from subsp. *africana* by its larger (c. 0,7 × 0,2 mm) and very tuberculate-pilose nutlets; only in Senegal, Kaolack. However, both subspecies sometimes grow together. – Subsp. **rubra** occurs in trop. & subtrop. Asia E-wards to the NW Pacific (for synonyms See World Checklist of Cyperaceae, Roy. Bot. Gard., Kew).

R. rugosa (Vahl) Gale subsp. **brownii** (Roem. & Schult.) T. Koyama; Robinson in Kirkia 1: 36−37, 1961 (as *R. brownii* & *R. juncea*). EANHS Bull. 30/2: 19, 2000 (Kenya); Prasad & Singh, Sedges Karnataka (India): 292−293, 2002; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 78, 2006; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Fl. Trop. E. Afr., Cyper.: 361−362, 2010 (as *R. brownii*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Viji & al. in Kew Bull. 69/3: § 6913: 1−5, 2014 (in table). – Icon.: Clarke, Illustr. Cyper.: pl. 73/7, 1909 (as *R. glauca*); Fl. W. Trop. Afr., ed. 2, 3/2: 332, 1972; Haines & Lye, Sedges & rushes E. Afr.: 317, 1983 (as *R. brownii*); Troupin, Fl. Rwanda 4: 431, 1988 (idem); Gordon-Gray, Cyper. Natal: 149, 151, 1995 (idem); Fl. Gabon 44, Cyper.: 179, 183, 2012 (idem); Fl. China, Ill. 23: 339, 341, 2012; Flora of India fasc. 27: 44, 2015; Fl. Mascareignes 202, Cyper.: 72, 2018.

bas.: *Schoenus rugosus* Vahl 1798; *Rhynchospora brownii* Roem. & Schult.

syn.: *Rhynchospora laxa* R. Br. 1810, nom. illeg., non Vahl 1805; *R. juncea* Willd. ex Kunth; *R. glauca* Vahl var. *juncea* (Willd. ex Kunth !) Cherm., and var. *condensata* Kük.; *R. rugosa* var. *condensata* (Kük.) T. Koyama; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial tufted herb with short rhizome; culms *trigonous*, shallowly ridged, 30−100 cm long, 0,5−1,8 mm ∅, base covered with scales and old leaf bases; leaf sheath pale green to brown 1,5−10 cm long; blade linear, erect, stiff, triangular in section, 12−50 cm × 1−2 mm, flat or folded, apex acuminate; inflorescence a slender panicle 6−21 cm long, with main branches protruding from the upper leaf sheaths and ending in small corymb-like clusters; leaves subtending the primary branches with sheath 0,7−3,2 cm long; blade 3−12,5 cm long, 1−2 mm wide; spikelets 2−9 per cluster, each 4−5 × 1−2 mm, ovoid.

Grasslands; bogs, swamps; stream banks; swamp with *Ericaceae*. 0−2500 m alt.

S. Africa, Botswana, Lesotho, Swaziland, Namibia uncertain (Archer & Craven, Cyper. Namibia: 25, 2004); Madagascar, Mauritius, Réunion; widely distributed in tropical and subtropical regions of the world: S Asia from India, Sri Lanka E-wards to Indonesia, Philippines, New Guinea, Australia, Pacific islands; West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 290−291, 2012).

A highly polymorphic species: 4 subspecies are usually recognised: – subsp. **americana** (Guagl.) Govaerts, from SE Mexico to S. America; – subsp. **brownii** (Roem. & Schult.) T. Koyama; – subsp.

lavarum (Gaudich.) T. Koyama in the Hawaiian islands; – subsp. **rugosa** in tropical America from Mexico to S. America.

Near *R. angolensis* from which it differs by its trigonous culms, smaller spikelets (4−5 × 1−2 mm, not 5−12 × 1,8−5mm), shorter perianth bristles (0,6−1,5 mm long, not 3−3,5 mm) that are unequal in length (not equal).

(**R. spectabilis** Hochst. ex C. Krauss); Kükenthal in Bot. Jahrb. Syst. 74: 419, 1949.

syn.: *R. corymbosa* (L.) Britton var. *grandispiculosa* Kük. (l.c.)

Probably a variant of the polymorphic *R. corymbosa* but recognised by Kükenthal (l.c.), who gives the following description: perennial herb with a short rhizome; culms slender, 90 cm long, triangular with scabrid angles and leafy up to mid-length; leaves shorter than culm, 10 mm wide, without nodules; inflorescence paniculate of 2−4 distant corymbs; terminal corymb subsessile, much-branched (i.e. cymes contracted, head-like); spikelets lanceolate, 8−10 mm long, 4−5-flowered; nutlets obovate, 4 mm long.

Described from S. Africa, Natal (near Durban), in swamp; 90 m alt.

The inflorescence differs from more elongated forms growing further north. "Reduction is gradual and does not warrant infraspecific [non specific] recognition" (Gordon-Gray, Cyper. Natal: 150, 1995).

The geographical distribution in Africa (and S. America) needs further study. The synonym *R. corymbosa* var. *grandispiculosa* Kük. (Bot. Jahrb. Syst. 74: 417, 1949) is cited from Liberia, Cameroon, Congo-Brazzaville/Zaire (Stanley Pool), Sudan, Tanzania; as well as from S. America.

Not mapped by us.

R. tenerrima Nees & Spreng. subsp. **microcarpa** J. Raynal; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Mesterházy in Lidia 7/5: 117, 2012. – Icon.: Raynal in Adansonia, N. S. 7: 325, 1967 (nutlet); Berhaut, Fl. ill. Sénégal 9: 310, 1988.

Annual, tufted herb; culms filiform, 5−20 cm tall, triquetrous, glabrous; leaf sheath greenish; blade filiform, 3−10 cm long; inflorescence of 2−4 subsessile fascicles with 1−5 spikelets, the higher terminal, the others axillary, ranged on the stem; spikelets 2−3 mm long, straw yellow or light brown, 1-flowered.

Rice fields; temporarily very wet sands; marshy grassland; sometimes on wet rock-faces; 600 m alt. in Sierra Leone.

This subspecies occurs in W. Tropical Africa. – Subsp. **tenerrima** occurs in C. & tropical S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 292, 2012).

R. triflora Vahl; Kükenthal in Bot. Jahrb. Syst. 74: 426−427, 1949; Robinson in Kirkia 1: 35, 1961; Haines & Lye, Sedges & rushes E. Afr.: 314, 1983; Akoègninou & al., Fl. analyt. Bénin: 114, 2006; Strong in Contrib. Smithson. Inst. 53: 167−169, 2006; Lisowski, Fl. Rép. Guinée 1: 410, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 176, 2017). – Icon.: Aké Assi, Contribution à l'étude floristique de la Côte d'Ivoire et des territoires limitrophes II – Monocotylédones et Pteridophytes: pl. 27 facing p. 258 (as *Rinchospora triflora*), Encyclopédie Biologique, Paris; Berhaut, Fl. ill. Sénégal 9: 311, 1988; Fl. Gabon 44, Cyper.: 191, 2012 (nutlet).

syn.: *Scirpus triflorus* (Vahl) Poir.; *Schoenus triflorus* (Vahl) Poir.; *Dichromena triflora* (Vahl) J. F. Macbr.; *Rhynchospora ceylanica* (Nees) Kunth; *R. triflora* var. *papuana* Kük.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb; rhizome stout, 3−6 mm ∅, horizontally creeping, culms spaced close together along rhizome, these erect, triquetrous, glabrous, 0,6−1,8 m tall, 2−5 mm ∅; leaves 5−8, basal and cauline; sheaths to 25 cm long on basal leaves, spongy-thickened; blades linear, 50−100 cm long, 2−7(−13) mm wide, shortly ciliate on margins; inflorescence rather loose and spreading, corymbose, 17−26 cm long, 8−15 cm wide, of 1 terminal and 1−2 lateral corymbose partial panicles, each subtended by a single leaf-like bract, axillary panicles on peduncles 0−20 cm long, bearing clusters of 1−4 brown spikelets, these elliptic-lanceolate, 0,6−1 cm × 1−3 mm, 1−4-flowered, *apex acuminate*.

Swamps; temporarily wet sands; swampy grassy places; flooded savannas; spongy bogs; up to 1100 m alt.

Old World tropics: Sri Lanka, Indo-China, Malesia, New Guinea, but not in India (Dey & Prasanna in Ind. J. Forestry 32: 685−686, 2009; Flora of India 27: 45−46, 2015); Mexico, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 292, 2012). – Pantropical.

Somewhat similar to *R. corymbosa*.

TAXON OF UNCERTAIN STATUS:

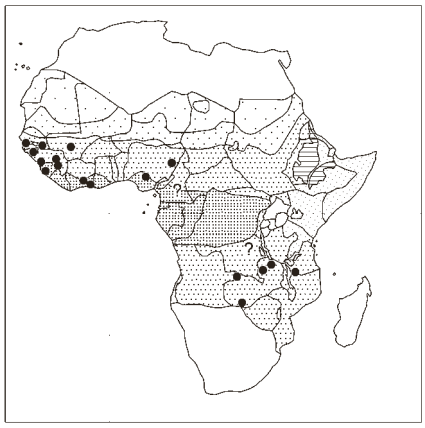
Rhynchospora trigyna Hochst., Flora (Regensburg) 24/1: Intelligenzblatt 1841/1/Nro. 2: 21, 1841 (Nr. 233), nomen.

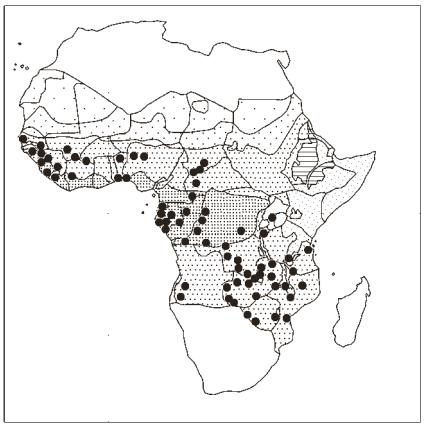
Name mentioned in a list of plants collected by Wilhelm Schimper in Abyssinia and available for sale on behalf of the "würtembergischen Reiseverein" (Esslingen).

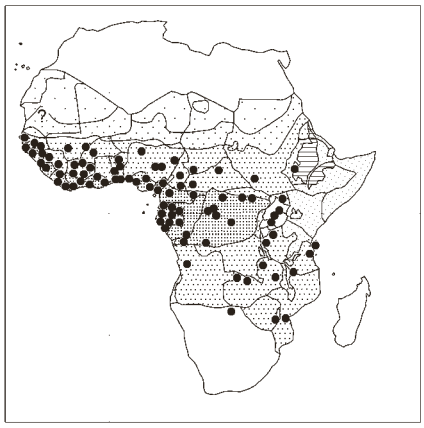
The identity of this plant is uncertain, perhaps not even a *Rhynchospora*. Three taxa occur in "Abyssinia", viz. *R. gracillima* subsp. *subquadrata* (stamens 2, style with 2 long branches), *R. corymbosa* (stamens 3, style unbranched or slightly divided at tip), and *R. rugosa* subsp. *brownii* (stamens 2−3, style with 2 long branches).

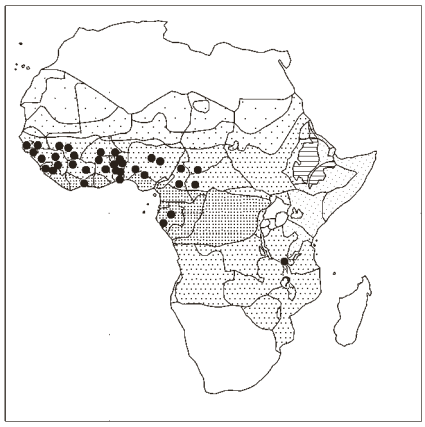
SYNONYMS:

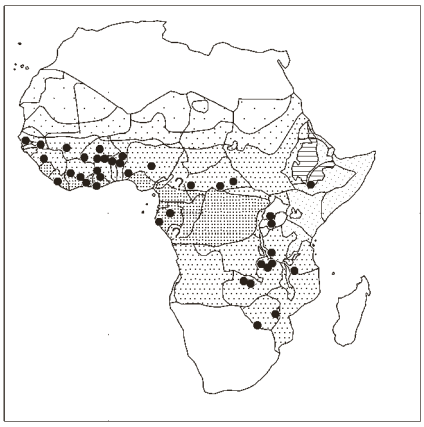
Rhynchospora adscendens C. B. Clarke
= **Rhynchospora candida**
africana Cherm. = **R. angolensis**
arechavaletae Boeckeler, incl. var. *ostenii* (Kük.) Kük., and fa. *pleiocephala* Osten = **R. holoschoenoides**
aurea Vahl = **R. corymbosa**
barteri C. B. Clarke 1894, 1902 = **R. brevirostris**
brownii Roem. & Schult. = **R. rugosa**
bulbocaulis Boeckeler 1879 = **Mariscus amomodorus**
ceylanica (Nees) Kunth = **Rhynchospora triflora**
corymbosa (L.) Britton var. *grandispiculosa* Kük. = **R. (spectabilis =) corymbosa**
cyperoides Mart. = **R. holoschoenoides**
cyperoides sensu Adam 1958 p.p. = **R. rubra** subsp. **africana**
cyperoides sensu Adam 1958 p.p. quoad specim. Adam 11020 = **R. rubra** subsp. **senegalensis**
cyperoides var. *longifructus* Kük. = **R. holoschoenoides**
deightonii Hutch. 1936, excl. specim. Chevalier 22316 = **R. perrieri**
deightonii Hutch. 1936, quoad. specim. Chevalier 22316 = **R. gracillima**
erinacea (Ridl.) C. B. Clarke = **Sphaerocyperus erinaceus**
glauca Vahl subsp. *chinensis* (Boeckeler) C. B. Clarke var. *africana* (Cherm.) Kük. = **Rhynchospora angolensis**
glauca var. *condensata* Kük. and var. *juncea* (Willd. ex Kunth) Cherm. = **R. rugosa** subsp. **brownii**

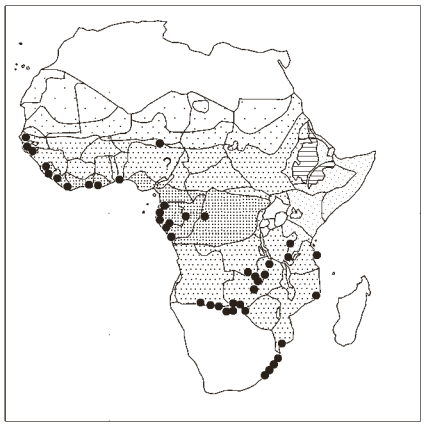

Rhynchospora brevirostris

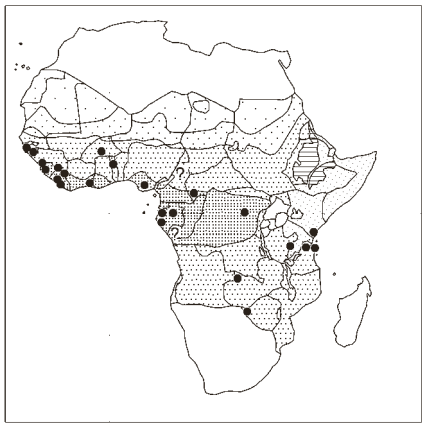

Rhynchospora candida

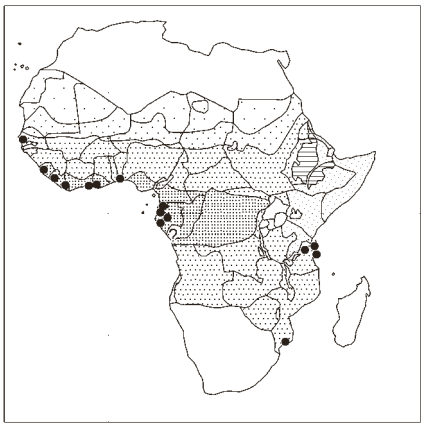

Rhynchospora corymbosa

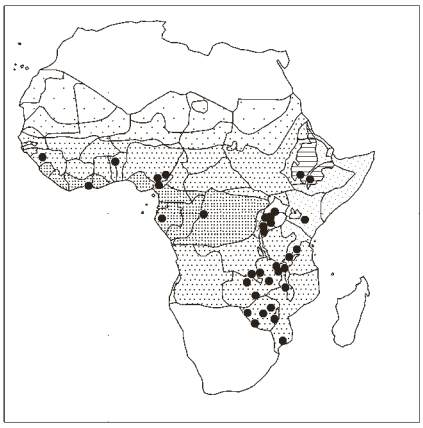

Rhynchospora eximia

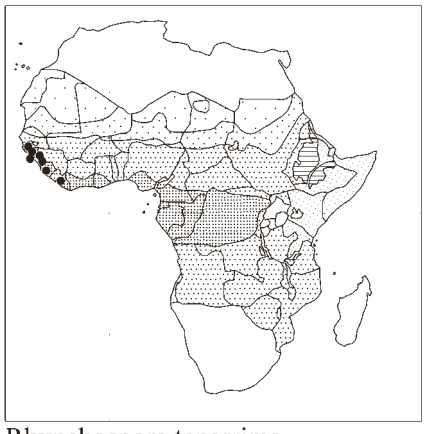

Rhynchospora gracillima subsp. subquadrata

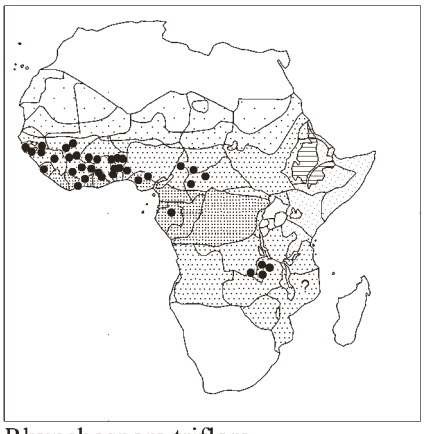

Rhynchospora holoschoenoides

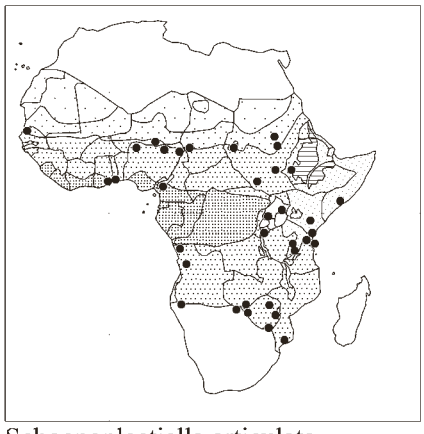

Rhynchospora perrieri


Rhynchospora rubra


Rhynchospora rugosa subsp. brownii


Rhynchospora tenerrima subsp. microcarpa


Rhynchospora triflora


Schoenoplectiella articulata

RHYNCHOSPORA

"*gracillima* Thwaites var. *subquadrata* (Cherm.) R." in Berhaut, Fl. Sénégal, ed. 2: 459 1967, comb. inval. = **R. gracillima** subsp. **subquadrata**
juncea Willd. ex Kunth = **R. rugosa** subsp. **brownii**
laxa R. Br. 1810 = **R. rugosa** subsp. **brownii**
madagascariensis (Steud.) Cherm. = **R. rugosa** subsp. **brownii**
mauritii Steud. = **R. holoschoenoides**
minor Nelmes 1957 = **R. rubra** subsp. **africana**
ochrocephala Boeckeler **– See Cyperus rhynchosporoides** at end of **Mariscus**
ostenii Kük. = **Rhynchospora holoschoenoides**
pringlei C. B. Clarke 1908 = **R. brevirostris**
rugosa var. *condensata* (Kük.) T. Koyama = **R. rugosa** subsp. **brownii**
ruppioides Benth. = **Websteria confervoides**
schroederi K. Schum. = **Rhynchospera eximia**
senegalensis Steud. = **Fuirena stricta** subsp. **stricta**
setacea (P. J. Bergius) Boeckeler var. *africana* R. Gross ex Dinklage, nom. nud., and var. *semisetacea* Kük., syn. emend. = **R. perrieri**
subquadrata Cherm. = **R. gracillima** subsp. **subquadrata**
testui Cherm. = **R. gracillima** subsp. **subquadrata**
testui var. *pleiantha* Cherm. = **R. eximia**
triflora Vahl var. *papuana* Kük. = **R. triflora**
urvillei Steud. = **R. holoschoenoides**
wallichiana sensu C. B. Clarke 1902, non (Nees) Kunth = **R. rubra** subsp. **africana**

(RIKLIELLA)

Rikliella J. Raynal; *Cyperus* sect. *Rikliella* (J. Raynal) Bauters According to Browning & Goetghebeur, Sedge genera of Africa and Madagascar: 58, 2017, "the genus *Rikliella* was united with *Lipocarpha*, but erroneously so, and is now considered a separate section within *Cyperus* s.l.". We do not follow this concept, and the three species present in our area are treated under **Lipocarpha** above (p. 235).

The *Rikliella* species are tufted annual herbs with an inflorescence unit composed of "a single spikelet with many spirally arranged glumes with long reflexed apices that give a spiny outline".

SYNONYMS:

Rikliella chinensis (Osbeck) M. R. Almeida = **Lipocarpha chinensis**
kernii (Raymond) J. Raynal = **L. kernii**
rehmannii (Ridl.) J. Raynal = **L. rehmannii**

(SCHOENODENDRON)

Schoenodendron buecheri Engl. = **Microdracoides squarrosa**

SCHOENOPLECTIELLA / *12*

The genus *Schoenoplectiella* was described by Lye (Lidia 6: 20−29, 2003) "in order to accommodate 26 species formerly placed in *Schoenoplectus*, most of them comparatively small, amphicarpous annuals from Africa and Madagascar. This new genus corresponded with *Schoenoplectus* section *Supini* (Cherm.) J. Raynal (1976) and three oddly placed additional species from section *Actaeogeton* (Rchb.) J. Raynal (1976). Subsequent molecular studies confirmed the generic status of *Schoenoplectiella* but the genus was expanded to include the entire section *Actaeogeton*

SCHOENOPLECTIELLA

… As such, it comprised 50 species worldwide in warm temperate to tropical regions, divided into two sections: section *Schoenoplectiella* and section *Actaeogeton* (Rchb.) Hayasaka (2012) … These findings subsequently have been corroborated by recent molecular studies although further morphological and molecular data are needed for section diagnosis (Shiels *et al*. 2014)" (Verloove & al. in Phytotaxa 283: 96, 2016). Verloove & al. continue: "section *Schoenoplectiella* is well represented in Africa and Madagascar and endemism is particularly notable there … Yet, some members of the genus are still poorly understood and in need of revision".

Schoenoplectiella species are thus predominantly African "reported to be annuals, exhibiting to varying degrees … amphicarpy, whereby different types of fruit are produced from florets which are dissimilar. A female floret of ovary and style is contained in a sheath at the first node, while bisexual florets are produced by pseudolateral inflorescences at a culm node above the female floret" (Browning & van der Burgt 2012: 421).

"The distinguishing characters of *Schoenoplectiella* [i.e. to distinguish it from *Schoenoplectus* s. str.] include the shape of the rhizomes, presence or absence of nodes on a culm, shape of glumes, presence or absence of perianth segments, surface sculpturing of nutlets, shape of epidermal cells of nutlets, and the habit whether annual or perennial" (Hayasaka 2012: 171).

Schoenoplectiella is, admittedly, a small genus found in wetlands and rivers throughout the world. "There are difficulties with the identification of species … because of its morphological simplicity … Another important source of taxonomic complexity is the frequent occurrence of interspecific hybridization" (Kim & al. 2012: 811−812).

In many (even recent) floras or flora lists *Schoenoplectiella* and *Schoenoplectus* are not distinguished, as separate entities, and species of both genera are then treated under *Schoenoplectus*. Sometimes also under *Scirpus*.

BROWNING, J. & M. VAN DER BURGT (2012). Observations on amphicarpy in Schoenoplectiella oxyjulos (Cyperaceae) from Sierra Leone. *Kew. Bull*. 67: 421−426.

GLON, H. E. & al. (2017). A five gene phylogenetic study of Fuireneae (Cyperaceae) with a revision of Isolepis humillima. *Syst. Bot*. 42: 26−36.

HAYASAKA, E. (2012). Delineation of Schoenoplectiella Lye (Cyperaceae), a genus newly segregated from Schoenoplectus (Rchb.) Palla. *J. Japan. Bot*. 87: 169−186.

JUNG, J. & H.-K. CHOI (2011). Taxonomic study of Korean Scirpus L. s.l. (Cyperaceae) II: Pattern of phenotypic evolution inferred from molecular phylogeny. *J. Plant Biol*. 54: 409−424.

KIM, C. & al. (2012). Molecular identification of Schoenoplectiella species (Cyperaceae) by use of microsatellite markers. *Plant Syst. Evol*. 298: 811−817.

LYE, K. A. (2003). Schoenoplectiella Lye, gen. nov. (Cyperaceae). *Lidia* 6: 20−29.

RAYNAL, J. (1976). Notes cypérologiques: 26. Le genre Schoenoplectus II. L'amphicarpie et la sect. Supini. *Adansonia, Sér. 2*, 16: 119−155.

SHIELS, D. R. & al. (2014). Monophyly and phylogeny of Schoenoplectus and Schoenoplectiella (Cyperaceae): Evidence from chloroplast and nuclear DNA sequences. *Syst. Bot*. 39: 132−144.

VERLOOVE, F. & al. (2016). Studies in Schoenoplectiella (Cyperaceae) in tropical West Africa. *Phytotaxa* 283: 96−100.

VERLOOVE, F. & al. (2018). A reappraisal of Schoenoplectus muricinux (Cyperaceae) including S. confusus and closely allied taxa in Africa. *Phytotaxa* 344: 1−12.

WADOOD KHAN, M. A. & al. (2006). Scirpus articulatus (s.l.) – A complex in Cyperaceae. *J. Econ. Taxon. Bot*. 30: 438−448 [key to *Schoenoplectiella articulata*, *S. praelongata*, *S. roylei*, *S. senegalensis*/*S. jacobii*].

XANTHOS, M. & J. BROWNING (2015). Taxonomic re-evaluation of Schoenoplectiella lateriflora subsp. laevinux (Cyperaceae) and a new record for Schoenoplectiella erecta subsp. erecta. *Kew Bull*. 70/3: § 36: 1−5.

Schoenoplectiella articulata (L.) Lye – The references cited by us here figure under *Schoenoplectus*, *Schoenoplectiella*, or *Scirpus* in floras or flora lists. – Raynal in Adansonia, N. S. 16: 146, 148, 1976; Archer & Craven, Cyper. Namibia 95, 82 (map), 1999; Simpson & Inglis in Kew Bull. 56: 333−334, 2001; Prasad & Singh, Sedges Karnataka (India): 300−301, 2002; Cafferty & Jarvis in Taxon 53: 180, 2004 (typification); Fl. Trop. E. Afr., Cyper.: 30, 2010; Hayasaka (2012): 181; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Mitt. Bot. Staatssamml. München 10: 536, 1971; Lowe & Stanfield, Fl. Nigeria: Sedges: 8, 1974 (under *Scirpus*); Haines & Lye, Sedges & rushes E. Afr.: 58, 1983; Berhaut, Fl. ill. Sénégal 9: 315, 1988; Thulin, Fl. Somalia 4: 105, 1995; Gordon-Gray, Cyper. Natal: 155, 1995 (nutlet); Fl. Eth. & Eritrea 6: 400−401, 1997; Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 86, 2002 (under *Scirpus*); Lye in Lidia 6: 21, 2003; Cook, Aquat. & wetland pl. south. Africa: 111, 2004; J. Econ. Taxon. Bot. 30: 442−443, 2006; Fl. China, Ill. 23: 247−248, 2012.

bas.: *Scirpus articulatus* L.

syn.: *Scirpus articulatus* var. *major* Boeckeler; *Schoenoplectus articulatus* (L.) Palla; *Sch. fistulosus* (Forssk.) Soják; *Isolepis articulata* (L.) Nees; *I. prolongata* Nees; *I. fistulosa* (Forssk.) Delile; *Scirpus fistulosus* Forssk.; *Scirpus rehmannianus* Boeckeler ex C. B. Clarke 1894, nom. nud.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual or short-lived perennial herb; culms 3−10, tufted, 5−80 cm long (excluding inflorescence bract up to 120 cm long when including this bract), 1−8 mm ∅, terete, hollow or filled with pith, chambered, smooth and with shallow ridges; leaves absent; sheaths pink (basal ones) to grey, usually much wider than culm, ending in a broad lobe; blade absent; inflorescence a dense head of up to 25 spikelets, lateral (overtopped by bract); spikelets red-brown and green, 0,6−1,8 mm long, 0,4−1 cm wide; flowers may also be present at base of the plant, in the axils of the sheaths.

Pool edges; waterholes; sides of watercourses and the sea; on mud or in up to 30 cm deep standing water (within grassland, wooded grassland, *Acacia* bushland); clayey hollows periodically flooded; rice fields, irrigation channel; shallow silty depressions; seasonally flooded pools in *Combretum*, *Terminalia* woodland; often with *Eleocharis decoriglumis* in southern Chad; 0−1200 m alt.

Very variable species in size of vegetative parts. The size and position of the inflorescence usually depends on water depth. In dried up marshy areas short plants with thin stems are found with the inflorescence very near the base. Plants growing in shallow waters are much larger with broad stems and the inflorescence is found just above the water level (Prasad & Singh, l.c.)

Namibia, S. Africa, Botswana, Swaziland; ? Egypt; Madagascar, Mauritius; S. Asia from India, Sri Lanka E-wards through Indo-China, SE China, to Indonesia, New Guinea, Philippines, N Australia. – Tropical & subtropical Old World.

Close to *S. senegalensis* but differs from the latter by its larger, smooth nutlets, and concave, more acuminate glumes. "Seems to grade into slender examples [of *S. senegalensis*] in which glumes are golden to bronze-brown, with achene surfaces transversely ridged, but margin smooth… These 'intermediates', if this is what they are, have sometimes been named *Scirpus praelongatus* Poir., but the status of this species is unclear … Haines & Lye (1983) regard it as a synonym of *Schoenoplectus senegalensis*. Kern (1974) is of the opinion that *Scirpus articulatus*, *S. praelongatus*, and *S. senegalensis* do not deserve individual specific ranking" (Gordon-Gray 1995: 154).

S. erecta (Poir.) Lye; often cited as *Schoenoplectus erectus* in floras and flora lists; Clarke & Mannheimer, Cyper. Namibia: 95, 82 (map), 1999; Archer & Craven, Cyper. Namibia 25, 2004; Fl. Trop. E. Afr., Cyper.: 34 (*S. erecta*), 36 (*S. lateriflora* subsp. *laevinux*), 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 123, 2010; Hayasaka (2012): 181. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 61−62, 63 (nutlet, *S. lateriflora* subsp. *laevinux*), 1983; Gordon-Gray, Cyper. Natal: 155, 1995 (nutlet, subsp. *raynalii*); Cook, Aquat. & wetland pl. south. Afr.: 114, 2004 (subsp. *raynalii*); Xanthos & Browning in Kew Bull. 70/3: § 36: 3, 4 (as *S. lateriflora* subsp. *laevinux*), 2015; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 74, 2017 (subsp. *raynalii*, details).

bas.: *Scirpus erectus* Poir.

syn.: *Sci. supinus* L. subvar. *erectus* (Poir.) Rouy; *Schoenoplectus erectus* (Poir.) Palla ex J. Raynal.

Annual or short-lived perennial, densely tufted herb; culms weak, 5−40 cm long (excluding inflorescence bract), 0,4−0,8 mm ∅, almost terete, base covered by old bits of sheath; leaves reduced to sheaths, or less often present and up to 3 cm long, sheaths ending in a 0,6−1 cm long obtuse lobe; basal cleistogamous (female, 3-styled) flowers often produced in leaf sheaths developing basal nutlets c. 2,2 × 1,4 mm, sometimes with 2 bristles; inflorescence pseudolateral, overtopped by lower bract, upper absent or present, short; inflorescence head-like or spreading, with 1−20 subsessile or stalked spikelets; these reddish-brown to cream, ovoid, 3−18 × 2−3,5 mm, acute; glumes 2,5−4 mm long, mucronate; perianth bristles absent; stamens 3; *style* 2- *branched*; *nutlets* broadly obovoid, *biconvex*, *surface strongly transversely wrinkled* (subsp. **raynalii**) or *hardly wrinkled* (subsp. **erecta**).

River banks; margins and edges of wetlands; seasonal swamps; swampy ground along edges of water bodies; 0−900−1100 m alt.

Comprises 2 subspp.: – subsp. **erecta** [syn.: *Scirpus lateralis* Retz. 1786, nom. illeg., non Forssk. 1775 (= *Schoenoplectiella supina*); *Scirpus ternatus* Wall. 1831, nom. nud.; *Sci. ternatus* Ham. ex Hook. f. 1893, nom. inval.; *Sci. supinus* Boeckeler var. *uninodus* (Delile) Asch. & Schweinf., and subsp. *uninodus* (Delile) Trab.; *Sci. uninodus* (Delile) Coss. & Durieu; *Sci. erismaniae* Schuyler; *Sci. wilkensii* Schuyler; *Sci. sinuatus* Schuyler; *Schoenoplectus erectus* (Poir.) Palla ex J. Raynal subsp. *sinuatus* (Schuyler) Lye; *S. lateriflorus* (J. F. Gmelin) Lye subsp. *laevinux* Lye; *Schoenoplectiella lateriflora* (J. F. Gmel.) Lye subsp. *laevinux* (Lye) Beentje, and var. *laevinux* (Lye) Hayas.; *Isolepis uninodus* Delile]; with distribution outside our area: Portugal, SW Spain, N. Africa (Algeria, Libya, Egypt); Madagascar, Mauritius; India, Vietnam; Australia (possibly introduced); – subsp. **raynalii** (Schuyler) Beentje [bas.: *Scirpus raynalii* Schuyler; syn.: *Sci. erectus* Poir. subsp. *raynalii* (Schuyler) B. F. Hansen & Wunderlin; *Schoenoplectus erectus* (Poir.) Palla ex J. Raynal subsp. *raynalii* (Schuyler) Lye]; with distribution outside our area: Namibia, S. Africa, Botswana; SE USA S-wards to Mexico, S. America (Argentina, Paraguay). – In our area, subsp. **erecta** occurs in W. Africa, in E. Africa (Tanzania, Zambia); subsp. **raynalii** in E. Africa from Uganda-Tanzania to Zambia, Zimbabwe.

S. lateriflora is very close to *S. erecta*. In a comparative table, Xanthos & Browning (2015) give the key characters: *S. lateriflora* has 3 stigma branches (not 2), and rugose trigonous nutlets (not biconvex), and longer basal nutlet.

The latter authors also comment on the geographical distribution of *S. erecta*: in Zambia plants were collected in an area where rice is an important cash crop (and possibly introduced with rice seeds). The plant has perhaps also been introduced into other African countries.

S. hooperae ("hooperiae" J. Raynal) Lye; Hayasaka (2012): 181; Fl. Trop. E. Afr., Cyper.: 33, 2010. – Icon.: Raynal in Adansonia, Sér. 2, 16: 147, 1976; Haines & Lye, Sedges & rushes E. Afr.: 60, 1983.

bas.: *Schoenoplectus hooperae* J. Raynal

Annual (or perennial) tufted herb; culms 3−20 together, 4−15 cm long (excluding inflorescence bract that is 15−40 cm long), 1−2 mm ∅, round or 3-angular; leaf sheaths green, much wider than culm, ending in a triangular lobe; blade absent; often with a solitary basal flower, with nutlet 2,6 × 2,3 mm; inflorescence of apparently lateral globose clusters of 3−15 densely packed sessile spikelets; these (greenish) brown, ovate, 4−8 × 2−3 mm; stamens 3; style 3-branched; nutlet ± obovoid, 1 × 0,6 mm, ± smooth.

Seasonally wet habitats in bushland zone; 500−1450 m alt.

Known also from 1 locality in Zambia.

S. juncea (Willd.) Lye; often figuring as *Schoenoplectus junceus* in floras and flora lists. – Raynal in Adansonia, N. S. 16: 139, 1976 (fig. nutlet p. 125); Thulin, Fl. Somalia 4: 104, 1995; Simpson & Inglis in Kew Bull. 56: 335, 2001; Lisowski, Fl. Rép. Guinée 1: 410−411, 2009; Fl. Trop. E. Afr., Cyper.: 34−35, 2010; Malaisse, Guide florist. Parc Natl. Cantanhez: 152, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011 (2 maps); Hayasaka (2012): 181; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015; César & Chatelain, Fl. ill. Tchad: 136, 2019. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 64, 1983; Berhaut, Fl. ill. Sénégal 9: 317, 1988; Akoègninou & al., Fl. analyt. Bénin: 115, 2006.

bas.: *Schoenus junceus* Willd. 1794, non *Scirpus junceus* G. Forst.

syn.: *Scirpus aureiglumis* S. S. Hooper, nom. nov.; *Schoenoplectus junceus* (Willd.) J. Raynal

Tufted annual herb; culms 3−20 together, bright green, 4−60 cm tall (excluding 6−20 cm long inflorescence bract), 0,6−1,5 mm ∅, round, slightly ridged, filled with pith; leaf sheaths pale green, ending in a linear lobe to 5 mm long; blade absent; sometimes with cleistogamous flower with style to 10 mm long and dark brown nutlet, ovate, 2−3 × 1,5−2 mm, transversely wrinkled; inflorescence a dense apparently lateral cluster of 1−10 sessile spikelets; these green and pale brown or *orange-green*, lanceolate, 4−10 × 0,5−1,5 mm, golden at maturity; stamens 3; style 3-branched.

Moist sandy soil; seasonal pools and swamps; along drainage lines; sometimes in standing water; ricefields; 0−600 m alt.

[**S. juncoides** (Roxb.) Lye]; Prasad & Singh, Sedges Karnataka (India): 304−305, 2002; Mesterházy in Lidia 7: 119, 2012. – Icon.: Fl. China, Ill. 23: 246, 250, 2012; Illustrated Cyperaceae of Korea: 471, 2016.

bas.: *Scirpus juncoides* Roxb.

syn.: *Schoenoplectus juncoides* (Roxb.) Palla

Annual or short-lived perennial herb 15−60 cm tall; culms densely tufted, obtusely several-angled or ± terete, smooth, 1−2 mm ∅; leaf sheaths 0,5−8 cm long, apex mucronate; blade absent; inflorescence a pseudolateral head with 2−6 sessile spikelets; involucral bract 1, 2−10 cm long; spikelets ovoid, 5−12 × 4−5 mm, densely many-flowered; stamens 3; stigmas 2; nutlet unequally biconvex, obovate, c. 2 × 1,5 mm, shining blackish-brown, faintly transversely wrinkled, apex mucronate.

Rice field; 466 m alt.

Liberia: Nimba, Gepa.

W Indian Ocean from Madagascar, Reunion, Seychelles, Asia from India to Japan, and E-wards to New Guinea, Fiji isl., Hawaii.

Asian species, new to the African mainland. Probably arrived in W. Africa with rice imported from China. Found in a single locality, but is probably much more widespread (Mesterházy, l.c.).

S. lateriflora (J. F. Gmel.) Lye, excl. subsp. *laevinux* (Lye) Beentje, and var. *laevinux* (Lye) Hayas. (= *S. erecta* subsp. *erecta*); figuring in many floras and flora lists as *Schoenoplectus* or *Scirpus lateriflorus*; Blumea, Suppl. 4: 163, 1958; Raynal in Adansonia, N. S. 16: 139−140, 1976; Berhaut, Fl. ill. Sénégal 9: 318−319, 1988 (as subsp. *lateriflorus*); Clarke & Mannheimer, Cyper. Namibia: 95, 82 (map), 1999; Prasad & Singh, Sedges Karnataka (India): 305−306, 2002; Cabezas & al. in Belg. J. Bot. 137: 17, 2004 (for Equat. Guinea, but not cited by Velayos & al., Fl. Guinea Ecuat. 11, 2014); Lisowski, Fl. Rép. Guinée 1: 411, 2009; Fl. Trop. E. Afr., Cyper.: 35, 2010 (subsp. *lateriflora*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012; Xanthos & Browning in Kew Bull. 70/3: § 36: 1−5, 2015; Fl. Mascareignes 202, Cypér.: 12, 2018. – Icon.: Mitt. Bot. Staatssamml. München 10: 536, 1971; Haines & Lye, Sedges & rushes E. Afr.: 63, 1983 (subsp. *lateriflorus*); Nord. J. Bot. 12: 174, 1991; Gordon-Gray, Cyper. Natal: 159, 1995 (nutlet); Thulin, Fl. Somalia 4: 105, 1995; Fl. Eth. & Eritrea 6: 403, 1997; Cook, Aquat. & wetland pl. south. Afr.: 114, 2004; Hayasaka (2012): 174 (inflorescence).

bas.: *Scirpus lateriflorus* J. F. Gmel.

syn.: *Sci. supinus* L. var. *lateriflorus* (J. F. Gmel.) T. Koyama; *Schoenoplectus lateriflorus* (J. F. Gmel.) Lye; *Schoenoplectus supinus* (L.) Palla subsp. *lateriflorus* (J. F. Gmel) Soják 1972, and var. *lateriflorus* (J. F. Gmel.) T. Koyama 1978; *Isolepis ambigua* Zoll.; *I. oryzetorum* Steud.; *I. juncoides* Miq.; *Scirpus erectogracilis* Hayata; *Scirpus supinus* sensu Fl. Trop. Afr. 8: 452, 1902, non L., p.p.; *Sci. erectus* sensu Berhaut, Fl. Sénégal, ed. 2: 361, 1967; *Sci. supinus* sensu Cufod., Enum.: 1473, 1970; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual or sometimes perennial herb; culms tufted, 5−40 together, bright green, triangular or less often round, 4−40 cm long (excepting the stem-like inflorescence bract 3−20 cm long), 0,4−1,8 mm ∅, ridged; leaf sheath ending in a proper leaf or in a lobe 1−2 mm long; blade to 30 cm long, 3 mm wide, flat or folded; sheath often with cleistogamous flower with style 1−1,5 cm long and black nutlet 2−2,5 × 1,4−2 mm, minutely wrinkled; inflorescence an apparently lateral, ± contracted cluster of spikelets on unequal stalks; spikelets brown and green, lanceolate, 4−10 × c. 2 mm, acute; stamens 3; style 2-branched; nutlet trigonous, surface rugose, transversely wrinkled.

Swamps; muddy marsh; lagoon margins; water holes; pond or lake shores; seasonal pools; may be in standing water to 30 cm deep, but usually on moist soil; ricefields; seasonally swampy grassland; 0−1300 m alt.

Namibia, S. Africa, Botswana; Madagascar; W & S Asia from Afghanistan, Tadzhikistan, India, Sri Lanka, Nepal, E-wards to Philippines, N Australia. Tropical & subtropical Old World.

Near *S. erecta*, but distinguished from that species by a combination of 3 style branches, trigonous nutlet with surface markedly rugose (resembling that of *S. erecta* subsp. *raynalii*).

S. microglumis (Lye) Lye; Raynal in Adansonia, N. S. 16: 143, 1976; Fl. Trop. E. Afr., Cyper.: 33, 2010; Hayasaka (2012): 181. – Icon.: Lye in Bot. Not. 124: 289, 1971; Haines & Lye, Sedges

& rushes E. Afr.: 61, 1983; Troupin, Fl. Rwanda 4: 477, 1988; Fl. Eth. & Eritrea 6: 403, 1997.

bas.: *Schoenoplectus microglumis* Lye

syn.: *Scirpus tenerrimus* Peter 1936, nom. illeg., non Schrad. ex Nees 1842; *Sci. supinus* sensu Clarke in Fl. Trop. Afr. 8: 452, 1902, p.p. quoad specim. Quartin-Dillon & Petit, non L.

Annual or sometimes perennial herb; culms 10-many, tufted, 4−15 cm long (excluding inflorescence bract 6−15 cm long), c. 0,7 mm ∅, round or angular, ridged; leaf sheath pale brown, ending in a liner lobe 1−5 mm long or blade-like; cleistogamous flower often produced in basal sheath; inflorescence apparently lateral, a dense cluster of 3−15 (sub)sessile spikelets; these reddish-brown and pale brown variegated, ovoid, 3−5 × 1,5−2 mm, *with pointed parts of minute glumes*; stamens 3; style 3-branched.

Seasonally swampy grassland, on mud at pool and swamp edges; shallow seepage soil over rock; may be very locally common; grassy strip between fields of *Guizotia*, *Eleusine*; 950−1800 m alt.

S. mucronata (L.) J. Jung & H. K. Choi. Usually placed in *Schoenoplectus* in current floras (*Scirpus* in older floras). – Raynal in Adansonia, Sér. 2: 15: 106−107, 1975; Simpson & Inglis in Kew Bull. 56: 336, 2001; Prasad & Singh, Sedges Karnataka (India): 309−310, 2002; Cafferty & Jarvis in Taxon 53: 181, 2004 (typification); Lisowski, Fl. Rép. Guinée 1: 411, 2009; Fl. Trop. E. Afr., Cyper.: 26−27, 2010; Mesterházy in Lidia 7/5: 119, 2012; Glon & al. in Syst. Bot. 42: 29−30, 2017; Flore des Mascareignes 202, Cypér.: 12−13, 2018. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 124, 1974 (under *Scirpus*); Haines & Lye, Sedges & rushes E. Afr.: 55, 1983; Berhaut, Fl. ill. Sénégal 9: 320, 1988; Pignotti in Webbia 58: 344, 2003; Boulos, Fl. Egypt 4: 356, 2005; Fl. Gabon 44, Cyper.: 193, 195 (nutlet), 2012; Fl. China, Ill. 23: 245, 2012 [*Schoenoplectus mucronatus* subsp. *robustus* (Miquel) T. Koyama]; Velayos & al., Fl. Guinea Ecuat. 11: 403, 2014.

bas.: *Scirpus mucronatus* L., non Roxb. (= *Schoenoplectiella supina*).

syn.: *Sci. glomeratus* Scop. 1771, nom. illeg., non L. 1753 (nec Retz. 1786, nec Roxb. 1820); *Sci. mauritanicus* Steud.; *Isolepis mucronata* (L.) Fourr.; *Schoenoplectus mucronatus* (L.) Palla; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with short rhizome, or annual, forming small tufts, with a small root system; culms 3−10 together, 30−80 cm long (exclud. inflorescence bract 1,5−3 cm long), 2−8 mm ∅, *sharply triangular*; leaf sheaths 2, pale brown, the lower to 2,5 cm, the upper 4−15 cm long, ending in a triangular apex or a minute mucro; blade absent; inflorescence an apparently lateral cluster of 4−25 sessile spikelets; these ovoid, pale brown, to 5 mm long at anthesis, increasing to 30 × 6 mm in fruit; stamens 3; stigmas 3.

Swamps or open water; stream bed and sides; dominant in deeper water of marshes; "a greater problem in paddy fields"; 450−1800 m alt.

Bioko/Fernando Poo; perhaps also in Senegal; Egypt; Azores; C & S Europe (Pignotti in Webbia 58: 343−345, 2003, in Italy "rare and inconstant", with map p. 346; Austria, S Germany, Hohla in Stapfia 105: 116, 2016); Madagascar, Réunion; Yemen (Wood, Handbook Yemen flora: 332, 1997); W, C & S Asia to China [*Schoenoplectus muricatus* subsp. *robustus* (Miquel) T. Koyama], Japan (rare; var. *antrorsispinulosus* Iokawa, K. Kohno & Daigobo, J. Japan. Bot. 79: 1−3, 2004, with figs.); Indonesia, Philippines, New Guinea [subsp. *clemensii* (Kük.) Soják]; Australia, Melanesia; USA (introduced rice weed). – Widespread in temperate and tropical regions of the Old World. Possibly introduced into Africa as a weed of ricefields.

Recent field work (c. 2010) in the Guineo-Congolian region yielded collections of the smut fungus *Dermatosorus schoenoplecti* in Cameroon; previously known only from Thailand and Australia (Piatek in Scripta Bot. Belg. 46: 354, 2010).

Placed in *Schoenoplectiella* on basis of morphological and molecular (microsatellite markers) characters (Jung & Choi in Pl. Biol. 54: 409−417, 2011).

S. oxyjulos (S. S. Hooper) Lye – Usually cited under *Schoenoplectus*. – Raynal in Adansonia, N. S. 16: 151, 1976; Boudouresque & al. in Adansonia 18: 383, 1978 (Niger); Lisowski, Fl. Rép. Guinée 1: 411, 2009; Hayasaka (2012): 181; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 8, 1974; Hooper in Kew Bull. 40: 783−784, 1985; Browning & Burgt, ibid. 67: 422−425, 2012.

bas.: *Scirpus oxyjulos* S. S. Hooper

syn.: *Schoenoplectus oxyjulos* (S. S. Hooper) J. Raynal; *Scirpus erectus* sensu Cherm., Arch. Bot. Caen 4, Mém. 7: 26, 1931, p.p. quoad specim. Tisserant 2754, non Poir.

Densely tufted rush-like herb; culms 10−45 cm tall, 1−2 mm ∅, woody at base, glabrous, soft, terete, ridged, often swollen at base by pistils within the basal sheaths; sheaths 1−6 cm long, membranous, apiculate, bladeless; inflorescence of 1−3 spikelets, pseudolateral, sessile, erect, greenish or straw-coloured, often somewhat somewhat curved, 0,7−1,7 cm × 2 mm (lengthening with age to 2,7 cm), with acute tip; stigmas 2.

Temporary pools; wet flushes on gneiss outcrops and inselbergs with *Dopatrium*; pool on gneiss; swampy places; 650−800 m alt.

Resemblance with *Cyperus podocarpus*, *C. lateriticus* growing in the same sites (fide J. Raynal).

"Since the species has inconspicuous inflorescences, it is easily overlooked by collectors; therefore it may be more common than the herbarium collections suggest" (Browning & Burgt, o.c.).

S. patentiglumis (Hayas.) Hayas. – Icon.: Hayasaka in J. Japan. Bot. 78, 66−68, 69 (map, partial), 2003; Hayasaka (2012): 181; Verloove & al. in Phytotaxa 283: 98, 2016 (details).

bas.: *Schoenoplectus patentiglumis* Hayas.

syn.: *Schoenoplectus* cf. *articulatus* sensu Schäfer (in Verloove & al. 2016: 97).

Annual tufted herb, glabrous, amphicarpous; culms in small clumps, 6−36 cm long, (excl. involucral bract 20−40 cm long), 1−4 mm ∅, smooth, finely striate, nodeless or often 1-noded 1−6 cm above base; leaf sheaths 1−3, basal or often uppermost cauline; lower sheaths short, closed or scale-like, apex obtuse; uppermost sheath closed, tubular, 5−12 cm long, apex obtuse; ligules absent; inflorescence pseudo-lateral, capitate, with 1−12 spikelets; these sessile, ± ovoid, 7−15 × 4−5 mm (to 10 mm wide when fruiting), many-flowered; *glumes spreading*, *stramineus*, *ovate*, 4−5 × 2−4 mm, loosely imbricate, persistent; stamens 3; styles 3.

In shallow water of seasonal pool; in and around edge of pan near head of stream; wet mud at edge of laterite pool; small pool; 320−453 m alt.

Namibia, S. Africa, Botswana, Swaziland.

Near *S. articulata*, but culms of *S. patentiglumis* narrower (not 2,5−8 mm ∅); inflorescence with less numerous spikelets (not 4-ca. 100); glumes not broadly ovate-triangular and appressed when fruiting, and not reddish-brown-tinged; anthers shorter (0,7−1 mm long, not 1−2 mm).

SCHOENOPLECTIELLA PATENTIGLUMIS

Namibia, S. Africa, Botswana, Swaziland.

(**S. praelongata** (Poir.) Lye, Lidia 6: 26, 2003). – Icon.: Boulos, Fl. Egypt 4 : 356, 2005.

bas.: *Scirpus praelongatus* Poir.

syn.: *Schoenoplectus praelongatus* (Poir.) J. Raynal, Adansonia, N. S. 16: 148, 1976.

An annual herb forming tufts; culms 2−20 cm tall (excl. inflorescence bract 4−36 cm long), 2−5 mm ∅, greyish-green; leaf sheaths 2−3, upper as long as stem, ending in a mucro; blade absent; inflorescence congested, spherical, of 7−30 sessile spikelets; these ± ovoid, 5−12 × 3−4 mm; glumes c. 4 mm long, shortly mucronate; stamens 3; stigmas 3; nutlet surface finely transversely rugulose.

At pools and ditches, wet ground.

An Asiatic species distributed from Pakistan E-wards to Vietnam, Philippines, Australia (Kukkonen in Fl. Pakistan 206, Cyper.: 27−28, 2001, under *Schoenoplectus*). Recorded from Egypt (Boulos, l.c.) as a weed of rice fields.

Much resembling *S. articulata* (with smooth nutlet surface !). Also similar to and confused with *S. senegalensis* (with nutlet surface transversely wrinkled). Records of *S. praelongata* from Chad, Namibia (Clarke & Mannheimer, Cyper. Namibia: 25, 2004), S. Africa are (possibly) *S. senegalensis* (See that species below).

S. proxima (Steud.) Lye, incl. var. *botswanensis* (Hayas.) Hayas. – Usually cited under *Schoenoplectus* in floras and flora lists. – Raynal in Adansonia, N. S. 16: 144, 1976; Brunel & al., Fl. analyt. Togo in Englera 4: 562, 1984 (as *S. raynalianus*); Fl. Trop. E. Afr., Cyper.: 36, 2010; Verloove & al. in Phytotaxa 283: 98−99, 2016. – Icon.: U. Scholz in Willdenowia 11: 92, 1981 (as *S. raynalianus*); Haines & Lye, Sedges & rushes E. Afr.: 60, 1983; Hayasaka in J. Japan. Bot. 80: 162, 2005 (*S. proximus* var. *botswanensis*); César & Chatelain, Fl. ill. Tchad: 136, 2019.

bas.: *Isolepis proxima* Steud.

syn.: *Schoenoplectus proximus* (Steud.) J. Raynal, incl. var. *botswanensis* Hayas.; *S. raynalianus* U. Scholz; *Schoenoplectiella raynaliana* (U. Scholz) Lye; *Scirpus supinus* var. *minimus* Boiss., excl. syn. *Sci. pollicaris* Delile; *Sci. supinus* sensu Quézel in Mém. Inst. Rech. Sahar. 4: 121, 1958, non L., et sensu Gillet in Mém. Mus. Natl. Hist. Nat., Sér. B 17: 181, 194, 1968.

Annual herb forming small tufts; culms 1−2 cm long (excepting the filiform inflorescence bract 1−5 cm long, i.e. longer than culm), 0,3−0,5 mm ∅, round, glabrous; leaf sheath wide, ending in a 5 mm long lobe, and often with a swelling hiding cleistogamous flower with long style and dark brown nutlet c. 1 mm ∅ minutely wrinkled; inflorescence an apparently lateral single greenish-brown spikelet; this ovoid, 2−5 × 1,5−2 mm, somewhat flattened, usually 5−8-flowered; glumes very small (1,5−2 mm long); stamens 2−3; styles (2−)3; nutlet 1 mm long, trigonous, surface transversely rugulose.

Rice field; humid mud; seasonally inundated grassland; flooded sands (Abou Simbel, Egypt); up to 2200 m alt. (Chad, Tibesti).

Namibia, Botswana; Egypt; Yemen (Wood, Handbook Yemen flora: 332, 1997).

Very rarely collected, e.g.: 1835 (Egypt); 1956, 1958 (Chad); 1980 (Botswana). Probably overlooked. "It is unknown if this disjunct pattern is genuin or merely the result of being poorly understood" (Verloove & al., l.c.).

Boulos, Fl. Egypt 4, 2005, does not mention *Schoenoplectus proximus*, only the true *S. supinus* (L.) Palla.

SCHOENOPLECTIELLA PROXIMA

Uncertain in Tanzania (specimen Scott Elliot 3287) not seen by the authors of Fl. Trop. E. Afr., Cyper.: 36, 2010. Not figuring in Fl. Ethiopia & Eritrea 6, 1997.

S. roylei (Nees) Lye – Mostly treated under *Schoenoplectus* in floras and flora lists, rarely under *Scirpus*. – Raynal in Adansonia, N. S. 16: 150, 1976; Thulin, Fl. Somalia 4: 104, 1995; Clarke & Mannheimer, Cyper. Namibia: 95, 83 (map), 1999; Hayasaka in J. Japan. Bot. 78: 68, 2003 (in key); Fl. Trop. E. Afr., Cyper.: 30−31, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 59, 1983; Berhaut, Fl. ill. Sénégal 9: 321, 1988; Nord. J. Bot. 12: 174, 1991; Fl. Eth. & Eritrea 6: 402, 1997; Cook, Aquat. & wetland pl. south. Afr.: 115, 2004 (as *Schoenoplectus lupulinus*); César & Chatelain, Fl. ill. Tchad: 136, 2019.

bas.: *Isolepis roylei* Nees

syn.: *Scirpus roylei* (Nees) R. Parker 1929, and (Nees) Beetle 1942; *Sci. quinquefarius* Buch-Ham. ex Boeckeler; *Sci. lupulinus* (Nees) Roshev. nom. illeg., non Spreng. 1807; *Sci. rehmannianus* Boeckeler ex C. B. Clarke 1894, nom. inval.; *Schoenoplectus roylei* (Nees) Ovcz. & Czukav.; *S. quinquefarius* (Buch.-Ham. ex Boeckeler) Palla; *S. lupulinus* (Nees) V. I. Krecz.; *Scirpus melanospermus* C. A. Mey. var. *major* Regel

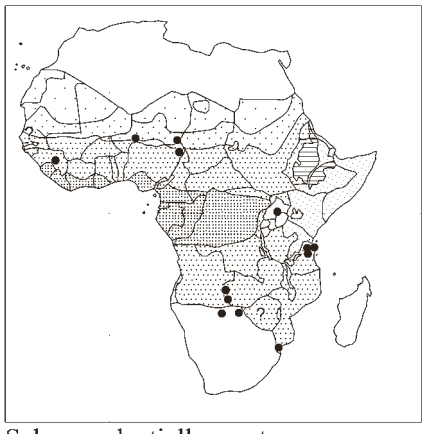
Annual herb; culms tufted, dark green, glossy, 4-many, 2−20 cm long (excepting erect inflorescence bract 6−26 cm long), 0,5−1,5 mm ∅, ridged, transverse septa hardly visible; leaf sheath pale brown or pale reddish-brown, usually without any lobe; blade absent; sheath often with cleistogamous flowers with long style and nutlets transversely wrinkled; inflorescence an apparently lateral cluster of 2−10 sessile spikelets; these pale reddish-brown to pale yellow-brown, ovoid, 4−6 × 2−3 mm; glumes spreading when fruiting; stamens 2−3; stigmas 3; nutlet transversely wrinkled.

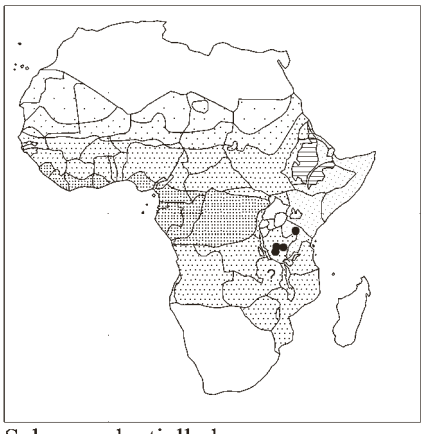
Seasonally wet grassland; pool, lake, dam edges; usually on mud or sand; sometimes in shallow water; yellow clay soil with *Salvadora persica*; bare humid sands; hollows in coastal dunes; somewhat saline, seasonally wet swamp; rice fields; irrigation ditches; 0−1600 m alt.

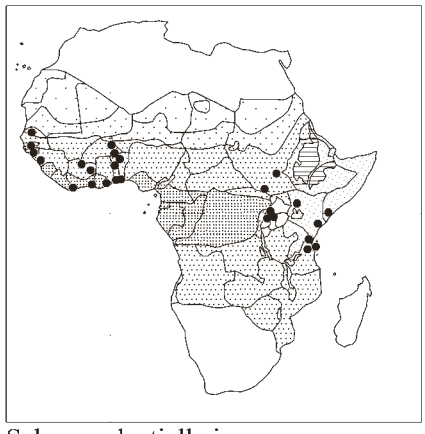
Namibia, Botswana; SW Russia; W, C & S Asia, from Iraq, Iran, Afghanistan, E-wards to India, Assam, Pakistan.

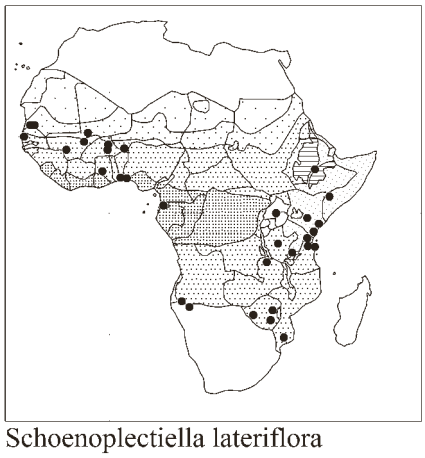
Confused with *S. senegalensis* – and sometimes collected mixed with the latter.

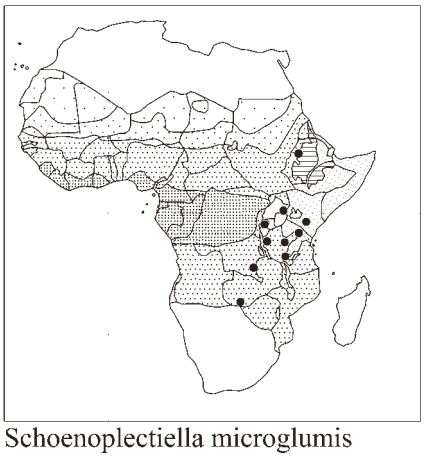
S. senegalensis (Hochst. ex Steud.) Lye – Usually figuring under *Schoenoplectus* in flora works. – Raynal in Adansonia, N. S. 16: 149−150, 1976; Clarke & Mannheimer, Cyper. Namibia: 95, 83 (map), 1999; Simpson & Inglis in Kew Bull. 56: 337, 2001; Prasad & Singh, Sedges Karnataka (India): 310, 2002; Hayasaka in J. Japan. Bot. 78: 69, 2003 (in key); Archer & Craven, Cyper. Namibia: 25, 2004; Lisowski, Fl. Rép. Guinée 1: 411, 2009; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 58, 1983; Berhaut, Fl. ill. Sénégal 9: 322, 1988; Nord. J. Bot. 12: 175, 1991; Thulin, Fl. Somalia 4: 105, 1995; Gordon-Gray, Cyper. Natal: 162, 1995 (nutlet); Fl. Eth. & Eritrea 6: 401−402, 1997; Cook, Aquat. & wetland pl. south. Afr.: 115, 2004; Wadood Khan & al. in J. Econ. Taxon. Bot. 30: 445, 2006 (as *Scirpus jacobii*); Fl. Trop. E. Afr., Cyper.: 32, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 74, 2017; César & Chatelain, Fl. ill. Tchad : 136, 2019.

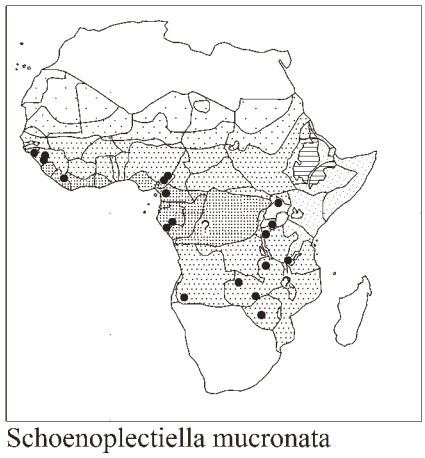

Schoenoplectiella erecta

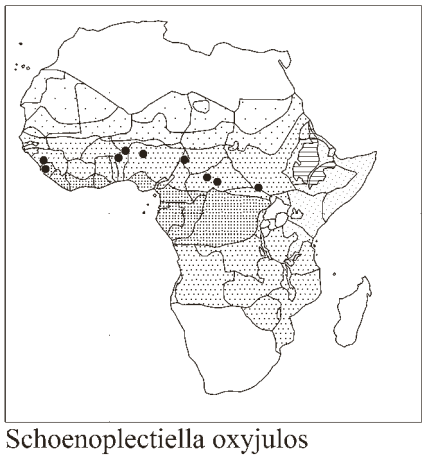

Schoenoplectiella hooperae

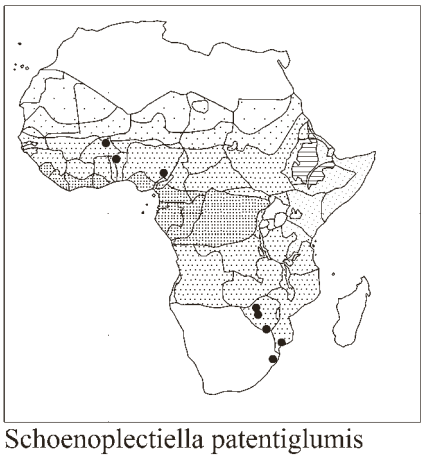

Schoenoplectiella juncea

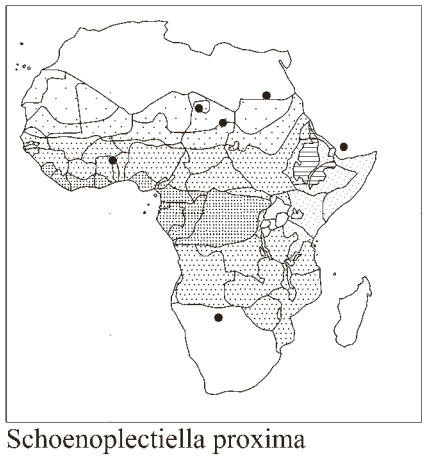

Schoenoplectiella lateriflora

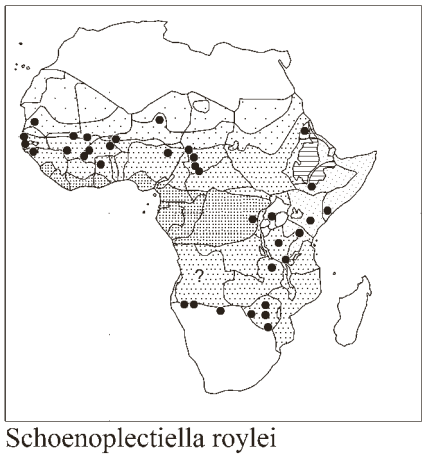

Schoenoplectiella microglumis

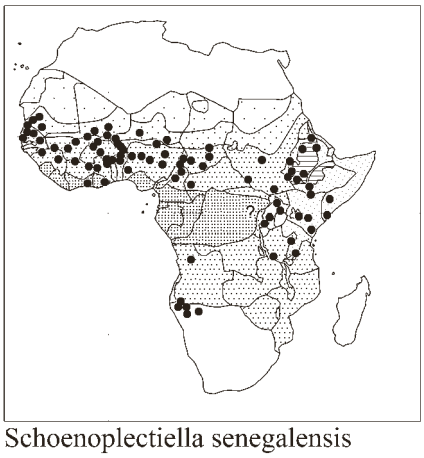

Schoenoplectiella mucronata

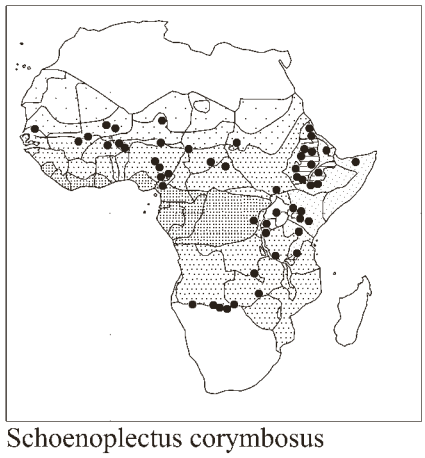

Schoenoplectiella oxyjulos


Schoenoplectiella patentiglumis


Schoenoplectiella proxima


Schoenoplectiella roylei


Schoenoplectiella senegalensis


Schoenoplectus corymbosus

bas.: *Isolepis senegalensis* Hochst. ex Steud. 1855, non *Scirpus senegalensis* Lam. 1791.

syn.: *Scirpus articulatus* L. var. *tenuis* Roth, and var. *stramineus* Engl.; *Sci. jacobi* C. E. C. Fisch.; *Schoenoplectus jacobi* (C. E. C. Fisch.) Lye; *Sch. senegalensis* (Hochst. ex Steud.) Palla ex J. Raynal; *Scirpus praelongatus* sensu auctt., non Poir.: G. Carvalho & H. Gillet, Catalogue… de l'Ennedi (Office anti-acridien, Bull. h. s.: 119, 1960); Cufod., Enum.: 1472, 1970; Andrews, Flow. Pl. Sudan 3: 367, 1956; etc.

Annual or short-lived perennial herb; culms tufted, many, bright green, 1−30 cm long (excluding inflorescence bract 5−30 cm), 0,3−1,6 mm ∅, round or angular, hollow with transverse septa, ± smooth; leaf sheaths pale brown, rarely reddish near base, ending in an acute triangular lobe; blades absent; sometimes with cleistogamous flower with style to 2 cm long and nutlet 2−2,5 mm long; inflorescence a dense apparently lateral cluster of 1−25 sessile spikelets; these ovoid, yellow-green turning golden-brown, 3−9 × 2−4 mm; glumes appressed when fruiting; stamens 3; stigmas 3; nutlet strongly transversely wrinkled on *flat sides*.

Temporary pools or ditches, often within dry bushland zone; stream or lake-side swamps; weed in old rice paddies; in shallow pools on rocky outcrops; may be in up to 20 cm deep water; stagnant waters; swampy savannas; bare, ± clayey soil; in ephemeral vegetation at shorelines of Sahelian seasonal lakes (Müller in Syst. Geogr. Pl. 75: 244, 2005); near sea-level to 1900 m alt.

Variable in robustness (not in height) and in development, or not, of transverse septa in culms and inflorescence bracts (Gordon-Gray, l.c.).

Namibia, S. Africa, Botswana, Swaziland; India.

Used as molluscicide (Sudan).

Easily recognised by its dense clusters of golden-brown or bronze coloured spikelets, and the very concave triangular glumes.

Limits between *S. senegalensis* and *S. articulata* are not clearly defined (Gordon-Gray, l.c.).

W. Khan & al. (o.c.: 444) who treat this species under *Scirpus*, distinguish two entities, viz. *Schoenoplectus senegalensis* and *Scirpus jacobi*, respectively. The latter, a plant from India, is a small plant, up to 20 cm tall, with smaller spikelets (2−2,5 mm wide, not 3−4 mm), and smaller nutlets (c. 1 mm long, not 1,2−1,8 mm).

(**S. supina** (L.) Lye); Figuring under *Schoenoplectus* or *Scirpus* in flora works. – Raynal in Adansonia, N. S. 16: 145, 1976; Kukkonen in Fl. Pakistan 206, Cyper.: 31−32, 2001; Pignotti in Webbia 58: 349, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 123, 2010; Hayasaka (2012): 181; Darbyshire & al., Pl. Sudan & S. Sudan: 115, 2015 ("no material seen with which to verify Andrews' record from Darfour"). – Icon.: Cook, Aquat. pl. book, ed. 2: 82, 1996; Ravi & Mohanan, Common trop. & subtrop. sedges & grasses: 89, 2002; Boulos, Fl. Egypt 4: 356, 2005.

bas.: *Scirpus supinus* L.

syn.: *Isolepis supina* (L.) R. Br.; *I. simillima* Steud.; *Schoenoplectus supinus* (L.) Palla; *Sch. melanospermus* (C. A. Mey.) Grossh.; *Scirpus supinus* var. *melanospermus* (C. A. Mey.) Schmalh.; *Sci. melanospermus* C. A. Mey.; *Sci. halleri* Vitman; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Annual tufted herb; culms 5−40 cm long, 0,8−3 mm ∅, terete or distal parts obscurely trigonous, grooved, green or greyish-green, smooth; leaf sheaths 2−3, to 6,5 cm long, the lowest ephemeral,

bearing an *occasional* flower in its axil; blade reduced to a mucro or in uppermost sheath to 5−10 cm long; inflorescence apparently lateral, 0,7−2 cm ∅, capitate, with 1−15 sessile spikelets; these ovoid, 0,5−1,2 cm × 2 mm; glumes dark red-tipped; nutlet with sharp furrows.

Edges of lakes and swamps.

N Africa: Algeria, Tunisia, Egypt; Europe, S Russia, Caucasus, S Siberia, Kazakhstan, Iran, Pakistan to S Asia; Brazil to NE Agentina.

S. supina is cited from Africa (Senegal, Mali, Togo, Nigeria, Chad; Madagascar) in World Checklist of Selected Plant Families, Kew. The specimens known from these countries are in need of revision, also because certain synonyms given by Raynal (l.c.) are now placed under other species, i.a. *S. erecta*, or *S. lateriflora*. It can be noted that in Flora of China 23, texts: 188, 2010, *Schoenoplectus lateriflorus* is treated as a subspecies of *S. supinus*, the other subspecies, viz. *densicorrugatus* (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang in Novon 20: 171, 2010 occurs in China.

Gordon-Gray (Cyper. Natal: 157, 1995) gives the following remarks: *Schoenoplectus supinus* is now regarded as Eurasian in distribution; it is distinguishable by culms that lack nodes above plant base, the inflorescence capitate, each cluster with a solitary bract, and achenes 1,3−1,5 mm long, no amphicarpy; *S. lateriflorus* is very close to *S. supinus*, but this species has 1−2 nodes above plant base, smaller achenes (1−1,3 mm long) with less well-marked transverse ridges, and with capacity for amphicarpy. *S. erectus* has been confused with *S. lateriflorus* (See under *Schoenopodiella lateriflora* above).

Not mapped by us.

SYNONYMS:

Schoenoplectiella lateriflora (J. F. Gmel.) Lye subsp. *laevinux* (Lye) Beentje, and var. *laevinux* (Lye) Hayas. = **Schoenoplectiella erecta** subsp. **erecta**
raynaliana (U. Scholz) Lye = **S. proxima**

SCHOENOPLECTUS / *5 + 1* ?

Schoenoplectus (Rchb.) Palla, nom. conserv.

Lye (Lidia 6: 23, 2006) gave the following key characters to distinguish *Schoenoplectus* from *Schoenoplectiella*: *Schoenoplectus* taxa are usually perennial (not annual); base female flower absent; plants growing in permanently aquatic habitats usually in temperate regions (not in seasonally wet habitats in tropical and subtropical regions).

Hayasaka (2012: 173, 178) gave the following distinguishing characters: *Schoenoplectus* species have elongate rhizomes, creeping and ascending (*Schoenoplectiella* with very short rhizome, hidden among culm-bases, or elongate and creeping); glumes are entire or minutely notched at apex (vs. glumes entire); culms solitary or few-fascicled, nodeless above base (vs. tufted or solitary, nodeless or 1−3-noded above base); plants perennial (vs. annual or perennial); nutlets smooth (vs. nutlets smooth or transversely rugulose to sharply ridged). The two genera can be distinguished from each other by the outline shape of the nutlet epidermal cells: in *Schoenoplectiella* ± linear; in *Schoenoplectus* isodiametric to narrowly oblong (figs. in Hayasaka, o.c.: p. 172).

"*Schoenoplectus*…is one of the genera that was segregated from the very heterogenous and un-natural genus *Scirpus* Linnaeus… Embryological studies by Van der Veken (1965) demonstrated that both genera are in fact not closely related and since then their generic status was no longer questioned. Molecular studies,

however, showed *Schoenoplectus* to be polyphyletic…Based on these results the new genus *Schoenoplectiella* Lye (2003: 20−22) was established. The remainder of *Schoenoplectus* is a well circumscribed, natural group and counts ca. 25 species…The classification of infrageneric taxa, however, remains unresolved" (Verloove & al. in Phytotaxa 344: 1, 2018).

The history of *Schoenoplectus* was published by Lye in Bot. Not. 124: 288−290, 1971.

There is also the question about the separation of *Schoenoplectus* from *Isolepis*. Lye (1971) stated that "although superficially similar in morphological characters, these genera are not closely related".

GLON, H. E. & al. (2017). A five gene phylogenetic study of Fuireneae (Cyperaceae) with a revision of Isolepis humillima. *Syst. Bot.* 42: 26−36.

HAYASKA, E. (2012). Delineation of Schoenoplectiella Lye (Cyperaceae), a genus newly segregated from Schoenoplectus (Rchb.) Palla. *J. Japan. Bot.* 87: 169−186.

LYE, K. A. (1971). Studies in African Cyperaceae III. A new species of Schoenoplectus and some new combinations. *Bot. Nov.* 124: 287−291.

RAYNAL, J. (1976). Notes cypérologiques: 26. Le genre Schoenoplectus II. L'amphicarpie et la sect. Supini. *Adansonia, Sér. 2*, 16: 119−155.

REUTEMANN, A. & al. (2012). Structure of the Cyperaceae inflorescence. *Bot. Rev.* 78: 184−204.

SHIELS, D. R. & al. (2014). Monophyly and phylogeny of Schoenoplectus and Schoenoplectiella (Cyperaceae): Evidence from chloroplast and nuclear DNA sequences. *Syst. Bot.* 39: 132−144.

VERLOOVE, F. & al. (2018). A reappraisal of Schoenoplectus muricinux (Cyperaceae) including S. confusus and closely allied taxa in Africa. *Phytotaxa* 344: 1−12 [with an expanded circumscription of *S. muricinux*].

Schoenoplectus corymbosus (Roth ex Roem. & Schult.) J. Raynal, incl. var. *brachyceras* (Hochst. ex A. Rich.) Lye; Thulin, Fl. Somalia 4: 103, 1995; Clarke & Mannheimer, Cyper. Namibia: 95, 82 (map), 1999; Simpson & Inglis in Kew Bull. 56: 334, 2001; Jiménez-Mejías & Cabezas in Candollea 64: 101−115, 2009; Gordon-Gray & al. in S. Afric. J. Bot. 75: 166, 2009 (pseudo-vivipary); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 115, 2010; Gereau & al., Lake Nyasa florist. checklist: 48, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 56, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 115−116, 2015; Verloove & al. (2018): 1−5. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 271, 1955 (as *Scirpus inclinatus*); Haines & Lye, Sedges & rushes E. Afr.: 56, 1983 (var. *brachyceras*); Troupin, Fl. Rwanda 4: 477, 1988 (as *S. brachyceras*); Berhaut, Fl. ill. Sénégal 9: 315, 1988 (var. *brachyceras*); Browning in S. Afric. J. Bot. 57: 337 (map), 338−342, 1991; Gordon-Gray, Cyper. Natal: 155, 1995 (nutlet); Fl. Eth. & Eritrea 6: 399, 1997 (var. *brachyceras*); Prasad & Singh, Sedges Karnataka (India): 303, 2002; Cook, Aquat. & wetland pl. south. Afr.: 113, 2004; Boulos, Fl. Egypt 4: 354, 2005; Burrows & Willis, Pl. Nyika Plateau, Malawi: 304, 2005 (as *Schoenoplectus brachyceras*); Jiménez-Mejías & al. in Nord. J. Bot. 25: 71, 72 (map), 2008; Fl. Trop. E. Afr., Cyper.: 27, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 75, 2017; César & Chatelain, Fl. ill. Tchad: 135, 2019.

bas.: *Isolepis corymbosa* Roth ex Roem. & Schult.

syn.: *Scirpus corymbosus* (Roth ex Roem. & Schult.) B. Heyne 1821, nom. illeg., non L. 1756; *Sci. corymbosus* var. *junciformis* Peter; *Sci. brachyceras* Hochst. ex A. Rich.; *Sci. inclinatus* (Delile ex Barbey) Asch. & Schweinf. ex Boiss.; *Isolepis inclinata* Delile 1813, nom. nud., ex Barbey 1882; *Schoenoplectus inclinatus* (Delile ex Barbey) Lye; *Sch. brachyceras* (Hochst. ex A. Rich.) Lye; *Scirpus madagascariensis* Boeckeler; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with short rhizome; culms many, tufted, dark or / and glossy green, 0,5−3,6 m tall, 0,2−1 cm ∅, round or sometimes slightly triangular near apex, ridged, filled with pith; base surrounded by dark scales and leaf sheaths; sheaths often splitting, ending in a short lobe; blade absent; inflorescence an anthela with clusters of ± sessile spikelets on very unequal flat stalks 1−12 cm long, rarely a few spikelets solitary and stalked; spikelets dark or pale brown, ovoid, 3−8 × 1−2,5 mm, acute, occasionally producing viviparous shoots; glumes 2−4 mm long, mucronate; *nutlet smooth*.

Lakes (where it may be locally dominant); swamps; pools; streamsides; usually in standing water to 1−3 m deep; less often in seasonally flooded grassland or forest margins; generally wet habitats; *sphagnetum*; swampy savannas; c. 300−3600 m alt. – Often forming dense open clumps conspicuous at a distance.

S Spain, N. Africa: Morocco (Jiménez-Mejías & al. 2007), Algeria, Egypt; Bioko/Fernando Poo; Namibia, S. Africa, Botswana, Swaziland; Madagascar; Saudi Arabia (Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 61, 2001), Yemen (Wood, Handbook Yemen flora: 331, 1997, as *Schoenoplectus inclinatus*); Pakistan, W India.

Two varieties have been described, viz. var. *corymbosus* with mature spikelets rounded, outline smooth, overtopping bract rounded, stem-like; var. *brachyceras* (Hochst. ex A. Rich.) Lye, with mature spikelet bristly, outline irregular, overtopping bract not rounded and stem-like; a lowland form (cf. Browning in S. Afric. J. Bot. 57: 335−343, 1991).

These varieties seem to overlap and are not recognized here as separate entities.

Culms used for making baskets and mats. "Ancient Egyptians used culms for making funeral wreaths, bound culms were ornated with flowers, berries, etc. sometimes peeled culms were used for making artificial flowers" (Simpson & Inglis, Kew Bull. 56: 334, 2001).

Plant easily recognized by its large size, dark spikelets, smooth nutlets.

Schoenoplectus corymbosus var. *brachyceras* (Hochst. ex A. Rich.) Lye, *Scirpus brachyceras* Hochst. ex A. Rich., are cited as synonyms of *Bulbostylis boeckeleri* (Schweinf.) Beetle by Thiombiano & al., Cat. pl. vascul. Burkina Faso: 41, 2012. There seems to be a confusion there.

(**S. heptangularis** Cabezas & Jim. Mejías) – Icon.: Candollea 64: 108−111, 2009; Velayos & al., Fl. Guinea Ecuat. 11: 402, 2014.

syn.: *Schoenoplectus corymbosus* auct., non (Roth ex Roem. & Schult.) J. Raynal; *Isolepis corymbosa* auct., non Roth ex Roem. & Schult. *Scirpus brachyceras* auct., non Hochst. ex A. Rich.; *Sci. inclinatus* auct., non (Delile ex Barbey) Asch. & Schweinf. ex Boiss. (See Candollea 64: 102, 2009).

Perennial rhizomatous herb; culms to 1,5 m tall, ca 1 cm ∅ in middle part, 2,1−4,2 mm ∅ just below inflorescence, irregularly *heptagonal*; leaf sheaths bladeless or sometimes ending in a small mucro; inflorescence a simple anthela with 19−47 spikelets most of which sessile, 4−17 spikelets clustered in fascicles at ray tips; rays ± canaliculate, smooth; spikelets ± ovate, 8,2−10,7 × 2−2,7 mm, 14−24-flowered; nutlets obovate, 1,5−1,9 × c. 1 mm, smooth.

Helophyte with base of stems under up to 1 m deep water; volcano crater lake shore; 1130−2000 m alt.

Bioko/Fernando Poo.

Near *S. corymbosus*, *S. decipiens* (Nees) J. Raynal (in S. Africa).

Not mapped.

S. lacustris (L.) Palla subsp. **lacustris**; Fl. Eth. & Eritrea 6: 398, 1997; Simpson & Inglis in Kew Bull. 56: 335, 2001; Cafferty & Jarvis in Taxon 53: 180, 2004 (typification); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 123, 2010; Shiels & al. in Syst. Bot. 39: 140−141, 2014. – Icon.: Pignotti in Webbia 58: 322, 2003; Delay & al. in Bull. Soc. Bot. Nord France 70: 68−69, 71−73, 2017 (comparison with *S. tabernaemontani*).

bas.: *Scirpus lacustris* L.

syn.: *Schoenus lacustris* (L.) Bernh.; *Scirpus holoschoenus* Oeder; *Sci. pungens* Willd. ex Kunth 1837, nom. illeg., non (Vahl) Poir. 1817, nec Vahl 1805; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb; rhizome horizontal with long internodes, and culms placed at 0,5−5 cm intervals; culms 0,5−3 m tall, 0,3−2 cm ∅, rounded, smooth, deep green, pith-filled, with 4−5 shortened basal internodes and one upper elongated internode; leaves 5−6, basal; sheaths to 30 cm long, opening at maturity along a ventral suture; lower sheaths ending in short lobes, upper with well-developed but rather short linear blades; inflorescence a lax anthela up to 10 cm ∅, with 5−50−100 spikelets, or groups of spikelets on stalks of unequal length, rarely a dense pseudo-lateral head; bracts ± as long as or shorter than inflorescence; spikelets ± ovoid, 5−10−15 × 2−5 mm, red-brown; glumes smooth, mucronate; perianth bristles 5−6; nutlets obovoid, bluntly trigonous, c. 2−3 × 1,5−2 mm, smooth; spikelets not pseudo-viviparous.

Freshwater swamps; lakeshores; weed in aquatic biotopes; 1900−2200 m alt.

In Ethiopia only known from one locality; ? Mauritania; ? S. Africa; N. Africa from Morocco to Libya; Yemen (Wood, Handbook Yemen flora: 331−332, 1997), Iraq (discovered in 2011, Feddes Repert. 124: 66−67, 2013), Iran; "almost throughout Europe, Siberia, W Asia to Mongolia"; introduced in Hispaniola (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 293, 2012).

Subsp. **hippolyti** (V. I. Krecz.) Kukkonen (bas.: *Scirpus hippolyti* V. I. Krecz.) in Asia E-wards to Mongolia). – Subsp. *validus* (Vahl) T. Koyama) = *Schoenoplectus tabernaemontani*.

Fibres used for basketwork, chair seating, to make matting, etc. Sometimes planted as an ornamental.

S. lacustris sensu auct., non (L.) Palla = *S. tabernaemontani* (in, e.g., Namibia).

Similar in general appearance to *S. corymbosus*.

S. litoralis (Schrad.) Palla ("littoralis").

See under **S. subulatus** (Vahl) Lye below.

(**S. maritimus** (L.) Lye) – See under **Bolboschoenus maritimus** (L.) Palla above.

S. muricinux (C. B. Clarke) J. Raynal – See article by Verloove & al. in Phytotaxa 344: 1−12, 2018. – Fl. Trop. E. Afr., Cyper.: 28−29, 2010 (as *Sch. confusus*, incl. var. *rogersii*). – Icon.: Bot. Not. 1934: 77, 1934 (as *S. muricinux* & *S. muriculatus*); Lowe & Stanfield, Fl. Nigeria: Sedges: 122, 126, (text), 1974 (as *Scirpus* sp. A. of Fl. W. Trop. Afr., ed. 2, 3/2: 311, 1972); S. Afric. J. Bot. 57: 253, 1991; Haines & Lye, Sedges & rushes E. Afr.: 57, 1997 (as *Schoenoplectus confusus*); Gordon-Gray, Cyper. Natal: 159, 1995 (nutlets *Sch. muricinux* & *Sch. muriculatus*); Fl. Eth. & Eritrea 6: 400, 1997 (as *Sch. confusus*); Verloove & al. (2018): 4, 6, 9 (global distribution, map).

bas.: *Scirpus muricinux* C. B. Clarke

syn.: *Schoenoplectus confusus* (N. E. Br.) Lye, incl. subsp. *natalitius* Browning, and var. *rogersii* (N. E. Br.) Lye; *Scirpus confusus* N. E. Br.; *Sci. rogersii* N. E. Br.; *Schoenoplectus rogersii* (N. E. Br.) Lye; *Sch. muriculatus* (Kük.) Browning; *Scirpus muriculatus* Kük.; *Sci. corymbosus* Roth ex Roem. & Schult. var. *junciformis* A. Peter; *Scirpus* sp. A sensu Fl. W. Trop. Afr., ed. 2, 3/2: 311, 1972.

Perennial tufted herb; rhizome short, woody, 2−7 mm ∅, with culms 5-many together and bases covered by persistent erect scales and leaf sheaths; culms 0,13−1,1 m long, c. 1−6 mm ∅, terete, glabrous, many-ridged, filled with pith; leaf sheaths 2−3, obliquely truncate at tip, with or without a reduced blade to 2 cm long; inflorescence a pseudo-lateral head or contracted anthela of clusters of spikelets on 1−8 rays unequal in length, 1−5 cm long, overtopped by a bract 2−15 cm long (appearing as a continuation of the culm); spikelets sessile, ± ovoid, 4−10 × 2−3 mm, many-flowered, yellow to chestnut brown or rust coloured, sometimes with dark markings; perianth bristles absent or 4−6 well defined bristles; stamens 3; stigmas 3; nutlet ovate, 1−1,8 × 0,8−1,4 mm, trigonus, shining, ± black, surface transversely rugose.

Marsh; peat-bog; temporary pool; grassy places near river; papyrus swamp; seasonal swamp grassland; drainage lines in grassland and bushland; pool edges; stream banks; on mud, sand or in standing water; 550−2750 m alt.

Namibia, S. Africa, Botswana, Swaziland, Lesotho; probably introduced into Nigeria.

Used to make mats, and also grown for this purpose.

Resembling *S. corymbosus* but nutlet transversely ridged.

S. rhodesicus (Podlech) Lye; Fl. Trop. E. Afr., Cyper.: 25, 2010; Lock in Kew Bull. 70/4: § 46: 3, 2015. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 55, 1983; Lisowski & Malaisse, Groupements végétaux des mares et des anses calmes des rivières du Plateau des Kundelungu / Plant communities of pools and backwaters of the Kundelungu Plateau, in Symoens, Exploration hydrobiologique du Bassin du Lac Bangweolo et du Luapula, Résultats scientifiques 18/1: pl. 3 p. 35, Cercle Hydrobiologique de Bruxelles, 1989; Browning in Kew Bull. 67: 60, 2012.

bas.: *Scirpus rhodesicus* Podlech

Perennial semi-terrestrial *and* submerged herb, tufted, entirely glabrous; culms 30−60 cm long, leafy except topmost part, 30−60 cm long, round, finely striped; lower leaves reduced to sheaths; these 2−3 cm long; upper leaves with long sheaths, blades linear, 6−10 cm × 1 mm; spikelet single, elliptic, 4−8 × 2−3 mm, on a 2−5 cm long peduncle, occasionally with 1−2 additional spikelets to form a cluster; bracts 2, leaf-like, the lower overtopping the culm, 1−1,5 cm long; nutlet trigonous, obscurely transversely ridged, shining. – The terrestrial "form" with compact rhizome.

Grows terrestrially in soft, wet mud of lake margins, until submerged by deepening water level; also rooted (occasionally floating due to uprooting by flood waters) submerged aquatic in water 0,9−1,5 m deep (for more details on terrestrial and aquatic forms, see Kew Bull. 67: 61, 2012); c. 870−1750 m alt.

Superficially similar to *Websteria confervoides*.

Morphology, growth form and habitat bear relationship to *Isolepis* (Browning, o.c. 62).

(**S. scirpoides** (Schrad.) Browning ("scirpoideus")) See under **S. subulatus** (Vahl) Lye below.

S. subulatus (Vahl 1805) Lye – We follow the species concept used by Lye & Thery in Fl. Gabon 44, Cyper.: 196−197, 2012. They treat *S. subulatus* in a wide sense, i.e. including *S. litoralis* (Schrad. 1806) Palla and *S. scirpoides* (Schrad. 1821) Browning. So did also, e.g., Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015, and César & Chatelain, Fl. ill. Tchad: 135, 2019. – See discussion and bibliographic references below.

Browning & al. (S. Afric. J. Bot. 60: 169−174, 1994) gave a synopsis of the characters used in the treatment of *Schoenoplectus litoralis – Sch. subulatus – Sch. scirpoides*. The group "is problematic in its morphological variability, some of which may be geographical in response to habitat conditions, including the fluctuating levels and salinity of the waters from which plants are perennial, rooted emergents… In *Sch. litoralis* s. l. florets are accompanied by plumose scale-like perianth segments. This character, which in Europe permitted immediate distinction from putative relatives with setulose bristles, probably over-emphasized differences to the neglect of similarities." The diagnostic characters used in distinguishing the taxa involved [incl. *Sch. scirpoides* (Schrad.) Browning] are: culm shape in transverse section considered as the most important single criterion; inflorescence branching and arrangement of spikelets on rays; spikelet shape; shape, texture and pubescence of glumes; achene size (Browning & al., o.c.: 170). As to the culm shape in transverse section these authors found that plants of more favourable habitats develop culms that are robust, terete and spongy. In less favourable situations the culms are shorter, less robust, less spongy, and terete to vaguely angular under the inflorescence. No plants with "acutely triangular" or triquetrous culms were found. Dried (herbarium) material has been modified during preparation, for instance shrinking. The conclusion given by Browning & al. (o.c.: 171): *Schoenoplectus scirpoides* is a coastal entity in southern Africa (map in S. Afric. J. Bot. 60: 171, 1994) distinguished from *S. subulatus* s. l., which is not known from coastal estuarine habitats.

Gordon-Gray (Cyperaceae in Natal, Strelitzia 2: 158, 1995) treated the three taxa involved under *Schoenoplectus litoralis*. She noted that "two elements are recognised within this species. In the Mediterranean region, SW Asia and China, plants have triquetrous culms; in Africa, India, Malesia, Micronesia, Australia, culms [are] terete, but trigonous just below inflorescence… There is, however, no consensus on the classificatory ranking to be adopted. Some workers recognise the African-Australian entity as a discrete species (*Schoenoplectus subulatus*) …; others give it a subspecific status (*S. litoralis* subsp. *subulatus*) …; yet others are unprepared to form opinion …". – "For Africa there has also been a tendency to differentiate between the Angolan and Namibian plants (western entity). The eastern entity (*Scirpus pterolepis* Kunth, or *S. litoralis* var. *pterolepis* C. B. Clarke) is said to have a more copiously branched inflorescence, and longer, oblong spikelets".

Referring to *Schoenoplectus scirpoides* we agree with the remark made by Darbyshire & al. (Plants of the Sudan & South Sudan: 116, 2015): in Flora of Tropical East Africa, Cyperaceae: 29, 2010, "the NE African material is treated as *S. scirpoides*, stating that all specimens have at least some ciliae near the apex of the glumes whilst in *S. subulatus* the glumes are glabrous. This seems a rather weak distinction and, in any case, the glumes of the single Sudanese specimen are glabrous."

The references given here are grouped according to the species name used by the respective authors. Under *Schoenoplectus litoralis* (subsp. *litoralis*): Simpson & Inglis in Kew Bull. 56: 336, 2001; Lisowski, Fl. Rép. Guinée 1: 411, 2009. – Icon.: Berhaut, Fl. ill. Sénégal 9: 319, 1988; Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 84, 2001; Kukkonen in Fl. Pakistan 206, Cyper.: 23, 2001. – Under *Sch. subulatus*, or *Sch. litoralis* subsp. *subulatus*, or

Sch. litoralis subsp. *thermalis*: Thulin, Fl. Somalia 4: 103, 1995; Simpson & Inglis in Kew Bull. 56: 336−337, 2001; Cook, Aquat. & wetland pl. south. Africa: 118, 2004; Müller in Syst. Geogr. Pl. 75: 245, 2005 (text on Sahelian seasonal lakes); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 123, 2010; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Berhaut, Fl. ill. Sénégal 9: 323, 1988; Troupin, Fl. Rwanda 4: 477, 1988; Browning & al. in S. Afric; J. Bot. 60: 172, 1944; Gordon-Gray, Cyper. Natal: 159, 1995 (*S. litoralis* s. l.; nutlet); Fl. Eth. & Eritrea 6: 398, 1997; Kukkonen in Fl. Pakistan 206, Cyper.: 23, 2001; Prasad & Singh, Sedges Karnataka (India): 307, 2002; Boulos, Fl. Egypt 4: 356, 2005; Fl. Gabon 44, Cyper.: 197, 2012; Fl. China, Ill. 23: 240, 2012. – Under *Sch. scirpoides*: Archer & Craven, Cyper. Namibia: 25, 2004 (as well as *Sch. subulatus*); Fl. Trop. E. Afr., Cyper.: 29−30, 2010. – Icon.: Browning & al. in S. Afric. J. Bot. 60: 172−173, 1994; Cook, Aquat. & wetland pl. south. Africa: 117, 2004.

bas.: *Scirpus subulatus* Vahl 1805.

syn.: *Sci. litoralis* Schrad. var. *subulatus* (Vahl) Chiov., and subsp. *subulatus* (Vahl) Wad. Khan; *Sci litoralis* sensu Ahti & al., non Schrad., in Ann. Bot. Fennici 10: 156, 1973; *Sci. litoralis* Schrad. subsp. *thermalis* (Trab.) Murb.; *Sci. thermalis* Trab. 1895; *Sci. pectinatus* Roxb. 1820; *Sci wardianus* J. R. Drummond; *Schoenoplectus litoralis* (Schrad.) Palla subsp. *subulatus* (Vahl) Soják 1972; *Sch. litoralis* subsp. *subulatus* (Vahl) T. Koyama 1985; *Sch. litoralis* var. *subulatus* (Vahl) Chiov.; *Sch. litoralis* subsp. *thermalis* (Trab.) S. S. Hooper 1976; *Pterolepis litoralis* (Schrad.) M. R. Almeida subsp. *subulatus* (Vahl) M. R. Almeida; *Schoenoplectus litoralis* (Schrad.) Palla subsp. *litoralis*; *Scirpus litoralis* Schrad., incl. var. *foliosus* Jahand., Maire & Weiller; *Pterolepis litoralis* (Schrad.) M. R. Almeida; *Schoenoplectus scirpoides* (Schrad.) Browning 1994, non *Scirpus scirpoideus* (Michx.) T. Koyama 1958; *Pterolepis scirpoides* Schrad. 1821; *Scirpus pterolepis* (Nees) Kunth; *Sci. litoralis* Schrad. var. *pterolepis* (Nees) C. B. Clarke 1894; *Malacochaete pterolepis* Nees 1835; *Scirpus subulatus* Vahl var. *capensis* Boeckeler; *Schoenoplectus litoralis* (Schrad.) Palla subsp. *thermalis* (Trab.) Murb. var. *pterolepis* (Nees) C. C. Townsend, Kew Bull. 15: 417, 1962; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb with short rhizome c. 2 mm ∅, stoloniferous; culms tufted, 0,6−4,5 m long, 2−12 mm ∅, basal part terete, the distal sometimes obtusely trigonous, sides convex, filled with pith; leaves, if present, to 1,4 m long (in water); blade to 30−70 cm long, keel and margins scabrous, apex attenuate, acute; inflorescence an apparently lateral anthela 2−7 cm long with single spikelets or umbels of spikelets of unequal length, 1−3 cm long; lowest bract mostly ± equalling the inflorescence; secondary branches with 3−8 solitary spikelets; these ovoid, 6−18 × 2−5 mm, (reddish) brown; perianth segments 4−6, plumose; nutlet smooth.

In or near open saline or fresh water to 2,7 m deep; lakes, riverine fringes; may be locally dominant; sandy, saline area, stony slope; 0−1900 m alt.

If *S. litoralis* and *S. subulatus* are considered as two elements, *S. litoralis* s. str. occurs in the Mediterranean region, SW Asia, Middle East, China, S Mongolia. *S. subulatus* occurs in Africa incl. N. Africa (Morocco, Algeria, Egypt), Namibia, S. Africa, Botswana; Madagascar, Comoros; Italy; Arabia, Asia from Iran – Pakistan, India, Sri Lanka, Thailand, New Guinea, Australia, Micronesia, Japan. In Australia scattered and possibly introduced (Wilson in Telopea 2: 160−161, 1981).

(**S. tabernaemontani** (C. C. Gmel.) Palla); Raynal in Adansonia, Sér. 2, 15: 107, 1975 (as *S. validus*); Clarke & Mannheimer, Cyper. Namibia: 95, 1999; Simpson & Inglis in Kew Bull. 56: 335 (as *S. lacustris* subsp. *validus*), 337−338, 2001; Pignotti in Webbia 58: 324−327, 326 (fig.), 2003 (Italy); Yano & al. in Acta Phytotax. Geobot. 60: 141, 2010; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 2010; Fl. China 23, Texts: 184, 2010; European Gard. Fl., ed. 2, 1: 414, 2011; Shiels & al. in Syst. Bot. 39: 141, 2014. – Icon.: Kukkonen in Fl. Pakistan 206, Cyper.: 17, 2001 (as *S. lacustris* subsp. *tabernaemontani*); Cook, Aquat. & wetland pl. south. Afr.: 119, 2004; Fl. China 23, Ill.: 241, 2012; Judd & al., Plant systematics, a phylogenetic approach, ed. 4: 310, 2016; Illustrated Cyperaceae of Korea: 475, 2016; Delay & al. in Bull. Soc. Bot. N. France 70: 68, 70−73, 2017 (details).

bas.: *Scirpus tabernaemontani* C. C. Gmel. 1805.

syn.: *Sci. validus* Vahl 1805; *Sci. lacustris* L. var. *tabernaemontani* (C. C. Gmel.) Döll; *Sci. lacustris* subsp. *tabernaemontani* (C. C. Gmel.) Syme 1870, and subsp. *glaucus* (Sm.) Hartman; *Schoenoplectus lacustris* (L.) Palla subsp. *validus* (Vahl) T. Koyama, and subsp. *tabernaemontani* (C. C. Gmel.) Á. Löve & D. Löve; *Sch. validus* (Vahl) Á. Löve & D. Löve; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb; rhizome creeping, 0,4−2 cm ∅, also developing stolons; culms loosely tufted or solitary, 0,4−2,7 m tall, 5−15 mm ∅, terete, finely papillose, waxy blue-green; leaves basal, 5−6, reduced to sheaths or rarely upper sheath with blade to10 cm long; inflorescence rarely simple, usually compound and spreading with 3 or more unequal rays terminating in umbels or panicles of 1−50 spikelets; lowermost bract 2−11 cm long, tip pointed; spikelets ovoid-oblong, 6−15 × 2−5 mm, densely many-flowered, reddish-brown; glumes boat-shaped, 3−4 × 2 mm, margins with dark red barbs; perianth bristles 4−6, margins with spinelike teeth; stigmas 2; nutlet biconvex, c. 2 mm long, smooth.

Streams; ditches; pools; swamps; often in water, also brackish.

Temperate and warm Eurasia E to Japan, in S to Turkey, Israel, Syria, Iran, Afghanistan, Pakistan; Australia; N., C. & S. America. – N. Africa (Morocco, Algeria, Tunisia); S. Africa, Namibia (sometimes considered to be introduced there).

Also used as an ornamental.

Natural hybrids with *S. triqueter* and *S. lacustris* reported by Yano & al. (l.c.). On a worldwide basis merges into *S. lacustris* (fide Cook, l.c.).

In tropical Africa reported from Sierra Leone (fide Pignotti, l.c.). The identity of the single specimen (Andrews Nº 276, 1937) requires confirmation (Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015).

Not mapped.

SYNONYMS:

Schoenoplectus articulatus (L.) Palla
= **Schoenoplectiella articulata**
cf. *articulatus* sensu Schäfer 2016 = **S-a patentiglumis**
brachyceras (Hochst. ex A. Rich.) Lye
= **Schoenoplectus corymbosus**
cernuus (Vahl) Hayek = **Isolepis cernua**
confusus (N. E. Br.) Lye, incl. subsp. *natalitius* Browning, and var. *rogersii* (N. E. Br.) Lye
= **Schoenoplectus muricinux**
corymbosus auct. non (Roth ex Roem. & Schult.) J. Raynal
= **Schoenoplectus heptangularis**
erectus (Poir.) Palla ex J. Raynal, incl. subsp. *raynalii* (Schuyler) Lye and subsp. *sinuatus* (Schuyler) Lye
= **Schoenoplectiella erecta**
erectus sensu Cherm. = **Schoenoplectiella oxyjulos**
fistulosus (Forssk.) Soják = **S-a articulata**
fluitans (L.) Palla = **Isolepis fluitans**
hooperae J. Raynal = **Schoenoplectiella hooperae**
inclinatus (Delile ex Barbey) Lye
= **Schoenoplectus corymbosus**
inclinatus (Asch. & Schweinf. ex Boiss.) Lye
= **Schoenoplectus corymbosus**
jacobi (C. E. C. Fisch.) Lye
= **Schoenoplectiella senegalensis**
junceus (Willd.) J. Raynal = **S-a juncea**
juncoides (Roxb.) Palla = **S-a juncoides**
lacustris (L.) Palla subsp. *tabernaemontani* (C. C. Gmel.) Á. Löve & D. Löve, and subsp. *validus* (Vahl) T. Koyama = **Schoenoplectus tabernaemontani**
lateriflorus (J. F. Gmel.) Lye
= **Schoenoplectiella lateriflora**
lateriflorus subsp. *laevinux* Lye = **S-a erecta** subsp. **erecta**
litoralis (Schrad.) Palla = **Schoenoplectus subulatus**
litoralis var. *subulatus* (Vahl) Chiov., and subp. *subulatus* (Vahl) Soják 1972 = **S-us subulatus**
litoralis subsp. *thermalis* (Trab.) S. S. Hooper
= **S-us subulatus**
litoralis subsp. *thermalis* var. *pterolepis* (Nees) C. C. Townsend 1962 = **S-us subulatus**
lupulinus (Nees) V. I. Krecz. = **Schoenoplectiella roylei**
maritimus (L.) Lye = **Bolboschoenus maritimus**
melanospermus (C. A. Mey.) Grossh.
= **Schoenoplectiella supina**
microglumis Lye = **S-a microglumis**
mucronatus (L.) Palla = **S-a mucronata**
muriculatus (Kük.) Browning
= **Schoenoplectus muricinux**
nobilis (Ridl.) Lye = **Bolboschoenus nobilis**
oxyjulos (S. S. Hooper) J. Raynal
= **Schoenoplectiella oxyjulos**
patentiglumis Hayas. = **S-a patentiglumis**
praelongatus (Poir.) J. Raynal
– See under **S-a praelongata**
proximus (Steud.) J. Raynal, incl. var. *botswanensis* Hayas.
= **S-a proxima**
quinquefarius (Buch.-Ham. ex Boeckeler) Palla
= **S-a roylei**
raynalianus U. Scholz = **S-a proxima**
rogersii (N. E. Br.) Lye = **Schoenoplectus muricinux**
roylei (Nees) Ovcz. & Czukav. = **Schoenoplectiella roylei**
scirpoides (Schrad.) Browning 1994
= **Schoenoplectus subulatus**
senegalensis (Hochst. ex Steud.) Palla ex J. Raynal
= **Schoenoplectiella senegalensis**
setaceus (L.) Palla = **Isolepis setacea**
supinus (L.) Palla = **Schoenoplectiella supina**
supinus subsp. *lateriflorus* (J. F. Gmel.) Soják 1972, and var. *lateriflorus* (J. F. Gmel.) T. Koyama 1978
= **S-a lateriflora**
validus (Vahl) Á. Löve & D. Löve
= **Schoenoplectus tabernaemontani**

SCHOENOXIPHIUM / *4*

Schoenoxiphium Nees in Linnaea 7: 531, 1832.

syn.: *Carex* section *Schoenoxiphium* Baillon, Hist. Pl. (Baillon): 345, 1894; called a monophyletic clade within *Carex* by the "Global Carex Group" (Bot. J. Linn. Soc. 179: 1−42, 2015).

Genus of some 20 grasslike species with terminal inflorescence, in E and SW Africa, Madagascar and the Arabian Peninsula, with centre of diversity in the E part of southern Africa (maps by Gehrke & al. in S. Afric. J. Bot. 78: 154, 2012; and by Villaverde & al. in Int. J. Plant Sci. 178: 322, 2017). Distinct from other *Cyperaceae* by the presence of exclusively unisexual flowers and by the arrangement of the pistillate flowers in single-flowered spikelets that are enclosed by the flask-like spikelet prophyll (utricle or perigynium); cf. Jiménez-Mejías & al. 2016b; Browning & Goetghebeur, Sedge genera Africa & Madagascar.: 76, 2017; Goetghebeur in K. Kubitzki, The families and genera of vascular plants IV: 187, 1998. Male flower 3-staminate; female with a 3-fid style; nutlet trigonous.

GEHRKE, B. & al. (2010). Chromosome number changes in the evolution of Schoenoxiphium (Cyperaceae). *Scripta Bot. Belg*. 46 (AETFAT XIX): 184.

GHERKE, B. & al. (2012). Unisexual flowers as a robust synapomorphy in Cariceae (Cyperaceae) ? Evidence for bisexual flowers in Schoenoxiphium. *S. Afric. J. Bot*. 78: 150−158.

GLOBAL CAREX GROUP (2015). Making Carex monophyletic (Cyperaceae, tribe Cariceae): a new broader circumscription. *Bot. J. Linn. Soc*. 179: 1−42 [26−29].

JIMÉNEZ-MEJÍAS, P. & al. (2016a). Megaphylogenetic specimen-level approaches to the Carex (Cyperaceae) phylogeny using ITS, ETS, and matK sequences: implications for classification. *Syst. Bot*. 41: 500−518.

JIMÉNEZ-MEJÍAS, P. & al. (2016b). Clarification of the use of the terms perigynium and utricle in Carex L. (Cyperaceae). *Syst. Bot*. 41: 519−528 [with summary of morphological terms].

KUKKONEN, I. (1983). The genus Schoenoxiphium (Cyperaceae). A preliminary account. *Bothalia* 14: 819−823.

KUKKONEN, I. (1986). 490−494. Schoenoxiphium. *In*: HILLIARD, O. M. & B. L. BURTT, Notes on some plants of southern Africa chiefly from Natal: XIII. *Notes Roy. Bot. Gard. Edinb*. 43: 345−405 [vide p. 364−366].

MOLINA, A. & al. (2012). A comparative study of the inflorescence in the genus Carex (Cyperaceae). *Syst. Bot*. 37: 365−381 [369].

STARR, J. R. & al. (2004). Phylogeny of the unispicate taxa in Cyperaceae tribe Cariceae I: Generic relationships and evolutionary scenarios. *Syst. Bot*. 29: 528−544.

VILLAVERDE, T. & al. (2017). New insights into the systematics of the Schoenoxiphium clade (Carex, Cyperaceae). *Int. J. Plant Sci*. 178: 320−329.

WATERWAY, M. J. & al. (2019). Phylogeny, species richness, and ecological specialization in Cyperaceae tribe Cariceae. *Bot. Rev*. 75: 138−159.

Schoenoxiphium lehmannii (Nees) Kunth ex Steud., non *Carex lehmannii* Drejer 1844; Naczi & Ford, Sedges: Uses…: 266, 2008 (inflorescence); Fl. Trop. E. Afr., Cyper.: 417−418, 2010; Global Carex Group (2015): 28−29. – Icon.: Engler, Pflanzenreich IV. 20/38: 29, 1909 (detail; as *Sch. sparteum* var. *lehmannii*); Haines & Lye, Sedges & rushes E. Afr.: 366−367, 1983; Gordon-Gray, Cyper. Natal: 167, 1995 (utricle); Fl. Eth. & Eritrea 6: 501, 1997; Burrows & Willis, Pl. Nyika Plateau, Malawi: 304, 2005; Browning & Goetghebeur, Sedge genera Africa & Madag.: 76, 2017; Villaverde & al. in Int. J. Pl. Sci. 178: 325, 2017 (fig. 2/, as *Carex uhligii*).

bas.: *Uncinia lehmannii* Nees

syn.: ***Carex uhligii*** K. Schum. ex C. B. Clarke; *Kobresia lehmannii* (Nees) T. Koyama; *Schoenoxiphium sparteum* (Wahlenb.) C. B. Clarke var. *lehmannii* Kük.

Perennial *slender*, tufted, leafy, greenish yellow herb 30−90 cm tall with short rhizome; culm base slightly swollen, covered with dark fibrous remains of old leaf-bases; leaves 15−40 cm long, 2−5 mm wide, flat, margin and some veins scabrid; sheaths pale green to reddish, 1−2 cm long; inflorescences lax, slender, borne at most nodes with 1−2 branches, 0,6−2 cm long, axes very scabrid; some male flowers at each branch tip with 2−5 female flowers below; utricles brown, c. 5 mm long with very distinct longitudinal ridges; nutlet yellowish, 3 mm long.

Open areas of forest; grassland; mist forest; stream sides; termite mounds; 1050−2800 m alt.

S. rufum Nees 1835, incl. var. *pondoense* Kük., Fl. Trop. E. Afr., Cyper.: 420, 2010 (as *Sch. ludwigii*); Gereau & al., Lake Nyasa florist. checklist: 48, 2012 (idem); Global Carex Group (2015): 27 (details; as *Carex ludwigii*). – Icon.: Clarke, Ill. Cyper.: pl. 141/1−6, 1909; Kükenthal in Engler, Pflanzenreich IV. 20/38: 29, 1909 (details); Haines & Lye, Sedges & rushes E. Afr.: 368, 1983; Gordon-Gray, Cyper. Natal: 169, 1995 (utricle); Jiménez-Mejías & al. (2016): 520 (details; as *Carex ludwigii*).

syn.: *Sch. dregeanum* Kunth 1837, non *Carex dregeana* Kunth; *Sch. ludwigii* Hochst. 1845; *Archaeocarex rufus* (Nees) Fedde & J. Schust.; *A. dregeana* (Kunth) Pissjauk.; *Carex rufa* (Nees) Baill. 1894, nom. illeg., non Lam. 1779, nec Schrank 1789; *C. buchananii* C. B. Clarke 1894, nom. nud.; *Kobresia rufa* (Nees) T. Koyama; *K. dregeana* (Kunth) T. Koyama; ***Carex ludwigii*** (Hochst.) Luceño & Martín-Bravo; *Schoenoxiphium burkei* C. B. Clarke (sensu Govaerts & Simpson, World Checklist Cyperaceae: 672, 2007).

Perennial robust herb; culms 60−110 cm tall, c. 2 mm ∅; leaves 20−36 cm long, 3−6 mm wide, scabrid; inflorescence fairly dark brown, of 4−6 narrow panicles, one from each of the upper leaf sheaths, c. 5 cm long, 2,5 cm wide, peduncles 3−12 cm long; spikelets linear, 10 × 2−3 mm, glumes often spreading; main inflorescence branches with 20−40 female flowers; male part of spikelet 6 mm long; utricle 2,5−4 mm long; nutlet c. 2,5 × 1,5 mm.

Moist thickets on bank of small river; by streams in marsh; 2100−2600 m alt.

S. Africa, Lesotho.

S. schimperianum (Boeckeler) C. B Clarke; Fl. Trop. Afr. 8: 518, 1902; Fl. Trop. E. Afr., Cyper.: 418−419, 2010 (as *Sch. sparteum*, p.p., quoad syn. *Carex schimperiana* Boeckeler 1876, etc.); Global Carex Group (2015): 28. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 367, 1983 (as *Sch. sparteum*); Gordon-Gray, Cyper. Natal: 165, (utricle; as *Sch. bracteosum*), 170 (utricle, as *Sch. schimperianum*), 1995; Fl. Eth. & Eritrea 6: 502, 1997 (as *Sch. sparteum*); Villaverde & al. in Int. J. Pl. Sci. 178: 325 (fig. 2 p), 322 (map), 2017.

bas.: ***Carex schimperiana*** Boeckeler 1876.

syn.: *C. densenervosa* Chiov. 1911; *Schoenoxiphium bracteosum* Kukkonen 1986; *Sch. sparteum* (Wahlenb.) C. B. Clarke var. *schimperianum* (Boeckeler) Kük.

Perennial tufted herb 20−90 cm tall with short ascending stolons; culms rounded, 1−1,5 mm ∅, bases covered by fibrous leaf sheath remains; leaves up to half length of the culm, 20−30 cm long, 3−4 mm wide, flat; inflorescence narrow with branches formed along the culm, the lower ones remote; bracts filiform, as long as or longer than inflorescence branches; spikelets oblong, c. 9 × 6 mm, the uppermost with 3−5 utricles and a small scarious yellow male termination; utricle 3−4 mm long, obovate; nutlet 2−2,5 × 1,3 mm.

Damp slopes; stream banks; crevices of rock flushes; forest edges; grassland; in grass tussocks on hillside; growing usually in association with grasses; c. 1500−2700 m alt.

SCHOENOXIPHIUM SCHIMPERIANUM

S. Africa, Lesotho, Swaziland; Yemen (Wood, Handbook Yemen flora: 122−123, 1997, as *Sch. sparteum*).

Closely allied to *Sch. sparteum* which is, however, smaller in stature and in size of most of the floral organs.

S. sparteum (Wahlenb. 1803) C. B. Clarke, excl. var. *lehmannii* Kük. (= *S. lehmannii*) and var. *schimperianum* (Boeckeler) Kük. (= *S. schimperianum*); Kukkonen in Bothalia 14: 822−823, 1983 p.p., excl. syn. *Sch. schimperianum*, *Carex schimperiana*; Starr & al. (2008) Phylogeny of the unispicate taxa in Cyperaceae tribe Cariceae II: The limits of Uncinia, in: Naczi & Ford, Sedges: Uses…: 267, 2008; Global Carex Group (2015): 28. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 368, 1983 (as *Sch. caricoides*); Gordon-Gray, Cyper. Natal: 172, 167 (utricle, *Sch. caricoides*), 170 (idem, *Sch. sparteum*); Fl. Trop. E. Afr., Cyper.: 419, 2010; Villaverde & al. in Int. J. Pl. Sci. 178: 325 (fig. 2 o), 322 (map), 2017.

bas.: ***Carex spartea*** Wahlenb. 1803.

syn.: *Carex spartea* Thunb. 1811, nom. illeg.; *C. indica* Schkuhr 1801, nom. illeg., non L., etc.; *C. sprengelii* Boeckeler 1876, nom. illeg., *Uncinia spartea* (Wahlenb.) Spreng. 1826; *U. spartea* Nees 1835, nom. illeg.; *U. sprengelii* Nees 1835, nom. superfl.; *Archaeocarex spartea* (Wahlenb.) Pissjauk.; *Kobresia spartea* (Wahlenb.) T. Koyama; *Carex dregeana* Kunth, incl. var. *major* C. B. Clarke; *C. esenbeckiana* Boeckeler 1876, nom. superfl.; *C. bolusii* C. B. Clarke; *Schoenoxiphium caricoides* C. B. Clarke, incl. var. *major* (C. B. Clarke) C. B. Clarke; *Sch. kunthianum* Kük.; *Archaeocarex kunthiana* (Kük.) Pissjauk.; *Kobresia kunthiana* (Kük.) T. Koyama

Perennial tussocky herb; rhizome short, much-branched, covered by fibrous remains of old scales; culms 15−50 cm tall, 1−3 mm ∅, triangular; leaves yellow-green, blades 10−30 cm long, 2−5 mm wide, flat, margins and veins densely scabrous, sheaths 2−4 cm long, wide; inflorescence branches usually borne singly at each node of culm; partial units pyramidal with conspicuous bracts; branches 0,5−6 cm long, flattened, densely scabrous, the upper hidden by leaf-sheaths; each spike (c. 1 cm long) with a few male flowers at top and 4−10 female below; utricle elliptic, c. 2,8 × 1,4 mm; nutlet reddish-brown, densely papillose.

Secondary grassland; forest edges; damp shaded cliffs; 1800−2100 m alt.

S. Africa, Lesotho, Swaziland; Madagascar.

SYNONYMS:

Schoenoxiphium bracteosum Kukkonen
= **Schoenoxiphium schimperianum**
burkei C. B. Clarke sensu Govaerts & Simpson 2007
= **Sch. rufum**
caricoides C. B. Clarke, incl. var. *major* (C. B. Clarke) C. B. Clarke = **Sch. sparteum**
dregeanum Kunth 1837 = **Sch. rufum**
kunthianum Kük. = **Sch. sparteum**
ludwigii Hochst. 1845 = **Sch. rufum**
sparteum (Wahlenb.) C. B. Clarke var. *lehmannii* Kük.
= **Sch. lehmannii**
sparteum var. *schimperianum* (Boeckeler) Kük.
= **Sch. schimperianum**

SCHOENUS / *1*

Described by Linnaeus (1753) with 9 species, most of which have since been transferred to other genera. But *Schoenus* has been recognised and also expanded by later authors. It has been subject to few phylogenetic studies and has been under-sampled according to Musili & al. in Austral. Syst. Bot. 29: 265, 2016. Since then further studies including *Tetraria* and *Epischoenus* by Elliott & Muasya (2017 and 2019) have expanded the genus *Schoenus*, this genus thus comprising c. 138 species, "mostly distributed in the southern hemisphere locations of Africa, Australia, New Zealand, South-east Asia and South America, with a few species in Europe, the Americas and Caribbean Islands" (cf. also Elliott & Muasya, 2019).

It can be added that a study by Larridon & al. (2018) proposed to conserve the name *Tetraria*, and resulted in a redelimitation of *Tetraria*.

Our compilation follows the traditional concept with *one* species present in tropical Africa. *Schoenus* is a cosmopolitan genus with c. 80 species according to Boulos, Fl. Egypt 4: 402, 2005. The key present in Flora of China, Texts 23: 166, 2010, gives the following main characters: nutlets trigonous; glumes distichous, middle glumes with flowers, lowest empty (cf. also Goetghebeur in K. Kubitzki, ed., The families and genera of vascular plants IV: 175−176, 1998).

ELLIOTT, T. L. & A. M. MUASYA (2017). Taxonomic realignment in the southern African Tetraria (Cyperaceae, tribe Schoeneae; Schoenus clade). *S. Afric. J. Bot*. 112: 354−360 [p. 356−358].

ELLIOTT, T. L. & A. M. MUASYA (2018). A taxonomic revision of Schoenus compar – Schoenus pictus and allies (Cyperaceae, tribe Schoeneae) with three new species described from South Africa. *S. Afric. J. Bot*. 114: 303−315.

ELLIOTT, T. L. & A. M. MUASYA (2019). Three new species and a new combination among Southern African Schoenus (Cyperaceae, tribe Schoeneae). *Phytotaxa* 401: 267−275.

ELLIOTT, T. L. & al. (2019). A taxonomic revision of Schoenus cuspidatus and allies (Cyperaceae, tribe Schoeneae) – Part 1. *S. Afric. J. Bot*. 121: 519−535.

LARRIDON, I. & al. (2018). Revised delimitation of the genus Tetraria, nom. cons. prop. (Cyperaceae, tribe Schoeneae, Tricostularia clade). *S. Afric. J. Bot*. 118: 18−22.

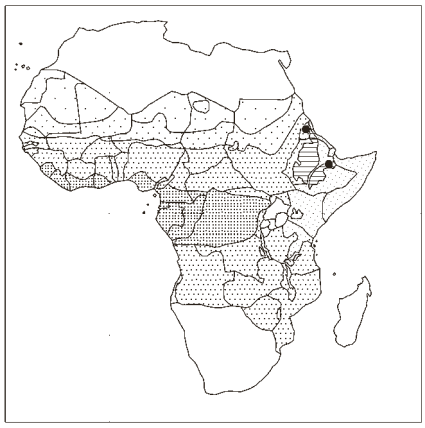
MUSILI, P. M. & al. (2016). Schoenus (Cyperaceae) is not monophyletic based on ITS nrDNA sequence data. *Austral. Syst. Bot*. 29: 265−283.

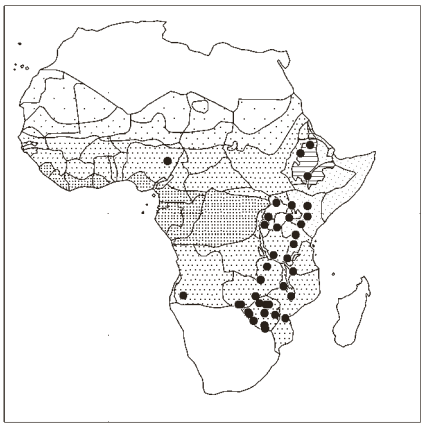
SEMMOURI, I. & al. (2019). Phylogeny and systematics of Cyperaceae, the evolution and importance of embryo morphology. *Bot. Rev*. 85: 1−39.

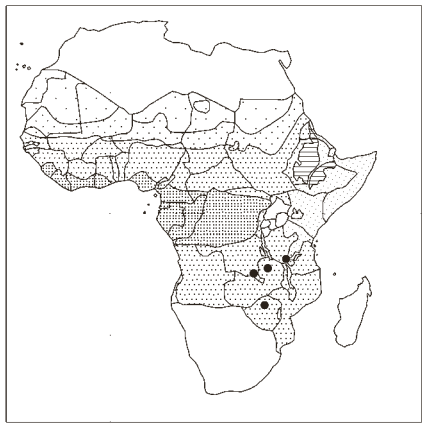
Schoenus nigricans L.; Vrijdaghs & al. in Aliso 23: 204−209, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 124, 2010. – Icon.: Thulin, Fl. Somalia 4: 146, 1995; Gordon-Gray, Cyper. Natal: 173, 174 (nutlet), 1995; Fl. Eth. & Eritrea 6: 493, 1997; Kukkonen in Fl. Pakistan 206, Cyper.: 156, 2001; Boulos, Fl. Egypt 4: 403, 2005; Amini Rad, Fl. Iran 71: 138, 2011; Elliott & Muasya (2017): 357 (incl. map); Browning & Goetghebeur, Sedge genera Afr. & Madag.: 77, 2017; Ghazanfar, Fl. Oman 4: ill. 52, 2018; César & Chatelain, Fl. ill. Tchad: 114, 2019.

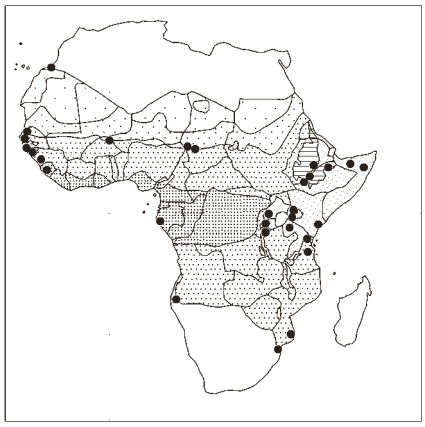
syn.: *Schoenus aggregatus* Thunb.; *Sch. hypomelas* Spreng.; *Chaetospora nigricans* (L.) Kunth; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

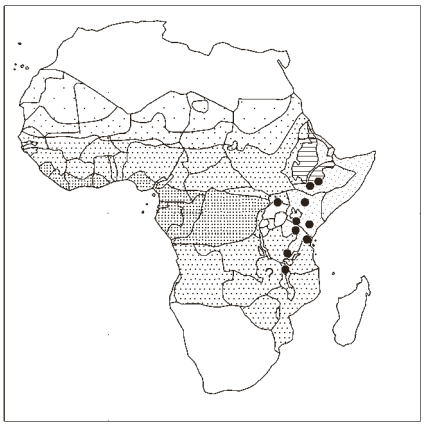
Densely tussocky perennial herb with few-many culms and numerous leafy shoots; rhizome short producing tillers; culms node-less, 15−70 cm tall, 0,5−2 mm ∅, almost terete with many rounded ridges, glabrous; leaves basal, c. 1/2 of culm length; sheaths chestnut-brown to reddish-brown, often glossy; blades mostly 10−40 cm long, 0,4−1 mm wide, flat, somewhat canaliculate, hard, wiry; inflorescence a head 0,5−2 × 1−1,5 cm, with 5−20 crowded spikelets sheathed by 2 bracts, the lower with a long

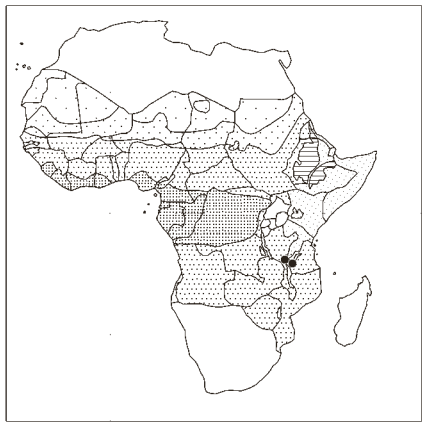

Schoenoplectus lacustris
subsp. lacustris

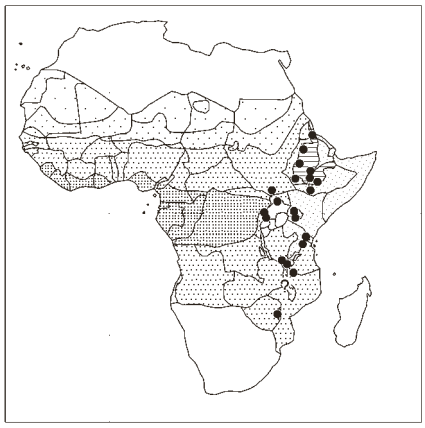

Schoenoplectus muricinux

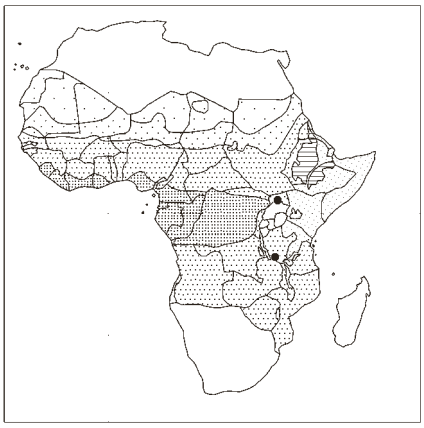

Schoenoplectus rhodesicus

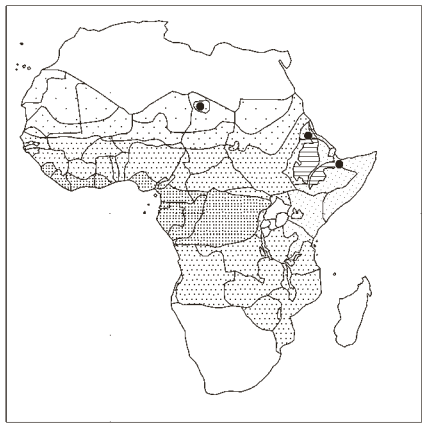

Schoenoplectus subulatus
incl. S. litoralis, S. scirpoides

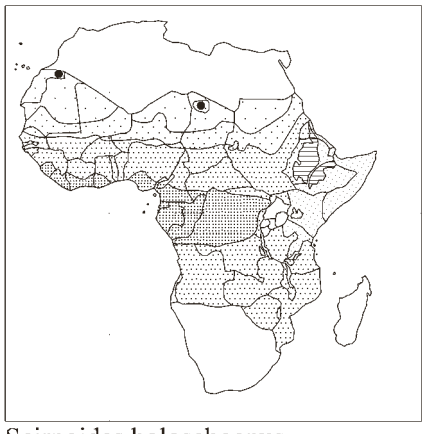

Schoenoxiphium lehmannii

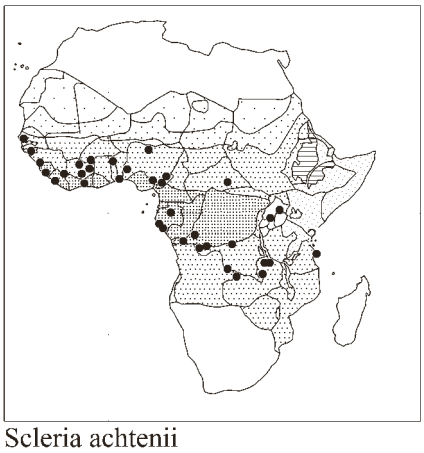

Schoenoxiphium rufum

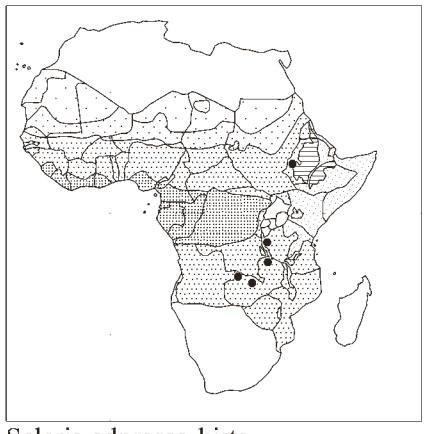

Schoenoxiphium schimperianum


Schoenoxiphium sparteum


Schoenus nigricans


Scirpoides holoschoenus


Scleria achtenii


Scleria adpresso-hirta

SCHOENUS NIGRICANS

attenuate blade-like portion, the upper similar but much shorter; spikelets dark blackish, fusiform, compressed, 5−15 × 1−2 mm; glumes distichous, keeled, lowest 2 sterile, following 2−3 fertile, uppermost sterile; rachilla zig-zag; nutlet ± globose, c. 1,5 × 1 mm, glossy, white.

Seasonally wet places, wet peaty places; often grassland; tuffs; c. 1000−2900 m alt.

Sub-cosmopolitan. N. Africa – S Egypt; S. Africa (introduced); W Europe; Sinai, Palestine, Yemen (Wood, Handbook Yemen flora: 332, 1997), Oman, Saudi Arabia, Turkey, Caucasus, Iran, Afghanistan, Pakistan, W Himalaya; N. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 294, 2012). Not in India (Indian J. Forestry 32: 685, 2009).

SYNONYMS:

Schoenus aggregatus Thunb. = **Schoenus nigricans**
aphyllus Vahl 1805 = **Actinoschoenus thouarsii**
aristatus Nees ex Kunth 1837, non Thunb. 1794 = **Tetraria cuspidata**
confervoides (Poir.) Willd. ex Kunth = **Websteria confervoides**
corymbosus (L.) Pers. = **Rhynchospora corymbosa**
cuspidatus Benth. = **Tetraria cuspidata**
cuspidatus Rottb. 1773 = **T. cuspidata**
cyperoides Retz. = **Abildgaardia triflora**
cyperoides Sw. 1788 = **Rhynchospora holoschoenoides**
dactyloides Vahl = **Carpha glomerata**
erinaceus Ridl. = **Sphaerocyperus erinaceus**
erraticus Hook. f. = **Bulbostylis erratica**
filiformis Lam. 1791 = **Ficinia filiformis**
flexuosus Steud. ex Kunth = **Tetraria cuspidata**
glomeratus Thunb. = **Carpha glomerata**
holoschoenoides Rich. 1792 = **Rhynchospora holoschoenoides**
hypomelas Spreng. = **Schoenus nigricans**
junceus Willd. = **Schoenoplectiella juncea**
lacustris (L.) Bernh. = **Schoenoplectus lacustris**
lithospermus (L.) L. = **Scleria lithosperma**
loreus (Nees) Kuntze = **Tetraria cuspidata**
macrostachyus Noë ex Rchb. = **Bolboschoenus maritimus** subsp. **maritimus**
mariscus L. = **Cladium mariscus**
maritimus Lam. = **Cyperus capitatus**
mucronatus L. = **Cyp. capitatus**
pilosus Willd. = **Bulbostylis pilosa**
ruber Lour. = **Rynchospora rubra**
rugosus Vahl 1798 = **Rh. rugosa**
spadiceus (Lam.) Vahl 1805 = **Nemum spadiceum**
triflorus (Vahl) Poir. = **Rhynchospora triflora**
tuberosus Burm. f. = **Cyperus rotundus**

(SCIRPIDIELLA)

Scirpidiella fluitans (L.) Rauschert = **Isolepis fluitans**
graminoides (R. W. Haines & Lye) Rauschert = **I. graminoides**
kilimanjarica (R. W. Haines & Lye) Rauschert = **I. kilimanjarica**
ruwenzoriensis (R. W. Haines & Lye) Rauschert = **I. ruwenzoriensis**

(SCIRPIDIUM)

Scirpidium nigrescens Nees = **Eleocharis nigrescens**

(SCIRPOCYPERUS)

Scirpocyperus septentrionalis Montandon = **Bolboschoenus maritimus**

(SCIRPODENDRON)

Scirpodendron buecheri Engl.
= errore pro **Schoenodendron buecheri**
buecheri Engl. = **Microdracoides squamosa**
ghaeri (Gaertn.) Merr.
– See under **Hypolytrum pahiense** above

SCIRPOIDES / *1*

Scirpoides Ség. 1754; syn.: *Holoschoenus* Link 1827; *Scirpus* sect. *Holoschoenus* (Link) W. D. J. Koch 1844.

Huygh & al. (in Taxon 59: 1888, 2010) wrote: "*Schaenoides*" and "*Scirpoides*", as used by Rottbøll (Descr. Pl. Rar.: 14, 27. 1772) to indicate unnamed genera resembling *Schoenus* and *Scirpus*, which he stated (on p. 7) that he intended to name later, are token words and not generic names. These unnamed genera were later legitimately named *Kyllinga* Rottb. and *Fuirena* Rottb.

Genus of 3 species, from the Canary Isl. to W Himalaya; N. Africa, Mauritania, Chad; Namibia, S. Africa, Botswana, Swaziland. *S. holoschoenus* (with 3 subspecies) in our area; *S. burkei* (C. B. Clarke) Goetgh., Muasya & D. A. Simpson, and *S. varia* Browning in southern Africa only.

"*Scirpoides* is morphologically intermediate between *Ficinia* Schrader and *Isolepis* R. Br. … An overtopping bract is a criterion of *Scirpoides* ('primary bracts culm-like, lowermost bract erect') … unlike in *Scirpus*, where the primary bracts are leaf-like and spreading … Another criterion of generic significance is embryo structure at the time of dissemination" (Browning & Gordon-Gray in S. Afric. J. Bot. 77: 506−507, 2011).

Scirpoides species are perennial with a woody rootsystem, culms are nodeless, inflorescence anthelate, perianth absent; the embryo is of *Cyperus* type (Muasya & al. in Syst. Bot. 26: 343, 2001). See also general descriptions by Goetghebeur in K. Kubitzki, The families and genera of vascular plants IV: 169, 1998; and by Browning & Goetghebeur, Sedge genera of Africa and Madagascar: 78, 2017.

DESFAYES, M. (2004). The specific status of Cyperus badius and the subspecies of Scirpoides holoschoenus (Cyperaceae), with special reference to Sardinia. *Flora Mediterr*. 14: 173−188.

GARCÍA-MADRID, A. S. & al. (2015). Towards resolving phylogenetic relationships in the Ficinia clade and description of the new genus Afroscirpoides (Cyperaceae: Cypereae). *Taxon* 64: 688−702.

MUASYA, A. M. & al. (2014). Contrasting diversification strategies in the Ficinia clade (Cyperaceae): wide dispersal of aquatic/therophytic Isolepis versus localized rapid Pliocene radiation of resprouting Ficinia. *Scripta Bot. Belg*. 52 (AETFAT XX): 294.

Scirpoides holoschoenus (L.) Soják; Simpson & Inglis in Kew Bull. 56: 339, 2001; Förther & Podlech in Sendtnera 8: 46, 2002 (subsp. *globifera*); Cafferty & Jarvis in Taxon 53: 180, 2004 (typification); Kukkonen in Fl. Pakistan 206, Cyper.: 33, 2001; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 124, 2010 (incl. *S. romanus*); Mateos & Valdes in Lagascalia 30: 328, 2010. – Icon.: Chaudhary, Fl. Kingd. Saudi Arabia ill. 3: 85, 2001; Pignotti in Webbia 58: 316, 2003 (in Italy); Desfayes (2004): 174−178 (with map Europe); Boulos, Fl. Egypt 4: 358, 2005; Vrijdaghs & al. in Ann. Bot. 96: 168, 2005 (floral details); Amini Rad, Fl. Iran 71: 36, 2011; Anrys & Saintenoy-Simon in Adoxa 76−77: 5, 2013; César & Chatelain, Fl. ill. Tchad.: 137, 2019.

SCIRPOIDES HOLOSCHOENUS

bas.: *Scirpus holoschoenus* L. 1753.

syn.: *Isolepis holoschoenus* (L.) Roemer & Schult.; *Cyperus holoschoenus* (L.) Missbach & E. H. L. Krause 1900 nom. illeg., non R. Br. 1810; *Holoschoenus vulgaris* Link

Perennial, tussocky herb, with short, woody rhizome producing stolons; culms to >1 m long, 0,8−3,5 mm ∅, smooth, terete or trigonous, scabrous above, greyish-green; leaf sheath 3−15 cm long, from rather soft to rigid, greyish-brown or reddish-brown, scarious side conspicuously veined; blade canaliculate, greyish-green, margins scabrous, apex flat, obtuse, scabrous; inflorescence of 1−100 or more globose heads of congested spikelets; primary branches to >10 cm; secondary branches to 3 cm; heads 0,3−1,5 cm ∅, of 6−40 tightly congested spikelets, these ± globose, 1,5−4 × 1−2 mm, with 10−30 glumes (keeled, mucronate).

Damp sandy areas; wadi banks; springs; ? up to 2200 m alt. (Chad, Tibesti).

Europe to W Himalaya, N Africa (subsp. **holoschoenus**); Canary Isl., Sardinia, N Africa, Chad, Iran (subsp. **globifera**); S. Africa (subsp. **thunbergii**).

A much variable species. 3 subspp. are recognized: – subsp. **globifera** (L. f.) Soják [bas.: *Scirpus globifer* L. f.; syn.: *Holoschoenus globifer* (L. f.) Rchb. 1830; *H. globiferus* (L. f.) A. Dietr.; *Scirpus holoschoenus* var. *globiferus* (L. f.) Parl., and subsp. *globiferus* (L. f.) Husn., and var. *hayekii* Maire, Bull. Soc. Hist. Nat. Afr. N. 22: 70, 1931; *Scirpoides globifera* Steud.; *Isolepis globulifera* Steud.], with many globose heads and spikelets ovoid, 2−4 × 2−3 mm; in the Canary Isl. on banks of rivers and ditches, 200−500 m alt. (fig. in T. Muer & al., Die Farn- und Blütenpflanzen der Kanarischen Inseln: 1141, 2016); – subsp. **holoschoenus** [syn.: *Scirpus romanus* L.; *S. holoschoenus* var. *romanus* (L.) Sm., and subsp. *romanus* (L.) Matéo & Figuerola; *Scirpoides romana* (L.) Soják; *Scirpus australis* L.; *S. holoschoenus* subsp. *australis* (L.) Arcang.; *Holoschoenus romanus* var. *australis* (L.) Bech., and subsp. *australis* (L.) Greuter; *Scirpoides holoschoenus* subsp. *australis* (L.) Soják; etc.], often split into 2 entities cited as subspecies (*holoschoenu*s and *australis*, respectively; according to Desfayes (l.c.) subsp. *holoschoenus* is recognized by its short, rigid and spiny bract, and its robust culms, whereas subsp. *australis* has only 1−10 flower heads, stems thinner and shorter, and a long flexible bracts >15−64 cm long (figs. p. 176, 178; and a map showing the geographical areas p. 174), subsp. *holoschoenus* occurring in W Europe incl. France, subsp. *australis* E of that area, incl. Germany, Italy and E-wards; – subsp. **thunbergii** (Schrad.) Soják [bas.: *Isolepis thunbergii* Schrad. 1821; syn.: *Scirpus holoschoenus* Thunb. 1811, nom. illeg., non L. 1753; *Holoschoenus thunbergii* (Schrad.) A. Dietr.; *Scirpus holoschoenus* var. *thunbergii* (Schrad.) C. B Clarke; etc.] in S. Africa; pseudovivipary observed by Gordon-Gray & al. in S. Afric. J. Bot. 75: 166, 2009. – For further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

"A very distinctive sedge, easy to cultivate and tolerant of relatively dry soils, sometimes grown as 'Variegatus', with alternate rings of green and yellow tissue on leaf and stem" (European Garden Flora, ed. 2, 1: 414, 2011). – Fibres also used as tying material.

SYNONYMS:

Scirpoides globifera Steud.
= **Scirpoides holoschoenus** subsp. **globifera**
holoschoenus (L.) Soják subsp. *australis* (L.) Soják
= **S. holoschoenus** subsp. **holoschoenus**
romana (L.) Soják = **S. holoschoenus** subsp. **holoschoenus**

(SCIRPUS)

Scirpus Tourn. ex L. 1753, nom. cons.

Muasya & al. (S. Afric. J. Bot. 78: 104−115, 2012) described a new genus, *Dracoscirpoides* Muasya, in order to accommodate two "aberrant" but common South African species known since at least a century, viz. *Scirpus falsus* C. B. Clarke and *S. ficinioides* Kunth. *Scirpus* was described by Linnaeus to "encompass cyperaceus species with terete spikelets, spirally arranged glumes, and bisexual flowers with or without perianth parts" (Muasya & al., o.c.: 104). However, Linnaeus's genus was heterogenous, and "the 24 species he recognized have subsequently been placed in 12 genera … Currently, *Scirpus sensu stricto* includes perennials with few to many-noded culms, (0−)3−6 perianth parts ["called bristles"], and the presence of a *Fimbristylis*-type of embryo". These authors continue: "*Scirpus sensu stricto* is predominantly holoarctic with some occurrence in other temperate areas outside Africa."

Verloove (Willdenowia 44: 51−55, 2014) wrote: "As currently circumscribed, *Scirpus* is a genus of c. 35 subcosmopolitan species … most diverse in North America, where 18 species occur … Only two species are originally native in Europe …: *S. radicans* Schkuhr and *S. sylvaticus* L.". Pignotti (Webbia 58: 301−308, 2003) presented these two species for Italy with line drawings and maps of distribution.

In a study of Korean *Scirpus* L. s. l., Jung & Choi (J. Plant Biol. 54: 409−424, 2011) summarized this genus as follows: it comprises approximately 160 species in the world and is an herbaceous aquatic or wetland plant. In *Scirpus* s. str. these authors enumerate 5 species in Korea, among others *S. wichurae* Boeckeler ("wichurai"), its variety *asiaticus* (Beetle) T. Koyama ex W. T. Lee is cited from Benin (Africa) in the World Checklist of Selected Plant Families, Cyperaceae (Roy. Bot. Gard. Kew, version 2012).

However, this plant is not mentioned by Akoègninou & al. (Flore analytique du Bénin, 2006).

It figures under *Scirpus* in the World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, 2019. In flora of China, Texts, 23: 172−173, 2010, Africa is not mentioned for the range of distribution given.

A note referring to *Scirpus* "*verrucosulus*" (Nees) Steudel (= **Isolepis cernua** var. **setiformis**) in Fl. W. Trop. Afr., ed. 2, 3/2: 311, 1972, figures at the end of **Isolepis cernua** above.

LÉVEILLÉ-BOURRET, E. & J. R. STARR (2019). Molecular and morphological data reveal three new tribes within the Scirpo-Caricoid clade (Cyperoideae, Cyperaceae). *Taxon* 68: 218−245.

SYNONYMS:

Scirpus abnormalis (C. B. Clarke) T. Koyama
= **Fuirena abnormalis**
acutangulus Roxb. = **Eleocharis acutangula**
aggregatus Steud. ex C. B. Clarke 1894
= **Ficinia filiformis**
angolensis C. B. Clarke = **Nemum angolense**
angolensis var. *briziformis* (Hutch.) S. S. Hooper
= **N. spadiceum**
angolensis var. *megastachyum* Cherm.
= **N. megastachyum**
annuus All. = **Fimbristylis dichotoma** subsp. **dichotoma**
antarticus sensu Vahl 1805, non L. = **Bulbostylis barbata**
antipodus V. J. Cook = **Isolepis sepulcralis**
arenarius (Nees) Boeckeler = **Bulbostylis humilis**
arenarius var. *setiformis* Benth. = **Isolepis cernua** var. **setiformis**
articulatus L., incl. var. *major* Boeckeler
= **Schoenoplectiella articulata**

articulatus var. *stramineus* Engl., and var. *tenuis* Roth = **S. senegalensis**
atropurpureus Retz. = **Eleocharis atropurpurea**
atrosanguineus Boeckeler = **Bulbostylis atrosanguinea**
aureiglumis S. S. Hooper = **Schoenoplectiella juncea**
australis L. = **Scirpoides holoschoenus** subsp. **holoschoenus**
barbatus Rottb. = **Bulbostylis barbata**
bisumbellatus Forssk. = **Fimbristylis bisumbellata**
bivalvis Lam. = **F. bivalvis**
boeckelerianus Schweinf. = **Bulbostylis boeckeleriana**
brachyceras Hochst. ex A. Rich. = **Schoenoplectus corymbosus**
brachyceras auct., non Hochst. ex A. Rich. = **S. heptangularis**
breviculmis (Kunth) Boeckeler = **Bulbostylis humilis**
briziformis Hutch. = **Nemum spadiceum**
bulbostylidioides in Fl. W. Trop. Afr., ed. 2, 3/2: 309, 1972 = **N. bulbostyloides**
bulbostyloides S. S. Hooper = **N. bulbostyloides**
burkei (C. B. Clarke) K. Schum. = **Bulbostylis contexta**
caducus Delile = **Eleocharis caduca**
calolepis (K. Schum.) Kuntze = **Fuirena ochreata**
capitatus L. 1753 = **Eleocharis geniculata**
caribaeus Rottb. = **E. geniculata**
cephalotes Jacq. 1771 = **Kyllinga nemoralis**
cernuus Vahl = **Isolepis cernua**
cernuus var. *subtilis* (Kunth) C. B. Clarke = **I. sepulcralis** or **I. tenuissima**
chaetarius (Roem. & Schult.) Spreng. = **Eleocharis retroflexa** subsp. **chaetaria**
chinensis Osbeck = **Lipocarpha chinensis**
chlorostachyus Levyns = **Isolepis sepulcralis** or **I. tenuissima**
ciliaris L. = **Fuirena ciliaris** fa. **ciliaris**
ciliaris Pers. 1805 = **F. pubescens** var. **pubescens**
ciliaris Rottb. = **F. ciliaris** fa. **ciliaris**
cinnamomeus Boeckeler = **Bulbostylis schoenoides**
coerulescens (Steud.) Kuntze = **Fuirena coerulescens**
coleotrichus (Hochst. ex A. Rich.) Boeckeler = **Bulbostylis coleotricha**
collinus Boeckeler = **B. contexta**
collinus var. *boeckelerianus* (Schweinf.) Schweinf. = **B. boeckeleriana**
compactus Hoffm. = **Bolboschoenus maritimus** subsp. **maritimus**
complanatus Retz. = **Fimbristylis complanata**
confervoides Poir. = **Websteria confervoides**
confusus N. E. Br. = **Schoenoplectus muricinux**
coronarius Vahl = **Cyperus leucocephalus**
corymbosus (Roth. ex Roem. & Schult.) B. Heyne = **Schoenoplectus corymbosus**
corymbosus Forssk. 1775 = **Bulboschoenus maritimus** subsp. **maritimus**
corymbosus L. = **Rhynchospora corymbosa**
corymbosus var. *junciformis* A. Peter = **Schoenoplectus muricinux**
costatus (Hochst. ex A. Rich.) Boeckeler, incl. var. *macer* (Boeckeler) Cherm. = **Isolepis costata**
cuspidatus Roem. & Schult. 1817 = **Tetraria cuspidata**
cymosus (R. Br.) Poir. 1816 = **Fimbristylis cymosa**
cymosus Lam. 1791 = **F. cymosa**
cyperoides L. 1771 = **Mariscus sumatrensis**
densus Wall. = **Bulbostylis densa**
dichotomus L. = **Fimbristylis dichotoma**
diphyllus Retz. = **F. dichotoma** subsp. **dichotoma**
dipsaceus Rottb. = **F. dipsacea**
elatus Boeckeler 1870, non (R. Br.) Poir. 1817 = **Ficinia filiformis**
enodis (C. B. Clarke) T. Koyama = **Fuirena coerulescens**
equitans Kük. = **Nemum equitans**
erectogracilis Hayata = **Schoenoplectiella lateriflora**
erectus Poir. = **S-a erecta**
erectus subsp. *raynalii* (Schuyler) B. F. Hansen & Wunderlin = **S-a erecta** subsp. **raynalii**
erectus sensu Berhaut 1967 = **Schoenoplectiella lateriflora**
erectus sensu Cherm. 1931 = **S-a oxyjulos**
erismaniae Schuyler = **S-a erecta** subsp. **erecta**
erraticus Rota ex De Not. = **Eleocharis atropurpurea**
exilis (Kunth) Poir. = **Bulbostylis hispidula**
ferrugineus L. = **Fimbristylis ferruginea**
filamentosus Vahl = **Bulbostylis filamentosa**
fimbriatus Poir. 1805 = **Fimbristylis dichotoma** subsp. **dichotoma**
fimbriatus Willd. ex Kunth 1837 = **F. pilosa**
fimbristyloides K. Schum. ex C. B. Clarke = **Bulbostylis schimperiana**
fistulosus Poir. 1805 = **Eleocharis acutangula** subsp. **acutangula**
fistulosus Forssk. = **Schoenoplectiella articulata**
fistulosus (Schult.) Kuntze = **Eleocharis acutangula** subsp. **acutangula**
fluitans L., incl. var. *fascicularis* (Nees) Boeckeler, var. *spadiceus* C. B. Clarke, var. *terrester* Kük. 1925 nom. nud., and var. *terrestris* Benth. = **Isolepis fluitans** var. **fluitans**
fuirena T. Koyama = **Fuirena umbellata**
geniculatus L., incl. var. *minor* Vahl = **Eleocharis geniculata**
glaucus Lam. 1791 = **Bolboschoenus glaucus**
globifer L. f. = **Scirpoides holoschoenus** subsp. **globifera**
glomeratus Scop. 1771 = **Schoenoplectiella mucronata**
glomeratus Retz. 1786 = **Fimbristylis cymosa** subsp. **cymosa**
glomeratus Roxb. 1820 = **F. dichotoma** subsp. **dichotoma**
gracillimus Boeckeler = **Bulbostylis pusilla** subsp. **pusilla**
gracillimus Kohts 1869 = **Isolepis setacea**
gracilis Zeyh. ex Kunth 1837 = **Ficinia gracilis**
graminoides R. W. Haines & Lye = **Isolepis graminoides**
grandispicus (Steud.) Berhaut = **Bulboschoenus grandispicus**
granulato-hirtellus Boeckeler ex Schinz = **Bulbostylis hispidula** subsp. **hispidula**
griquensium C. B. Clarke = **Isolepis sepulcralis**
halleri Vitman = **Schoenoplectiella supina**
hamulosus (M. Bieb.) Steven = **Mariscus hamulosus**
hemisphaericus Roth = **Lipocarpha hemisphaerica**
hildebrandtii Boeckeler = **Bulbostylis hispidula**
hispidulus Vahl = **B. hispidula**
hochstetteri Boeckeler = **B. pusilla**
holoschoenus L. 1753 = **Scirpoides holoschoenus**
holoschoenus Thunb. 1811 = **S. holoschoenus** subsp. **thunbergii**
holoschoenus subsp. *australis* (L.) Arcang. = **S. holoschoenus** subsp. **holoschoenus**
holoschoenus var. *globiferus* (L. f.) Parl. = **S. holoschoenus** subsp. **globifera**
holoschoenus subsp. *globiferus* (L. f.) Husn. = **S. holoschoenus** subsp. **globifera**
holoschoenus var. *hayekii* Maire = **S. holoschoenus** subsp. **globifera**

holoschoenus var. *romanus* (L.) Sm. = **S. holoschoenus** subsp. **holoschoenus**
holoschoenus var. *thunbergii* (Schrad.) C. B. Clarke = **S. holoschoenus** subsp. **thunbergii**
hystricoides B. Nord. = **Lipocarpha rehmannii**
hystrix auctt. (Rendle, De Meneses, Podlech, etc.), non Thunb. = **L. rehmannii**
inclinatus (Delile ex Barbey) Asch. & Schweinf. ex Boiss. = **Schoenoplectus corymbosus**
inclinatus auct. = **S-us heptangularis**
iridifolius Poir. = **Machaerina flexuosa** subsp. **polyanthemum**
isolepis (Nees) Boeckeler = **Lipocarpha hemispherica**
jacobi C. E. C. Fisch. = **Schoenoplectiella senegalensis**
juncoides Roxb. = **S-a juncoides**
kalli Forssk. = **Cyperus capitatus**
kamerunensis K. Schum. ex C. B. Clarke = **Bulbostylis erratica**
kernii Raymond = **Lipocarpha kernii**
kirkii (C. B. Clarke) K. Schum. = **Bulbostylis contexta**
kyllingioides (A. Rich.) Boeckeler = **Kyllingiella microcephala**
lacustris L. = **Schoenoplectus lacustris**
lacustris var. *tabernaemontani* (C. C. Gmel.) Döll = **Sch. tabernaemontani**
lacustris subsp. *tabernaemontani* (C. C. Gmel.) Syme = **Sch. tabernaemontani**
laeteflorens C. B. Clarke = **Bolboschoenus nobilis**
laniferus Boeckeler = **Bulbostylis lanifera**
lateralis Retz. 1786 = **Schoenoplectiella lateriflora**
laxus (Vahl) Poir. = **Fimbristylis dichotoma** subsp. **dichotoma**
leucocoleus K. Schum. = **Ficinia filiformis**
libanotis Post = **Fuirena pubescens** var. **pubescens**
lithospermus L. = **Scleria lithosperma**
litoralis Schrad., incl. var. *foliosus* Jahand., Maire & Weiller, subsp. *pterolepis* (Nees) C. B. Clarke, var. *subulatus* (Vahl) Chiov., subsp. *subulatus* (Vahl) Wad. Khan, and subsp. *thermalis* (Trab.) Murb. = **Schoenoplectus subulatus**
litoralis sensu Ahti & al. 1973 = **Sch. subulatus**
lugardii C. B. Clarke = **Mariscus hamulosus**
lupulinus (Nees) Roshev. = **Schoenoplectiella roylei**
macer Boeckeler = **Isolepis costata**
macrolepis Boeckeler ex C. B. Clarke = **Bulbostylis contexta**
macrostachyos Lam. 1791 = **Bolboschoenus maritimus**
macrostachys Willd. 1809 = **B. glaucus**
madagascariensis Boeckeler = **Schoenoplectus corymbosus**
maritimus L. = **Bolboschoenus maritimus**
maritimus subsp. *compactus* (Hoffm.) Hejný, and fa. *compactus* (Hoffm.) Bolzon = **B. maritimus** subsp. **maritimus**
maritimus var. *glaucus* (Lam.) Nees = **B. glaucus**
maritimus var. *laeteflorens* (C. B. Clarke) Kük. = **B. nobilis**
maritimus var. *macrostachys* (Willd.) Dumort. 1827 = **B. glaucus**
maritimus var. *macrostachys* Vis. 1842 = **B. glaucus**
maritimus fa. *macrostachys* (Vis.) Nilsson 1901 = **B. glaucus**
maritimus fa. *macrostachys* (Willd.) Junge 1908 = **B. glaucus**
maritimus var. *nobilis* (Ridl.) C. B. Clarke = **B. nobilis**
maritimus var. *tuberosus* (Desf.) DC. 1806 = **B. glaucus**

maritimus var. *tuberosus* (Desf.) Roem. & Schult. 1817 = **B. glaucus**
maritimus sensu C. B. Clarke 1902 p. min. p. = **B. nobilis**
martii Dufour ex Roem. & Schult. = **Cladium mariscus** subsp. **mariscus**
mauritanicus Steud. = **Schoenoplectiella mucronata**
medius Roxb. = **Eleocharis acutangula** subsp. **acutangula**
melanospermus C. A. Mey. = **Schoenoplectiella supina**
melanospermus var. *major* Regel = **S-a roylei**
michelianus L., incl. fa. *conglomeratus* Beck = **Cyperus michelianus** subsp. **michelianus**
micranthus Vahl = **Lipocarpha micrantha**
microcephalus (Steud.) Dandy = **Kyllingiella microcephala**
miliaceus L. 1759, nom. rej. = **Fimbristylis quinquangularis** subsp. **quinquangularis**
minimus Willd. ex Kunth, nom. nud. in syn. = **Lipocarpha hemisphaerica**
minimus Roxb. = **Fimbristylis dipsacea** var. **dipsacea**
mucronatus L. = **Schoenoplectiella mucronata**
mucronatus Pollich 1776 = **Bolboschoenus maritimus** subsp. **maritimus**
multicostatus Baker = **Isolepis costata**
muricinux C. B. Clarke = **Schoenoplectus muricinux**
muriculatus Kük. = **Sch. muricinux**
mutatus L. = **Eleocharis mutata**
natans Thunb. = **Isolepis natans**
nigrescens (Nees) Salzm. ex Steud. = **Eleocharis nigrescens**
nindensis Ficalho & Hiern = **Bulbostylis sphaerocarpa**
nobilis Ridl. = **Bolboschoenus nobilis**
nudifructus Kük. = **Fuirena leptostachya** fa. **nudiflora**
obtusifolius Lam. = **Fimbristylis cymosa** subsp. **cymosa**
occultus C. B. Clarke = **Cyperus michelianus** subsp. **pygmaeus**
oligostachys (Hochst. ex A. Rich.) Boeckeler = **Bulbostylis oligostachys**
oxyjulos S. S. Hooper = **Schoenoplectiella oxyjulos**
parvinux (C. B. Clarke) K. Schum. = **Bulbostylis parvinux**
pectinatus Roxb. = **Schoenoplectus subulatus**
pilosus (Vahl) Poir. 1817 = **Fimbristylis pilosa**
pitardii Trab. ex Pit. = **Mariscus hamulosus**
plantagineus Retz. = **Eleocharis dulcis**
plantaginoides Rottb. = **E. dulcis**
polytrichoides Retz. = **Fimbristylis polytrichoides**
praelongatus Poir. – See under **Schoenoplectiella praelongata**
praelongatus sensu auctt., non Poir. (e.g. G. Carvalho & H. Gillet, Cufod. 1970, Andrews 1956, etc.) = **S-a senegalensis**
pretorianus Boeckeler ex C. B. Clarke = **Bulbostylis schoenoides**
pterolepis (Nees) Kunth = **Schoenoplectus subulatus**
puberulus Poir. 1805, non Michx. 1803 = **Bulbostylis thouarsii**
pubescens (Poir.) Lam. = **Fuirena pubescens**
pungens Willd. ex Kunth 1837 = **Schoenoplectus lacustris** subsp. **lacustris**
purpureoater Boeckeler = **Bulbostylis oligostachys**
quinquangularis Vahl = **Fimbristylis quinquangularis**
quinquefarius Buch.-Ham. ex Boeckeler = **Schoenoplectiella roylei**
ramosus Boeckeler = **Isolepis fluitans** var. **nervosa**
raynalii Schuyler = **Schoenoplectiella erecta** subsp. **raynalii**
rehmannianus Boeckeler ex C. B. Clarke = **S-a roylei**

rehmannianus Boeckeler ex C. B. Clarke 1894, nom. nud. = **S-a articulata**
rehmannii Ridl. = **Lipocarpha rehmannii**
retroflexus Poir. = **Eleocharis retroflexa**
rhodesicus Podlech = **Schoenoplectus rhodesicus**
rivularis (Schrad.) Boeckeler = **Isolepis natans**
rogersii N. E. Br. = **Schoenoplectus muricinux**
romanus L. = **Scirpoides holoschoenus** subsp. **holoschoenus**
roylei (Nees) R. Parker 1929 and (Nees) Beetle 1942 = **Schoenoplectiella roylei**
ruppioides Thwaites ex C. Wright 1871, nom. nud. = **Websteria confervoides**
schimperianus (Hochst. ex A. Rich.) Boeckeler = **Bulbostylis schimperiana**
schoenoides Retz. = **Fimbristylis schoenoides**
schweinfurthianus Boeckeler = **Bulbostylis abortiva**
scleropus (C. B. Clarke) K. Schum. = **B. scleropus**
senegalensis Lam. = **Lipocarpha chinensis**
setaceus L., incl. var. *digynus* Boeckeler, var. *gracillimus* (Nyman) A. Terracc., var. *major* Lej., and var. *minimus* Gaudin = **Isolepis setacea**
setaceus var. *monandra* Willd. ex Kunth, nom. nud. in syn. = **Lipocarpha hemisphaerica**
sieberi (Kunth) Kuntze = **Eleocharis variegata**
sinuatus Schuyler = **Schoenoplectiella erecta** subsp. **erecta**
sp. A sensu Fl. W. Trop. Afr., ed. 2, 3/2: 311, 1972 = **Schoenoplectus muricinux**
spadiceus (Lam.) Boeckeler = **Nemum spadiceum**
spadiceus var. *ciliatus* Ridl. = **N. angolense**
sphaerocarpus Boeckeler = **Bulbostylis sphaerocarpa**
squarrosus (Vahl) Poir. 1817, non L. 1771 = **Fimbristylis squarrosa**
squarrosus auctt., non L. = **Lipocarpha kernii**
squarrosus sensu C. B. Clarke = **L. rehmannii**
steudneri Boeckeler 1870 = **Kyllingiella polyphylla**
stolonifer Roth = **Isolepis fluitans** var. **fluitans**
submersus C. Wright = **Websteria confervoides**
subsquarrosus Muhl. = **Lipocarpha micrantha**
subulatus Vahl, incl. var. *capensis* Boeckeler = **Schoenoplectus subulatus**
supinus L. = **Schoenoplectiella supina**
supinus subvar. *erectus* (Poir.) Rouy = **S-a erecta**
supinus var. *lateriflorus* (J. F. Gmel.) T. Koyama = **S-a lateriflora**
supinus var. *melanospermus* (C. A. Mey.) Schmalh. = **S-a supina**
supinus var. *minimus* Boiss. = **S-a supina**
supinus var. *uninodus* (Delile) Asch. & Schweinf. = **S-a erecta** subsp. **erecta**
supinus subsp. *uninodus* (Delile) Trab. = **S-a erecta** subsp. **erecta**
supinus Boeckeler = **S-a erecta**
supinus sensu Cufod. 1970 = **S-a lateriflora**
supinus sensu C. B. Clarke 1902 p.p. = **S-a microglumis**
supinus sensu C. B. Clarke 1902 p.p. = **S-a lateriflora**
supinus sensu Quézel 1958, Gillet = **S-a proxima**
tabernaemontani C. C. Gmel. 1805 = **Schoenoplectus tabernaemontani**
tenerrimus Peter 1936 = **Schoenoplectiella microglumis**
ternatus Wall. 1831 = **S-a erecta** subsp. **erecta**
ternatus Ham. ex Hook. f. 1893 = **S-a erecta** subsp. **erecta**
thermalis Trab. 1895 = **Schoenoplectus subulatus**
thouarsii Roem. & Schult. = **Bulbostylis thouarsii**
transvaalensis Boeckeler ex C. B. Clarke = **B. schoenoides**

trispiculatus Boeckeler ex C. B. Clarke = **B. contexta**
trollii (Kük.) Lye = **Ficinia trollii**
tuberosus Desf. = **Bolboschoenus glaucus**
umbellatus (Rottb.) Kuntze = **Fuirena umbellata**
uninodis (Delile) Coss. & Durieu = **Schoenoplectiella erecta** subsp. **erecta**
ustulatus Podlech = **Nemum angolense**
validus Vahl 1805 = **Schoenoplectus tabernaemontani**
variegatus Poir. = **Eleocharis variegata**
verrucosulus Steud. = **Isolepis cernua** var. **setiformis**
"*verruculosus*" (Nees) Steud. in Fl. W. Trop. Afr., ed. 2, 3/2: 1972 = **I. cernua** var. **setiformis**
wallichianus (Schult.) Spreng. = **Bulbostylis barbata**
wardianus J. R. Drumm. = **Schoenoplectus subulatus**
wilkensii Schuyler = **Schoenoplectiella erecta** subsp. **erecta**
zeyheri Boeckeler = **Bulbostylis contexta**

SCLERIA / *89*

Scleria P. J. Bergius 1765

syn.: *Catagyna* P. Beauv. ex T. Lestib.

Commonly known as nut rushes or razor grasses. Genus of some 250 species (Bauters & al. in Taxon 65: 444–466, 2016; Christenhusz, Fay & Chase, Plants of the World: 202, 2017) with half of them native to the Americas, extending from the United States to Argentina (Mayedo & Thomas in Phytotaxa 268: 263–270, 2016; Espinoza & al. in Phytotaxa 284: 81, 2016). *Scleria* is one of the major genera, or the fifth largest genus (Araújo & Brummitt in Kew Bull. 66: 517, 2011) in *Cyperaceae*. An exhaustive list of names of genera and subdivisions of genera included in *Scleria* was published by Camelbeke & al. in Taxon 50: 479–486, 2001. A subgeneric classification was presented by Bauters & al. in Taxon 65: 444–466, 2016, proposing 4 subgenera. However, the infrageneric classification is very controversial and complicated (Espinoza & al., l.c.).

The genus *Scleria* is pantropical, locally extending to warm temperate regions (Tremetsberger & al. in Edinb. J. Bot. 76: 206–208, 2019; map by Piérart in Lejeunia Mém. 13: 18, 1953).

"The basically paniculate inflorescence of *Scleria* … is extremely polymorphic due to differences in the degree of development of its different parts. Therefore, the external morphology of the inflorescence … is an important diagnostic character … The main problems in the interpretation of the inflorescence structure result from studies that did not consider the entire inflorescence" (Ahumada & Vegetti 2009: 115). "Many identification keys are based on the small flowers and fruits (achene). The achene and the associated hypogynium are diagnostic structures used to classify species in different sections … The hypogynium is a hardened disc at the base of the achene, similar to a cup-shaped pedicel. The achene is variable in form, texture, color and indumentum … The origin and function of the hypogynium and achene and their characteristics are still unknown. Another common mistake in the keys to *Scleria* is to confuse the cupule with the hypogynium in some species" (Espinoza & al. in Phytotaxa 284: 81, 2016).

Some general remarks on *Scleria* in our area. Sometimes a remarkable number of species grow together (up to 10; See, e.g., under *S. angustifolia)*. A few species are very robust reaching some 4 to 5 m in height (*S. porphyrocarpa*, *S. verrucosa*). *S. boivinii* is a scrambling herb to 10–15 m long.

Some of the 89 species recorded for our area are insufficiently known: for 1 species the ecology is not recorded; 6 species (nearly 7 %) are known only from the type (locality).

AHUMADA, O. & A. C. VEGETTI (2009). Inflorescence structure in species of Scleria subgenus Hypoporum and subgenus Scleria (Sclerieae-Cyperaceae). *Plant Syst. Evol*. 281: 115−135.

BAUTERS, K. & al. (2016). Phylogenetics, ancestral state reconstruction, and a new infrageneric classification of Scleria (Cyperaceae) based on three DNA markers. *Taxon* 65: 444−466.

BAUTERS, K. & al. (2018). Molecular phylogenetic study of Scleria subgenus *Hypoporum* (Sclerieae, Cyperoideae, Cyperaceae) reveals several species new to science. https://doi.org/10.1371/journal.pone.0203478 (19 pages).

BAUTERS, K. & al. (2019). A taxonomic study of Scleria subgenus Hypoporum: synonymy, typification and a new identification key. *Phytotaxa* 394: 1−49.

CAMELBEKE, K. & al. (2001). Nomenclature of genera and subdivisions of genera within Scleria P. J. Bergius (Cyperaceae). *Taxon* 50: 479−486.

PIÉRART, P. (1953). Les espèces du genre Scleria Berg. du Congo Belge et du Ruanda-Urundi. *Lejeunia Mém*. 13: 1−68, pl. 1−5.

REUTEMANN, A. & al. (2012). Structure of the Cyperaceae inflorescence. *Bot. Rev*. 78: 184−204.

Scleria achtenii De Wild., incl. var. *subintegriloba* (De Wild.) Piérart; Renier, Fl. Kwango 1: 67, 1948; Piérart (1953): 46; Kew Bull. 18: 534, 1966; Lisowski, Fl. Rép. Guinée 1: 412, 2009; Fl. Trop. E. Afr., Cyper.: 405−406, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Mesterházy in Lidia 7/5: 121, 2012; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017). – Icon.: De Wildeman, Plantae Bequaertianae 4: 219, 1927 (nutlet); Piérart (1953): pl. 2/14−17 (nutlet, stamen); Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 350−351, 1983; Berhaut, Fl. ill. Sénégal 9: 327, 1988; Gordon-Gray, Cyper. Natal: 180, 1995 (nutlet); Akoègninou & al., Fl. analyt. Bénin: 117, 2006; Fl. Gabon 44, Cyper.: 197, 2012.

syn.: *S. substriatoalveolata* De Wild.; *S. subintegriloba* De Wild.; *S. nyassensis* Nelmes in Kew Bull. 11: 86, 1956, p.p. non C. B. Clarke

Perennial herb 0,4−2 m tall; rhizome red, usually straight, 3−6 mm ∅, with hairy stems arising from it at intervals of up to 1 cm with bases swollen; leaf sheaths hairy; blade 30−60 cm long, 2,5−5 mm wide, glabrous above, hairy on the 5 principal veins beneath; inflorescence reddish, elongate, 20−85 cm long, the terminal panicle to 2,5 cm long; lateral panicles single at 2−4 upper nodes on pendulous hairy peduncles exserted to 18 cm from the sheaths; male spikelets 7−9 mm long, sessile on short pedicels; female spikelets 5−7 mm long.

Perennially damp but not water-logged ground; *Loudetia* tussocks in marshes; occasionally in permanent water; wet savanna; marshy grassland along river; sporadically distributed on dry sandy surfaces, but only along the sea (Liberia, Mesterházy 2012); "in periodically damp hollows, usually intimately mixed with grass-clumps which support the weak stems, but sometimes self standing and then with shorter stems and leaves" (Lowe & Stanfield, o.c.); 0−1500 m alt.

S. Africa.

S. adpressohirta (Kük.) E. A. Rob.; Fl. Trop. E. Afr., Cyper.: 408−409, 2010; Lock in Kew Bull. 70: § 46: 2, 2015 (Robinson). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 353, 1983; Fl. Eth. & Eritrea 1: 268, 2009.

bas.: *S. canaliculatotriquetra* Boeckeler var. *adpressohirta* Kük.

Perennial shortly hairy, loosely tufted herb 50−93 cm tall; *rootstock a knotty mass* of swollen stem bases; roots *red* becoming cylindrical and *tuberous* at a distance of 3−8 cm from stem bases; leaves pale green when dried due to *dense hairs*, 4−7 mm wide; panicles 2−8 cm long, 1−2 cm wide, the laterals 1−2 at each of 1−3 nodes; peduncles exserted 0,5−10 cm from the sheaths, shortly hairy; male spikelets straw-coloured to chestnut, 4−5,5 mm long, hispidulous, sessile or on pedicels 1−3 mm long; female glumes straw-coloured marked chestnut or entirely chestnut.

Perennially damp ground, and swamp in grassland; grassland patches in forest; – c. 1450 m alt.-1550 m alt.

Some affinity with *S. canaliculatotriquetra* but: – rootstock unlike that of any other African species of *Scleria*, general hairiness, stems do not exceed 1 m tall (are usually a good deal shorter), achene smooth, not truly ovate but broadly ovate-globose, globose or depressed-globose.

"However, it is doubtful that *S. adpresso-hirta* should be given rank of species; infraspecific rank under the very similar … *S. lagoensis* Boeck. would seem more reasonable, the very disjunct distribution of *S. adpresso-hirta* might argue for a well marked variety under *S. lagoensis*" (Fl. Eth. & Eritrea 1: 267, 2009).

S. afroreflexa Lye; Cheek & al., Pl. Kupe…: 192, 2004; Onana & Cheek, Red Data Book flow. pl. Cameroon: 369, 2011; Onana, Fl. Cameroun 40: 224, 2013. – Icon.: Nord. J. Bot. 23: 511, 2004 (nutlet); Harvey & al., Pl. Bali Ngemba …: 56 (fig. 8), 136, 2004; Bauters & al. (2019): 11 (nutlet).

Annual herb; culms 10−50 cm long, 0,3−0,8 mm ∅, obtusely triangular, glabrous or sparsely hairy, for the most part covered by sheaths; leaves 2−4 per culm, but only 1−3 with perfecting blades; sheaths densely covered by retrorse white hairs 0,2−0,4 mm long, lower sheaths purplish to reddish-brown, upper more greenish; blades 2−9 cm long, 0,8−1,8 mm wide, flat, green or sometimes a little purplish, with c. 0,5 mm long spreading transparent hairs at least on margin and major nerves; inflorescence 3−9 × 1−2 cm, appearing spike-like with sessile glomerules above, but, in fact, a narrow panicle with 1-several reflexed branches with 1−3 glomerules below, axis and branches triangular, glabrous or slightly hairy or scabrous, base of branches swollen, purplish with numerous and purplish spreading stiff hairs; glomerules 4−5 × 3−6 mm, with 2−10 spreading spikelets (bisexual, 3−4 × 1−1,5 mm), variegated, pallid and light reddish-brown, with 1 female flower below and 1-few male above.

Grassland; grassland patches in forest; 1300 – c. 1550 m alt.

Near *S. sheilae*.

S. angusta Nees ex Kunth; Robinson in Kew Bull. 18: 548, 1966. – Icon.: Gordon-Gray, Cyper. Natal: 178, 180, 1995; Cook, Aquat. & wetland pl. south. Afr.: 120, 2004; Bauters & al. (2016): 456 (nutlet).

syn.: *S. angustata* Steud.

Erect evergreen perennial herb; rhizome 4−5 mm ∅, ± straight, with culms rising from it at intervals of 1,5−2 cm; culms to 2,5 m tall, 3−6 mm ∅, glabrous below, hairy above; leaves *pleated*, to 1,6 cm wide, some with *praemorse apices*; inflorescence interrupted, the lateral panicles single at 3−7 nodes, on erect, ± shortly exserted peduncles; panicles rather compact, 3−6 cm long; male spikelets 4 mm long; nutlets smooth, ± globose, porcelain-like, with violet or purple blotches.

Swamp forest.

S. Africa; Madagascar.

S. angustifolia E. A. Rob.; Lock in Kew Bull. 70: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 511, 1966; Bauters & al. (2019): 6, 11 (text p. 10, 12).

Perennial herb; rhizome rigid, horizontal, 2−2,5 mm ∅; culms arising in a ± straight series, clearly separated, to 80 cm tall, < 1 mm ∅, glabrous; leaves setaceous, c. 1 mm wide, glabrous; inflorescence 3−9 cm long, branched, glomerate-spicate; branches 2,5−3 cm long, simple or more rarely compound; glomerules of 1−3 spikelets; these androgynous, 3−4 mm long; nutlet ± globose, ± smooth to strongly papillose or tuberculate, ± reddish.

Bogs which remain wet for most or all of the year, with *Scleria rehmannii*, *S. bequaertii*, *S. procumbens*, *S. laxiflora*, *S. erythrorrhiza*, *S. greigiifolia*, *S. pooides*, S. *unguiculata*, or *S. welwitschii* (not *S. nyasensis*).

S. arcuata E. A. Rob.; Lock in Kew Bull. 70: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 543, 1966.

Perennial herb, first erect, later spreading; rhizome creeping, covered by reddish scales, 4−6 mm ∅; culms to 40 cm long, rigid, glabrous or pilose, striate; leaves as long as or longer than culms, 1−3,5 mm wide, keeled, sparsely pilose; sheaths glabrous or pilose; inflorescence interrupted; lateral panicles often single, peduncles short, rarely to 4 cm long; male spikelets 4,5−6 mm long, sessile or on short pedicel; female glumes ovate, 5−6 mm long; nutlet ovoid, c. 3,5 × 1,8−2,4 mm, dark grey or brown. – "At maturity the stems bend stiffly outwards, so that … the apex of the inflorescence may be found pointing downwards" (Robinson, o.c.: 544).

Black, friable, sandy soil probably damp for 7−8 months of the year but not fully saturated for long even in the rains, with very sparse grass cover.

Very near *S. achtenii*, but: plant much smaller, and habitus more rigid and spreading; panicles with few spikelets; male spikelet < 6 mm long.

S. aurantiaca Lye – Icon.: Nord. J. Bot. 30: 710−711, 2012; Fl. Gabon 44, Cyper.: 195, 2012 (nutlet).

Perennial slender herb to 80 cm tall; rhizome short; culms few, clustered, 40−60 cm long, 1−2 mm ∅, obtusely trigonous, glabrous to minutely hairy, smooth, base swollen; leaves high up on the culm; sheaths densely short-hairy, lower ones purplish, bladeless, upper ones green with blades; blades flat, to 30 cm long, 2−4 mm wide, margins and midrib scabrid; inflorescence with 2−3 pendulous panicles from each of the 3−4 upper leaf sheaths; peduncles slender, c. 10−30 cm long, c. 0,5 mm thick, triangular, glabrous; panicles ± lanceolate, 2−4 cm long, 1−2 cm wide, with 4−8 maturing spikelet groups only; male spikelets c. 6 mm long, female 7−8 mm long; nutlet elliptic, c. 3 mm long, white-hairy.

Small bush savanna in forest area; 435 m alt.

Near *S. nyasensis*, and *S. adpressohirta*.

The specific epithet is derived from the bright orange ring of the hypogynium.

Known only from the type collected in 2008.

S. bambariensis Cherm.; Piérart (1953): 62; Robinson in Kew Bull. 18: 527−528, 1966; Fl. Trop. E. Afr., Cyper.: 401−402, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 346, 1983.

Annual herb, erect, densely tufted, glabrous or slightly hairy, 0,2−1 m tall; leaves few, 1,5−7 mm wide, occupying or sheathing most of the lower part of culm, hairy on both surfaces or sometimes entirely glabrous; sheaths acutely angled; inflorescence of 1 terminal and 1−3 lateral panicles, usually single at nodes on slender pendulous peduncles well exserted from the sheaths; male spikelets 3−4 mm long on 1−4 mm long pedicels; female spikelets 4−6 mm long; nutlet white to blackish, oblong, c. 2−3 × 1,6−2,3 mm with lacunae arranged in straight rows.

Swamps; seasonally wet grassland; seepage in miombo valley woodland; seasonally boggy places; very humid laterite; humid gneiss; 60−1200 m alt.

Var. B of Robinson in Kew Bull. 18: 528, 1966, is only a larger form of the typical form.

Madagascar. – The true *S. bambariensis* does probably not exist in Senegal where it is replaced by *S. parvula*.

A revision of the group *S. bambariensis*, *S. parvula* and *S. reticularis* Michx. is needed worldwide.

S. baroni-clarkei De Wild., non *S. baronii* C. B. Clarke ex Cherm., nec *S. clarkei* De Wild. 1927; Piérart (1953): 51−52. – Icon.: ibid.: pl. 3/10 (nutlet); Fl. Gabon 44, Cyper.: 205, 2012 (nutlet); Bull. Soc. Roy. Bot. Belg. 59: pl. V, 1927 (as *S. clarkei*); Pl. Bequaert 4: pl. II, 1927 (idem).

syn.: *S. clarkei* De Wild. 1927, nom. illeg., non Lindm. 1901.

Perennial tufted herb with short rhizome; culms 0,7−1,5 m long, 3−5 mm ∅, trigonous, edges hairy, leafy up to the top; leaf sheaths pubescent; blades to 40 cm long, 5−7 mm wide, pubescent beneath, nearly glabrous above, margins and main nerve scabrous; inflorescence of 3−5 lateral panicles, each from a node or a sheath, the largest panicle c. 3−10 × 3 cm, peduncles rigid, trigonous, hairy, scabrous; male spikelets mostly terminal, c. 5−6 × 1 mm; female spikelet 4−5 mm long, of 3 acuminate, blackish glumes usually longer than nutlet.

Wooded grounds.

Very close to *S. naumanniana*, *S. induta*, *S. iostephana*.

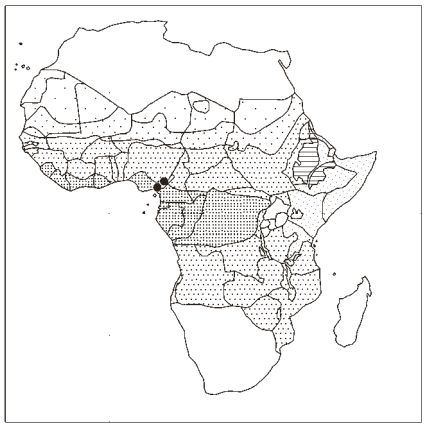
S. bequaertii De Wild., incl. var. *laevis* Piérart; Piérart (1953): 38−39; Robinson in Kew Bull. 18: 523−524, 1966; Bauters & al. (2019): 13, 11 (fig. nutlet). – Icon.: De Wildeman in Rev. Zool. Bot. Afric. 14 (Suppl. Bot.): fig. 2, 1926; De Wildeman, Pl. Bequaert. 4: 223, 1927 (nutlet); Piérart (1953): pl. 2/1−2 (nutlet, stamen).

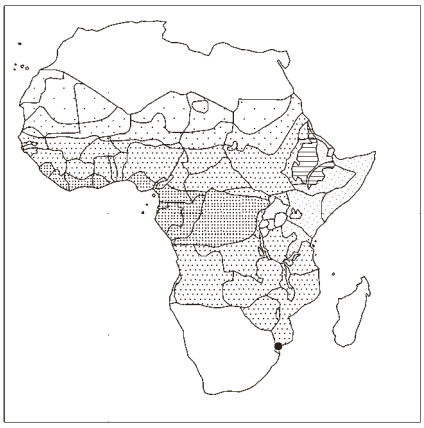
Perennial herb; rhizome hard, 2−5 mm ∅, occasionally branched, forming a thickly knotted mass; culms weakly erect or semi-prostrate, to 1 m long, < 1 mm ∅, branching at many nodes to form a ± bushy growth; leaves numerous, blade 8−15 cm long, 1−3,5 mm wide, densely hairy but sometimes glabrous; inflorescence terminal and lateral; lateral panicles single at nodes in axils of leafy bracts, peduncles erect; panicle generally spicate but sometimes branched in lower part; spikelets 7−10 mm long, all in effect unisexual though in the female ones there is always an aborted male flower reduced to empty glumes; glumes hairy; nutlet with surface densely and minutely trabeculate, trabeculae arranged horizontally, which gives an effect of the surface reminiscent of a maize-cob.

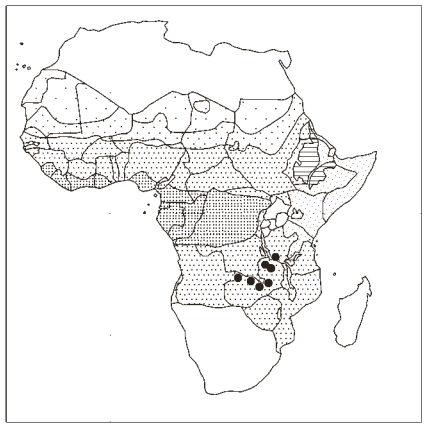
Grassy formations in swampy places; wooded, humid savanna; permanently wet bogs; often growing with *S. procumbens* and sometimes *S. laxiflora*, and may with one or both of these species, or by itself, form dense masses of semi-prostrate vegetation which dominate large areas of saturated bogland; swampy meadows over coarse blackish sand; 330−1650 m alt.

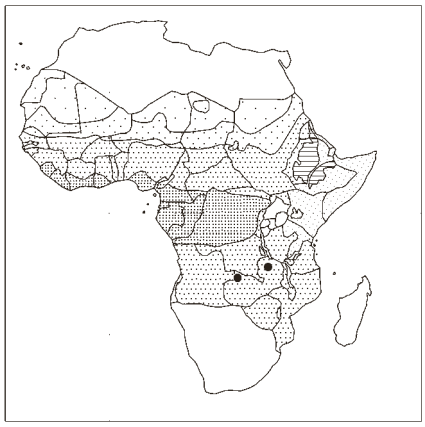
According to Fl. Trop. E. Afr., Cyper.: 406−407, 2010, a specimen from Tanzania, Songea, of *S. laxiflora* R. Gross, viz. Milne-Redhead & Taylor 8944, had previously been determined as *S. bequaertii* var. *laevis*.

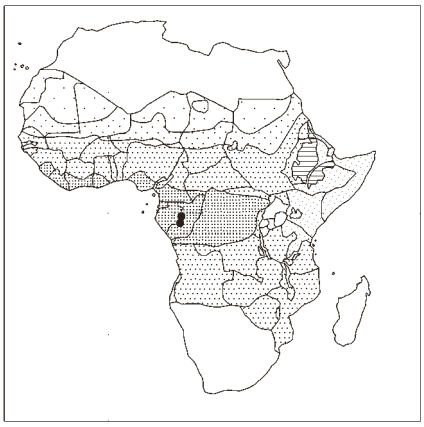
(**S. bicolor** Nelmes) See under **S. remota** Ridl. below.

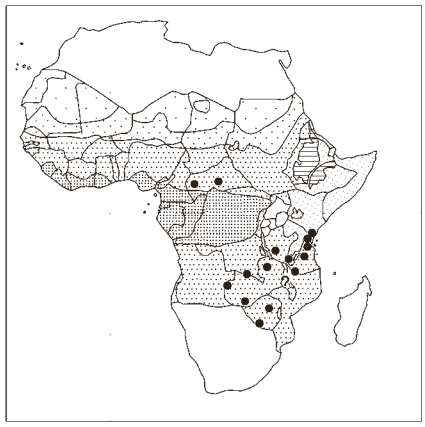

Scleria afroreflexa

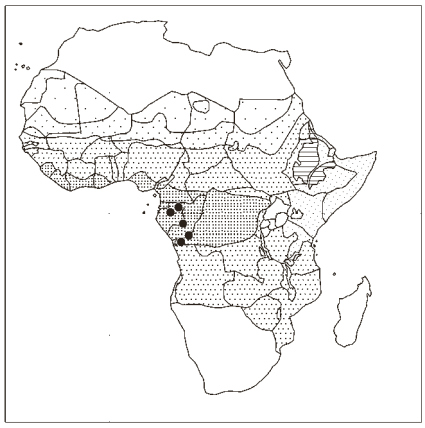

Scleria angusta

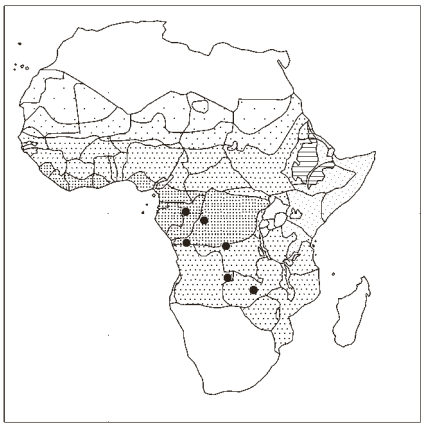

Scleria angustifolia

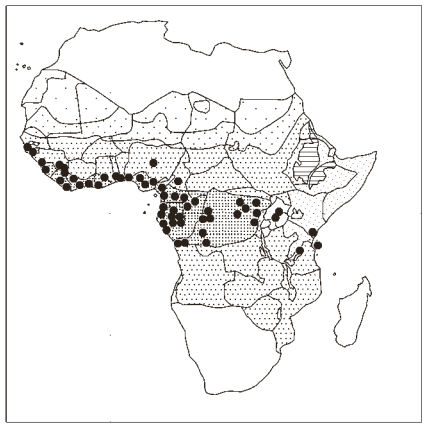

Scleria arcuata

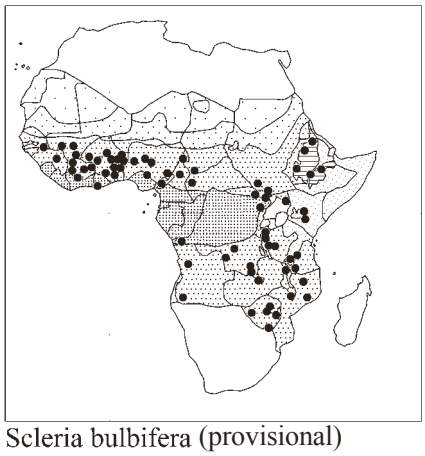

Scleria aurantiaca

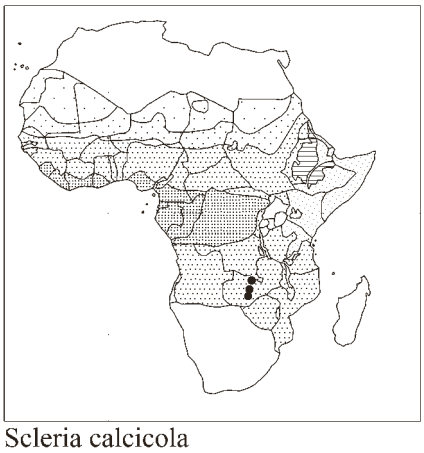

Scleria bambariensis

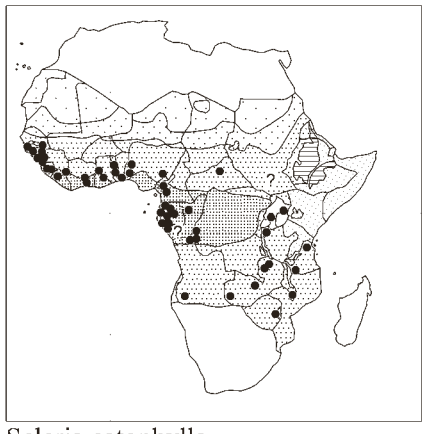

Scleria baroni-clarkei


Scleria bequaertii


Scleria boivinii


Scleria bulbifera (provisional)


Scleria calcicola


Scleria catophylla

S. boivinii Steud.; Renier, Fl. Kwango 1: 67, 1948 (as *S. barteri*); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 280, 1955 (species to be searched for); Napper in Kew Bull. 25: 441, 1971; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 642, 1985; Simpson & Inglis in Kew Bull. 56: 340, 2001; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 227, 2002; Akoègninou & al., Fl. analyt. Bénin: 117, 2006; Lisowski, Fl. Rép. Guinée 1: 412, 2009; Fl. Trop. E. Afr., Cyper.: 410, 2010; Mesterházy in Lidia 7/5: 119, 2012. – Icon.: Hook. Ic. Pl. 32: pl. 3191, 1933; Lorougnon, Cypér. forest. Côte d'Ivoire (Mém. ORSTOM 58): 26, 35, 1972 (as *S. barteri*); Haines & Lye, Sedges & rushes E. Afr.: 355, 1983; Berhaut, Fl. ill. Sénégal 9: 328−329, 1988; Hawthorne & Jongkind, Woody pl. west. Afric. forests: 865, 2006; Fl. Gabon 44, Cyper.: 203, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 405, 2014.

syn.: *S. reflexa* Benth. 1849, nom. illeg., non Kunth 1816; *S. barteri* Boeckeler; *S. secans* sensu Piérart 1953: 49−51, pl. 2/23−26, non (L.) Urb., the true *S. secans* is a plant from tropical America.

Scrambling herb 3−10(−15) m long, *climbing* in dense festoons up trees and bushes, often forming impenetrable tangles; culms branched, sharply triangular, glabrous or sparingly hairy, angles with dense minute recurved hooks; leaves many, 20−30 cm long, 1−6 mm wide, with dense spike-like teeth on margins and midrib; inflorescence of solitary panicles, terminal or with 1−2 lateral, in addition loosely triangular in outline, 3−7 cm long, 1−5 cm wide, with peduncle to 4 cm long, scabrid and sparsely to densely hairy; male spikelets 4−6 mm long with pale to dark reddish glumes; female ones 6−8 mm long, glumes green or straw-coloured with dark reddish-brown, usually hairy margins; nutlets violet, smooth or ± wrinkled, sparsely to densely hairy.

Primitive- and secondary forests; dry forest; sandy bush; forest with *Macrolobium* or with *Selaginella*; swamps; very common in degraded secondary rain-forests; swamp forest; lowland forest; invading recent fallows and cultivations; forest edges; new growth on drained soils; sometimes abundant; ricefields; 0−1200 m alt.

Bioko/Fernando Poo; Madagascar, Comoros.

S. bulbifera Hochst. ex A. Rich., incl. var. *latifolia* (De Wild.) Piérart, var. *mechowiana* (Boeckeler) Kük., var. *pallidiflora* Ridl., and var. s*chweinfurthiana* (Boeckeler) Piérart, but *excl*. var. *hirsuta* Peter & Kük. (= *S. schliebenii*). – Confused with *S. schliebenii* (See that species below). – References: Renier, Fl. Kwango 1: 67, 1948 (as *S. buchananii*); Piérart (1953): 24−27; Nelmes in Kew Bull. 10: 438−441, 1955, p. maj. p.; Robinson in Kew Bull. 18: 503, 505, 1966, p. maj. p.; Lisowski, Fl. Rép. Guinée 1: 412, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 183, 2017); Kebede & al. in Biodiv. Res. Conserv. 29: 76, 2013 (Ethiopia); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Clarke, Ill. Cyper.: pl. 122/5−6, 1909; Repert. Spec. Nov. Regni Veg. Beih. 40/1, 5: pl. 90/2, 1937 (as *S. ferruginea*), and 40/1, 6: 531 (as *S. schliebenii* var. *ferruginea*); Piérart (1953): pl. 1/9−15 (nutlet, androgynous spikelet fig. 12); Robinson in Kew Bull. 18: 504, 1966; Haines & Lye, Sedges & rushes E. Afr.: 331, 1983; Berhaut, Fl. ill. Sénégal 9: 330, 1988; Fl. Eth. & Eritrea 6: 495, 1997; Akoègninou & al., Fl. analyt. Bénin: 117, 2006; Fl. Trop. E. Afr., Cyper.: 382, 2010; César & Chatelain, Fl. Tchad: 144, 2019; Bauters & al. (2019): 6, 11, text p. 14−15.

syn.: *S. atrosanguinea* Hochst. ex Steud.; *S. schweinfurthiana* Boeckeler, excl. var. *melanocarpa* Cherm. (= *S. hispidula*); *S. mechowiana* Boeckeler; *S. verdickii* De Wild.; *S. buchananii* Boeckeler, incl. var. *laevinux* Gross and var. *latifolia* De Wild.; *S. cenchroides* Hochst. ex C. B. Clarke 1894, nom. nud.; *S. bojeri* C. B. Clarke 1895, nom. nud.; *S. bulbosa* Hochst. var. *pallidiflora* Ridl., Transact. Linn. Soc., Sér. 2, Bot.: 167, 1884.

Rhizomatous or stoloniferous perennial herb, glabrous or hairy; culm bases ± woody, *thickened* into *bulb-like swellings connected by slender stolons*, 0,4−1 cm ∅, often covered with fibrous remains; culms 20−120 cm tall; basal leaf sheaths usually reddish-brown, without blade, upper sheaths with blades 15−30 cm long, 1−10 mm wide; inflorescence a narrow spike 2−20 cm long, usually simply spicate, but lower branches can be branched up to 4 cm long, inflorescence bearing 3−20 sessile erect glomerules 6−7 mm long, 5−10 mm ∅, spaced well apart, and comprising few to many bisexual dark reddish spikelets each 4−6,5 mm long; nutlet obovoid-subglobose, 1,5−2 × 1−1,5 mm, surface reticulate to fenestrate, grey to pale brown.

Dry open woodland and grassland to seasonally damp marshland; grassland often with shrubs; on all types of soil, but usually on loamy soils; scree; damp meadows consisting of only very slender grasses; inselbergs; 200−2400 m alt.

S. Africa; Madagascar; Yemen (Wood, Handbook Yemen flora: 332, 1997).

S. calcicola E. A. Rob.; Bauters & al. (2019): 15, fig. 3/j p. 11 (nutlet). – Icon.: Robinson in Kew Bull. 18: 497, 1966.

Annual nearly glabrous herb; culms erect, to 70 cm tall, c. 1 mm ∅ at base, trigonous, striate; leaves 1−2,5 mm wide; inflorescence 1−4,5 cm long, simply glomerate-spicate, contracted, glomerules confluent and not clearly separated, but sometimes branched with branches to 2 cm long; glomerules erect or spreading, 5−7 mm wide, with 5−9 spikelets; these 3,5−4 mm long; nutlet ± globose, 1,5−1,7 × 1,2−1,4 mm, reticulate-tessellate, greyish.

Seasonally damp boggy places on alkaline soils.

S. catophylla C. B. Clarke, incl. var. *chondrocarpa* Nelmes; Robinson in Kew Bull. 18: 501, 1966; Lisowski, Fl. Rép. Guinée 1: 412, 2009; Mesterházy in Lidia 7/5: 119, 2012; Bauters & al. (2019): 16. – Icon.: C. B. Clarke, Ill. Cyper.: pl. 122/1−4, 1909 (reproduced in Fl. Trop. E. Afr., Cyper.: 382, 2010, figs. 1−4, fig. 5 = *S. bulbifera*); Lowe & Stanfield, Fl. Nigeria: Sedges: 8, 1974 (as *S. aterrima*); Haines & Lye, Sedges & rushes E. Afr.: 329, 1983; Berhaut, Fl. ill. Sénégal 9: 328, 1988 (as *S. aterrima*); Gordon-Gray, Cyper. Natal: 180, 1995 (idem; nutlet); Fl. Gabon 44, Cyper.: 203, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 404, 2014 (as *S. aterrima*).

syn.: *S. hirtella* Sw. var. *aterrima* Ridl.; *S. aterrima* (Ridl.) Napper

Perennial herb 0,2−1,2 m tall; culms swollen at base and producing up to 4 slender ± fleshy *stolons* 1−3 mm ∅; leaves *mostly produced at* or near *culm base*, 1−2,5 cm long, 2−5 mm wide, glabrous to densely hairy; inflorescence simply spicate, 6−18 cm long, with many *reflexed* glomerules or 2−7 dark bisexual spikelets, 4−6 mm long; glumes *blackish*, *densely hairy*; nutlet c. 1,5 mm long, ± globose, smooth, greyish.

Seasonally wet grassland; bogs; granitic ledge; quite common on gneiss rocks (Guinea); fairly moist sand; damp sandy soil; very marshy places; *Loudetia* mat on flat rock; primitive forest; flat grassy area, margin of swamp forest; locally dominant in *Themeda triandra* grassland; swamp, permanently inundated, locally dominant; forest belt, in large quantity, in chalky fields; locally common with *Bulbostylis schimperiana*, *Eragrostis blepharoglumis* on the more eroded crests of hill slopes in *Loudetia kagerensis* grassland on reddish-brown sandy loam overlying

ironstone; not tolerant of strong competition from other perennial vegetation; 0−2500 m alt.

S. Africa.

Note: Piérart (1953: 23) treated *S. catophylla* C. B. Clarke and *S. hirtella* var. *aterrima* Ridl. as synonyms under (*S. hirtella* Sw. =) *S. distans* Poir. Also Napper (Kew Bull. 25: 445, 1971) confused these species.

Can be confused with the closely allied *S. distans*, which has, however, a well developed rhizome, leaves along the culms, and glumes "nearly pale". These two species may be sympatric (Gordon-Gray, o.c.: 181).

S. cheekii Bauters, Kew Bull. 73/2: § 27: 2, 2018 (figs. p. 4−5); Bauters & al. (2019): 17.

Annual herb forming small tufts; culms 13−22 cm tall, 0,4−0,6 mm ∅, trigonous, hairy with short whitish hairs; leaves tristichous, basal ones without blade or blade < 1 cm long; sheaths (cauline leaves) 1,5−2,5 cm long, reddish-purple, hairy; blades rigid, 7−10,5 cm long, 1,5−1,9 mm wide, white-hairy; inflorescence terminal, 3−5,5 cm long, glomerate-spicate, slightly branched in lower part with branches < 1 cm long; glomerules 4−9 on main axis, erect, with 2−6 spikelets; axil of the prophyll developed into a spikelet or small branch; spikelets androgynous, 3−4 mm long; glumes chestnut-brown; nutlet ± trigonous, obovoid, 1,4−1,9 × 1,1−1,2 mm, surface transversely wrinkled with translucent yellow-orange tissue.

Grassland on basalt pavement in thin, peaty, seasonally waterlogged soil in cracks between blocks; grassland with forest patches; rocky grassland; basalt inselbergs; volcanic rocks; 1900−2500 m alt.

Similar to *S. hispidior* (from Ethiopia), *S. interrupta* Rich. (only in C. & S. America). "All known specimens of *S. cheekii* were earlier wrongly identified" as of those species.

S. chevalieri J. Raynal – Icon.: Adansonia, Sér. 2, 4: 151, 1964; Berhaut, Fl. ill. Sénégal 9: 331, 1988.

Perennial stout herb; culms to 90 cm tall, 5−7 mm ∅, triquetrous with sharp to narrowly winged angles, strongly retrorsely scabrid above; basal leaves absent; cauline leaves with blades 20−35 cm long, 1−2 cm wide, ± flat, margins retrorsely scabrid; sheaths green, ample; inflorescence 60−75 cm long, with a terminal panicle 15−20 cm long and 3−4 lateral shorter panicles, shortly pedunculate, borne in the axils of leaf-like bracts; panicles made up of stiff erect pseudo-racemes 1−15 cm long, axes scabrid; spikelets axillary, in pseudo-fascicles, the 2 upper female, sub-sessile, the 2 lower male, conspicuously pedicellate; female spikelets c. 1 cm long with distichous glumes, male ones 5−6 mm long; nutlet globose, 4 mm ∅, glabrous, shining.

Sometimes in pure stands in large swamps of the "Niayes" (Senegal).

Similar to *S. lacustris* but nut globose (not ovoid-subtrigonal), 5−6 mm long (not 3−3,5 mm).

Herbarium material first determined as *S. racemosa* Poir.

Only known from two collections, one from Dakar to Rufisque; the other from low Casamance, without locality. Never collected since; perhaps extinct due to extension of cultivations.

S. chlorocalyx E. A. Rob.; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 531, 1966.

Annual herb; culms 12−60 cm long; leaves 2−3 mm wide, hairy; lateral panicles single at the nodes, on pendulous peduncles exserted to about 2,5 cm from the sheaths; male spikelets 2,5−3 mm long,

pale chestnut-coloured, on pedicels 3−6 mm long which become patent or reflexed at maturity; nutlet ovoid, 2,5−2,7 × 1,5−1,7 mm, glabrous, lacunos-tessellate, grey.

Shallow soils over sandstone or laterite which are wet for at least 8 months in the year; 1350−1400 m alt.

Close to *S. bambariensis*.

S. clathrata Hochst. ex A. Rich., incl. var. *scandens* Fiori 1941; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 134, 1899; Robinson in Kirkia 2: 189, 1961; idem in Kew Bull. 18: 534, 1966; Fl. Eth. & Eritrea 6: 498, 1997; ibid. 1: 266, 2009 (in key). – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 349, 1983.

Annual slender herb; culms 5−60 cm tall, c. 1−2,5 mm ∅, glabrous or minutely scabrid or short-hairy above; leaf blades 3−40 cm long, 2−6 mm wide, flat, margins and major nerves scabrid or short-hairy, apex hooded; lower sheaths pale or brown, upper green, glabrous or minutely scabrid; inflorescence of 1 terminal and several lateral panicles, 2−3 at each node on slender, often pendulous peduncles very unequal in length; male spikelets 4−6 mm long, chestnut-coloured; female 8−10 mm long; nutlet ovoid, 2−3 mm long, white to dark grey or black, minutely pitted or ribbed.

Newly cultivated swamps; weed in maize; damp grassland; seasonally moist depressions; marshy wooded meadows with *Isoetes aequinoctialis*; bogs, permanently wet or nearly so; 125−2400 m alt.

"Inconspicuous plant and probably more common than present records suggest".

S. delicatula Nelmes; Robinson in Kew Bull. 18: 498, 1966; Burrows & Willis, Pl. Nyika Plateau Malawi: 303, 2005; Fl. Trop. E. Afr., Cyper.: 394, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 340−341, 1983; Bauters & al. in Phytotaxa 227: 51, (text p. 50), 2015 (nutlet).

syn.: *S. spondylogona* Nelmes

Annual slender herb; culms tufted, 12−35 cm long, 0,2−0,8 mm ∅, glabrous; leaves 5−15 cm long, 0,3−1 mm wide, flattish to subconduplicate, glabrous, yellow-green, lower ones with sheaths purplish red and nearly blade-less; inflorescence 1−13 cm long, simply spicate, with 3−16 glomerules 1−7 mm wide, each of 1−8 spikelets; these 2,5−5 mm long, pale to reddish-brown; nutlet c. 1 mm long, dark red with raised parts translucent, often with 3 longitudinal ridges of translucent tissue.

Dominant in places on moist peaty shallow soil overlying laterite; river banks, below falls; among tall grass in deep red soil; very dry ground and among dry rocks; black loam seasonally damp; sandstone outcrops; 750−1440 m alt.

S. depressa (C. B. Clarke) Nelmes; Piérart (1953): 60 (as *S. racemosa* var. *depressa*); Raynal in Adansonia, N. S. 4: 153, 1964; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 643−644, 1985; Lisowski, Fl. Rép. Guinée 1: 412, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017); César & Chatelain, Fl. ill. Tchad: 142, 2019. – Icon.: Andrews, Flow. pl. Sudan 3: 370, 1956 (as *S. racemosa*); Fl. W. Trop. Afr., ed. 2, 3/2: 341, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Berhaut, Fl. ill. Sénégal 9: 342, 1988 (as *S. racemosa* subsp. *depressa*); Bauters & al. in Taxon 65: 456, 2016 (nutlet).

bas.: *S. racemosa* Poir. var. *depressa* C. B. Clarke

syn.: *S. racemosa* Poir. subsp. *depressa* (C. B. Clarke) J. Raynal

Perennial herb with rhizome 4−6 mm ∅; culms erect, 0,6−3 m tall, 3−8 mm ∅, triquetrous, angles scabrous; leaf blades 20−50 cm long, 1−3 cm wide, margins and main nerves scabrous (leaves very sharp-edged, thus the name 'bush knife' of the Niger delta); sheaths green, triquetrous, angles broadly winged, scabrous-sharp cutting; inflorescence a terminal panicle and 3−6 lateral panicles in the axils of leaf-like bracts, solitary on short, stiff, erect peduncles, shortly hairy, panicles 2,5−14 cm long, 1−4 cm wide; male spikelets c. 5 mm long, c. 2 mm wide; female 4−9 mm long; nutlet compressed, smooth, bluish-grey, shining, 4−6 mm ∅, with a circular groove round the top close to the style base, nutlet borne in a cup 5−6 mm ∅, with a ciliate edge. Young shoots mucilaginous.

Swamps in savanna and forest areas; forest gallery; lake sides; in or beside streams; humid palm grove; rice-fields; often on fresh water seepings; ? – 1400 m alt.

In gross morphology similar to *S. racemosa*.

S. distans Poir., excl. var. *interrupta* (Rich.) Kük. (= *S. interrupta*); Kirkia 4: 179, 1964; Raynal in Adansonia, Sér. 2, 16: 215, 1976, p.p. (nomenclature); Robinson in Kew Bull. 18: 502, 1966 (as *S. nutans*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015; Bauters & al. (2019): 19−20. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 345, 1972 (as *S. nutans*); Haines & Lye, Sedges & rushes E. Afr.: 330−331, 1983 (vars. *distans* & *chondrocarpa*); Troupin, Fl. Rwanda 4: 481, 1988; Gordon-Gray, Cyper. Natal: 180, 1995 (nutlet); Fl. Eth. & Eritrea 6: 495, 1997; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 343, 2008; Fl. Trop. E. Afr., Cyper.: 384, 2010; Fl. Gabon 44, Cyper.: 207, 2012; Fl. Mascareignes 202, Cypér.: 77, 2018.

syn.: *Hypoporum distans* (Poir.) Nees – See also under the varieties below. – Note: according to Bauters & al. (2019): 19, "the name *Scleria distans* Poir. [rhizomatous perennial] was for a long time erroneously used for … *Scleria hirtella* [annual]. Two of the type sheets of *Scleria distans* Poir. contain a mixed collection with mainly true *Scleria distans* but also some portions of *Scleria hirtella* Sw.".

Perennial herb hairy or glabrous, 20−100 cm tall with many culms given off at 0,2−2 cm intervals from a creeping rhizome > 10 cm long, 2−4 mm ∅; culm bases sometimes swollen or bulbous; lower leaf sheaths (pale) reddish-brown to purple, bladeless; blades to 20 cm long, 1−5 mm wide; inflorescence a lax spike 5−18 cm long, with 4−15 sessile *drooping glomerules* 5−6 mm long, 4−10 mm wide; spikelets 1−10, densely crowded, bisexual, a solitare female flower below the upper male flowers; glumes reddish-brown to blackish, 3−6 mm long, the outer ending in a long awn densely set with spreading brown hairs; nutlet greyish-violet tinged, c. 1,5 × 1 mm, smooth or with strong transverse wrinkles or tubercles. – The variation in the surface relief led to description of varieties based on such characters.

Rainforest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*, on moist slope along trail; permanently saturated bogs; damp or rather dry grassland; permanent swamps; woodland with areas of grassland; sometimes as a weed in swamps and brought into cultivation; black humus soils; marshy hollows near lake sides; pools in rocky outcrops; 0−2700 m alt.

S. Africa, Botswana; Madagascar, Mauritius; tropical and subtropical America [S USA, Texas, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 296, 2012), S. America (var *distans*)].

Comprises 3 vars.: – var. **chondrocarpa** (Nelmes) Lye [bas.: *Scleria hirtella* var. *chondrocarpa* Nelmes] with crowded culms with bulbous base, in NW E. Africa; – var. **distans** [syn.: *Hypoporum humile* Nees, nom. nud.; *Scleria nutans* Willd. ex Kunth; *S. conchroides* Kunth; *S. mollis* Kunth; *S. hirtella* Boeckeler 1874, nom. illeg., non Sw. 1788; *S. hirtella* var. *tuberculata* Boeckeler ex C. B. Clarke; *S. hirtella* sensu auctt. mult. afric., non *S. hirtella* Sw. 1788; for further synonyms, See World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew, and Bauters & al. (2019): 19], with culms spaced on the rhizome but without swollen bases, widespread in Africa, and in the Americas; – var. **glomerulata** (Oliv.) Lye [bas.: *Scleria glomerulata* Oliv.] with slender "sweetly scented, tufted culms", inflorescence 3−7 cm long with 3−4 glomerules, in N Uganda (type: Grant & Speke 668, Madi). Taxonomic status uncertain, more material needed. Bauters & al. (2019): 24, treat *S. glomerulata* as a separate species: "The type material does look different from *S. distans*."

S. dregeana Kunth; Nelmes in Kew Bull. 10: 426, 1955; Robinson in Kew Bull. 18: 508−510, 1966 (with note on type of *S. setulosa*); Fl. Trop. E. Afr., Cyper.: 389−390, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 336, 1983; Gordon-Gray, Cyper. Natal: 178, 180, 1995 (details); Bauters & al. (2019): 22 (nutlet), 21 (text).

syn.: *S. holcoides* Kunth; *S. meyeriana* Kunth; *S. caespitosa* Ridl.; *S. setulosa* Boeckeler

Perennial herb, usually tufted or sometimes with rhizome 1−2 mm ∅ bearing closely placed culms 0,2−1 m tall, 1−5 mm ∅; leaves 1−3 mm wide, glabrous or slightly hairy; inflorescence 3−10 cm long, simply spicate or sparsely to strongly branched, branches 3−5 cm long; glomerules closely set of 2−9 blackish spikelets each 4,5−6 mm long; nutlet ovoid, 1,4−2 × 1,1−1,3 mm, smooth or slightly tuberculate towards apex. – Sometimes forming a dense mat, all parts seeming to lie in one direction.

Seasonally or perennially wet grassland; valley bogs; stream banks; deeply herb-grown woods; 150−800−1900 m alt.

Variable plant (See Gordon-Gray, o.c.: 183): in branching of inflorescence, presence or absence of hairs, colour of glumes, surface structure of nutlet.

S. Africa, Botswana, Lesotho, Swaziland.

S. elongatissima Piérart, nom. nov. in Lejeunia, Mém. 13: 68, 1953. – Icon.: Piérart, ibid.: pl. 2/13 (nutlet; as *S. elongata*).

syn.: *S. elongata* Piérart 1953: 45, nom. illeg., non J. Presl & C. Presl 1828 (= *S. lithosperma*).

Herb (with rhizome ?), 1−1,5 m tall; culms 2−4 mm ∅, triquetrous, glabrous; leaves 25−35 cm long, 3−4 mm wide, glabrous; inflorescence a panicle with branches at 4−5 intervals up the plant, at each interval 2−3 sessile to long-pedunculate branches, 5−10 cm long, with flowering part 2−5 cm long with 10−15 spikelets, bracts leaf-like 5−10 cm long; male spikelets narrow, 6−7 mm long, with lower glumes mucronate; female spikelets 5−6 mm long, wider than the male ones; nutlet cylindric, 2 mm long, pilose.

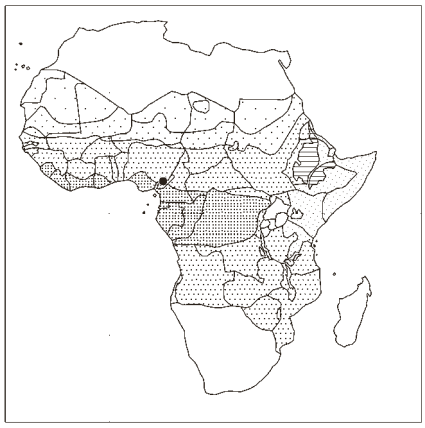
Humid savanna on peaty soil (pH5).

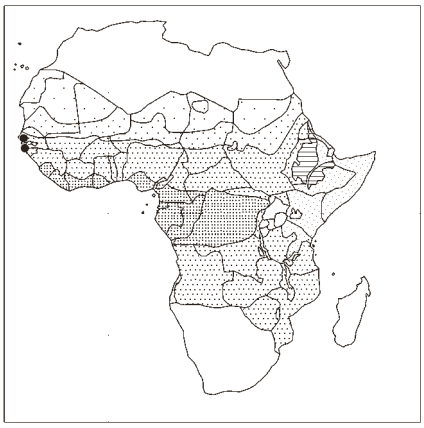
? Known only from the type (Duvigneaud 691).

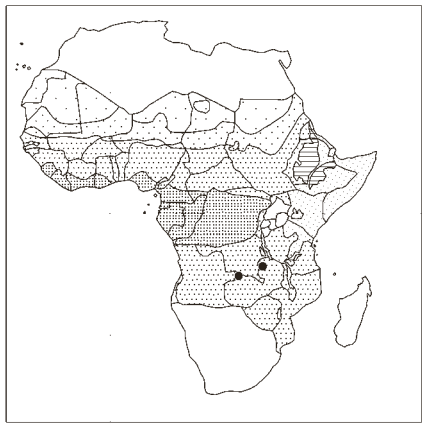
S. erythrorrhiza Ridl.; Robinson in Kew Bull. 18: 506, 1966; Fl. Trop. E. Afr., Cyper.: 387−388, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 333, 1983; Bauters & al. (2019): 22 (nutlet), 21, 23 (text).

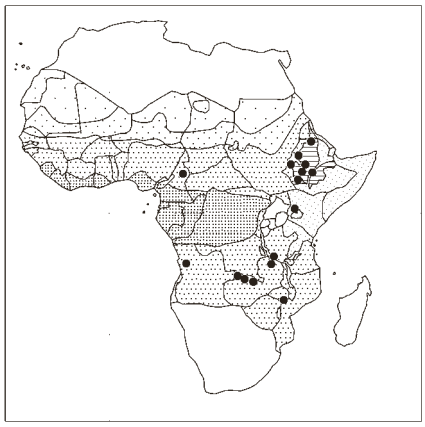
syn.: *S. kindtiana* Graebn.

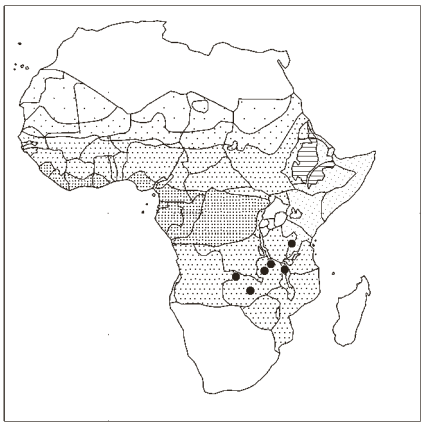
Rhizomatous perennial herb 0,3−1 m tall, with erect culms produced at short intervals; rhizome *usually reddish* with reddish roots, woody, straight, 3−6 mm ∅; leaves 2−6 mm wide, glabrous,

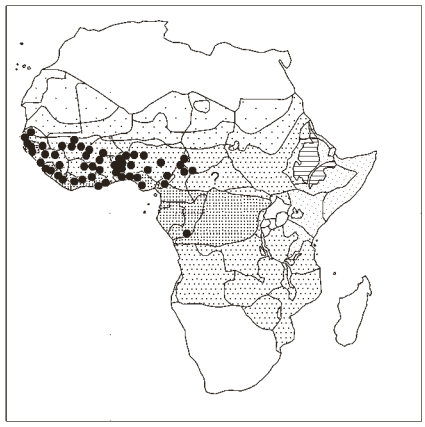

Scleria cheekii

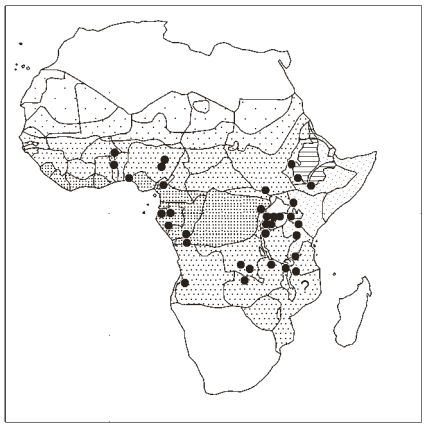

Scleria chevalieri

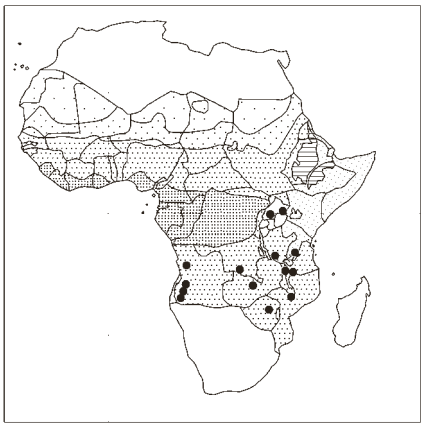

Scleria chlorocalyx

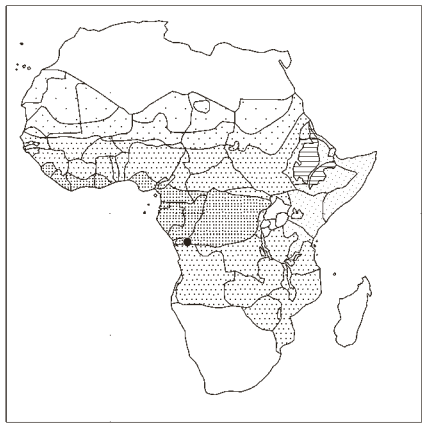

Scleria clathrata

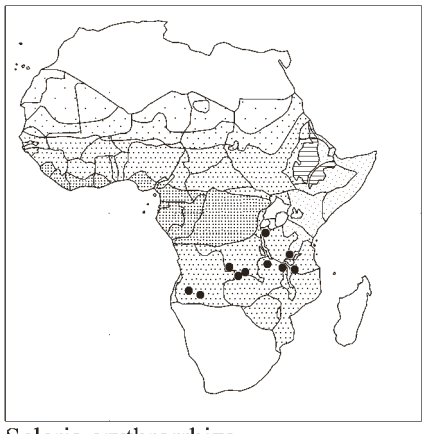

Scleria delicatula

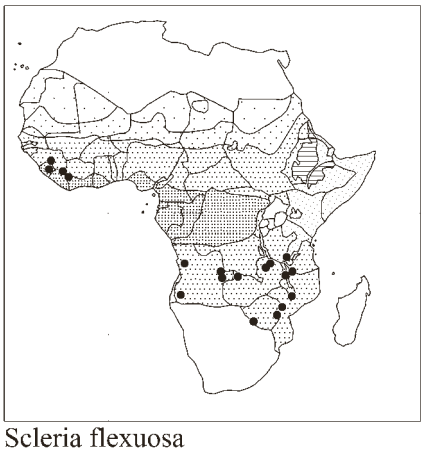

Scleria depressa

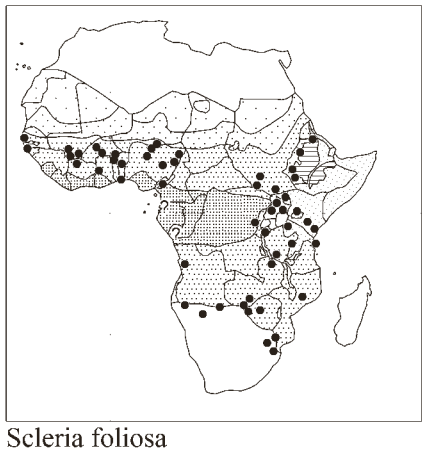

Scleria distans


Scleria dregeana


Scleria elongatissima


Scleria erythrorrhiza


Scleria flexuosa


Scleria foliosa

hairy or hispid; inflorescence simply spicate with many glomerules of 3−16 dark spikelets each 5−6 mm long, and occasionally a single glomerule on a short stalk in the axil of a leaf-like bract well below the main spike; glumes reddish, white-hairy; nutlet ovoid, 2−1 mm, apiculate, smooth; hypogynium conspicuously white.

Boggy grassland near termite mounds; permanently wet bogs, where it is characteristic of damp fringes; sporadic in wooded meadows; 900−1800 m alt.

S. flexuosa Boeckeler; Robinson in Kew Bull. 18: 505, 1966 (p.p. = ? excl. syn. *S. lateritica*); Napper in Kew Bull. 25: 443−444, 1971 (as *S. dieterlenii*, *S. flexuosa*, and ? *S. lateritica*); Jaeger & Adam, Végét. vascul. Mts Loma: 221, 1981, p.p. (exclud. syn. *S. schweinfurthiana*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 303, 2005 (as *S. dieterlenii*); Lisowski, Fl. Rép. Guinée 1: 412, 2009 (as *S. dieterlinii*, sic !). – Icon.: Adam, Fl. descr. Mts Nimba 6: 2145, 1983 (as *S. dieterlenii*); Haines & Lye, Sedges & rushes E. Afr.: 333, 1983; Bauters & al. (2019): 22 (nutlet), 23 (text).

syn.: *S. dieterlenii* Turrill; *S. lateritica* Nelmes (See Note below).

Perennial herb 15−65 cm tall; rhizome descending, c. 1 mm ∅, brittle, to 5 cm long, producing at its end a single fleshy tuber; tubers variable in size, ± spherical, 5−8 cm ∅; culms erect, glabrous or hairy; leaves 5−13 cm long, 1−2 mm wide, hairy; inflorescence simply spicate or shortly (to 1 cm) branched in lower half, 3−12 cm long with erect or spreading glomerules of 2−11 spikelets; these 3−5 mm long; glumes chestnut-brown, white-hairy; nutlet ovoid, trigonous, c. 1−1,5 × 1 mm, grey, strongly tuberculate-trabeculate.

Exposed rock faces in shallow pocket of soil; seasonally waterlogged ground, sometimes in shallow soils over sandstone or laterite outcrops; moss-turf water choked up on dripping rocks; doleritic escarpments with *Afrotrilepis pilosa*; in tufts on granitic subvertical wall; idem with *Polygala lecardii*, *Loudetia jaegeriana*, *Xyris* sp.; microturf with *Trichopteryx elegantula* moss; stony meadow, stony savannas; damp wooded meadows; swamps near river banks, in water, common; 450−2300 m alt.

Variable in colour of glumes and nutlets.

S. Africa, Lesotho.

Robust stands of *S. delicatula* can easily be mistaken for *S. flexuosa*.

Note: According to Bauters & al. (2019: l.c.) the type of *S. flexuosa* is very poorly conserved, and the underground parts were not collected. The specimens sometimes identified as *S. dieterlenii* have more contracted inflorescences, but intermediates with *S. flexuosa* can be found. However, *S. lateritica* may be a separate species, which seems to have a fleshy rhizome and not a tuber. More material is needed to confirm species status.

S. foliosa Hochst. ex A. Rich., incl. var. *major* Oliv.; Nelmes in Kew Bull. 11: 102, 1956; Robinson in Kirkia 2: 177, 1961 (excl. syn. *S. dillonii* Boeckeler, sic !); Robinson in Kew Bull. 18: 525, 1966; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 644, 1985; Fl. Eth. & Eritrea 6: 498, 1997, and 1: 266, 2009 (in key); Simpson & Inglis in Kew Bull. 56: 341, 2001; Harvey & al., Pl. Bali Ngemba: 137, 2004 (tentatively); Fl. Trop. E. Afr., Cyper.: 400, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Piérart (1953): pl. 2/4−5 (nutlet; text p. 40−41); Lowe & Stanfield, Fl. Nigeria: Sedges: 130, 1974; Haines & Lye, Sedges & rushes E. Afr.: 345, 1983; Berhaut, Fl. ill. Sénégal 9: 332, 1988; Clarke & Mannheimer, Cyper. Namibia: 64, 88 (map), 1999; Velayos & al., Fl. Guinea Ecuat. 11: 406, 137 (text), 2014; Bauters & al. in Taxon 65: 456, 2016 (nutlet).

syn.: *S. complanata* Boeckeler (See Nelmes in Kew Bull. 11: 111, 1956, under *S. poaeformis*); *S. dumicola* Ridl.; *S. perrieri* Cherm.

Loosely or densely tufted annual herb 0,2−2 m tall; culms 1−4 mm ∅, trigonous, glabrous or scabrid on angles; leaf sheath mouth extended into a tongue with dark brown margin; blades 6−40 cm long, 2−8 mm wide, glabrous, margin and veins (beneath) scabrid; inflorescence of a terminal and 1−3 lateral panicles, always single at nodes of upper leaves with mostly stiffly erect peduncles which may become ± pendulous after maturity, to 2 cm long; panicles 1−6 cm long, 1−2 cm wide, much shorter than bracts; bracteoles within the panicles rigid and erect 1−4 cm long, giving a characteristic prickly look to the fresh inflorescence but easily broken off when dry; male spikelets dark blackish-red, 4−5 mm long; nutlet ovoid, c. 4 × 2 mm, snow-white or grey, irregularly pitted, glabrous.

Loudetia arundinacea grassland with scattered trees, on rocky outcrop with wet flushes, thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals; damp spot, with *Sacciolepis africana*; flooded black cotton soil; rainforest; swamp edges; seasonally damp areas in wooded grassland; sometimes in standing water; rice fields; seepage areas; small pools on rocky outcrops; wet flushes or depressions in grassland; river banks; thicket-grown marshes; damp meadows; 0−2050 m alt.

Uncertain in Equat. Guinea, determination not confirmed; Namibia, S. Africa, Botswana, Swaziland; Madagascar; not in India as given by Prasad & Singh, Sedges Karnataka (India): 316−317, 2002 (Indian J. For. 32: 685, 2009; Singh & Day, eds., Fascicles of Flora of India, 27: 112, 2015; wrongly determined = *S. multilacunosa* T. Koyama, present in S India, Sri Lanka).

S. fulvipilosa E. A. Rob. – Icon.: Robinson in Kew Bull. 18: 518, 1966; Bauters & al. (2019): 22 (nutlet), 23−24 (text).

Perennial erect tufted herb; culm bases thickened and aggregated into a sub-woody mass; culms to 75 cm tall, 2 mm ∅, pilose below, subglabrous above; leaves 2−3 mm wide, pilose; inflorescence terminal to 29 cm long, simply branched, rarely with 1−2 lateral small simple panicles at nodes; spikelets androgynous and male, c. 1 cm long, glabrous, in compact glomerules of 3−6 spikelets; glumes glabrous; *nutlet* oblong, c. 2 × 1 mm, trigonous, dark brown to black, densely covered with brown *villous indumentum*.

Perennially wet sloping bogs, where it may be locally dominant, with *S. rehmannii*, *S. angustifolia*, *S. paupercula*, *S. procumbens*, *S. bequaertii*, *S. greigiifolia*, *S. laxiflora*. Sensitive to fires (plant without rhizome) and apparently rare; 1300−1350 m alt.

S. gaertneri Raddi – In current tropical African floras figuring as *S. pterota* or *S. melaleuca*. – Nelmes in Kew Bull. 11: 91, 1956 (*S. pterota*); Fl. Trop. E. Afr., Cyper.: 410−411, 2010 (*S. melaleuca*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011 (*S. pterota*); César & Chatelain, Fl. ill. Tchad: 142, 2019. – Icon.: De Wildeman, Pl. Bequaert. 4: 229, 1926 (nutlet; *S. congolensis*); Piérart (1953): 57−58 (text, map), pl. 3/1−2, 1953 (*S. melaleuca*); Lorougnon, Cyper. forest. Côte d'Ivoire (Mém. ORSTOM 58): 30, 35, 1972 (*S. pterota*); Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details; *S. pterota*); Berhaut, Fl. ill. Sénégal 9: 341, 1988 (idem); Longhi-Wagner & al. in Kew Bull. 65: 451, 2010; Fl. Gabon 44, Cyper.: 211, 213, 2012 (idem); Velayos & al., Fl. Guinea Ecuat. 11: 409, 2014 (*S. melaleuca*); Bauters & al. in Taxon 65: 456, 2016 (nutlet); Fl. Mascareignes 202, Cypér.: 77, 2018.

syn.: *S. melaleuca* Rchb. ex Schltdl. & Cham.; *S. ottonis* Boeckeler; *S. pratensis* Lindl. ex Nees, incl. var. *melaleuca* Nees; *S. pterota* C. Presl (nom. nud.) ex C. B Clarke 1900, nom. superfl.; *S. pterota* var. *submelaleuca* Kük.; *S. longifolia* Boeckeler; *S. congolensis* De Wild.; *S. margaritifera* Willd. 1805, nom. illeg., non Gaertner 1788; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial herb 0,3−1,2 m tall with a shortly creeping rhizome 3−4 mm ∅ with very short internodes obscurbed by the swollen culm bases; culms 2,5−3 mm ∅, sometimes slightly scabrid above on the angles; leaves shorter or longer than culms, 0,5−1 cm wide, margins and veins scabrid; sheaths glabrous to sparsely hairy, the basal ones ± blade-less; inflorescence of terminal and lateral panicles, the lateral 2−3 single at nodes, 2−7 cm long, 1−2 cm wide, on peduncles scarcely or very shortly exserted from the leaf sheaths; male spikelets 4−5 mm long; female glumes pale, usually with reddish streaks or completely blackish-red above, 3,5−5 mm long; nutlets white, ± globose, c. 2,5−2 mm, hypogynium 3-lobed.

Damp shady wooded places; swampy river sides; forest gallery; wet areas in forest; 0−800 m alt.

Bioko/Fernando Poo; Madagascar, Réunion; C. & S. America from S Mexico, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 296, 2012).

S. glabra Boeckeler 1888, non (Chapm.) Britton 1903; incl. var. *pallidior* J. Raynal; Nelmes in Kew Bull. 10: 435, 1955; Robinson in Kew Bull. 18: 495−496, 1966; Fl. Trop. E. Afr., Cyper.: 397, 2010. – Icon.: Piérart (1953): pl. 4/3−8 (nutlet); Haines & Lye, Sedges & rushes E. Afr.: 342, 1983; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 79, 2017; Bauters & al. (2019): 22 (nutlet), 24 (text); César & Chatelain, Fl. ill. Tchad: 144, 2019 (var. *pallidior*).

Entirely glabrous annual herb; culms 0,25−1,2 m tall; leaves 1−5−6 mm wide, flat to plicate-revolute or ± folded, lower sheaths bladeless or scarcely bladed; inflorescence paniculate, 4−26 cm long, often twice branched from the lower part, branches slender and often compound with 6−17 glomerules, each of 1−6 sessile clustered spikelets (these 3,5−5 mm long); glomerules often again branched, similar to those on main axis, 1−6 mm broad; upper glomerules closely placed, the lower to 4 cm apart; nutlet grey or black, trabeculate-tuberculate.

Seasonally or permanently boggy grassland; grassy savanna, inundated during rains, arid in dry season; drying dambo; soil white clayey (Zaire); 700−1950 m alt.

Variable plant, variation due to a fairly wide range of habitats; in drier habitats: inflorescence small, almost simple (close to *S. pergracilis*); in wetter places: inflorescence robust, with 200 glomerules or more. The relationship of *S. glabra* to *S. pergracilis* may well be compared to that of the American *S. tenella* Kunth ! to *S. verticillata* Muhl ex Willd. (fide Robinson, Kew Bull. 18: 496, 1966). *S. glabra* var. *pallidior* suggests a large *S. pooides*, it has brown-red spikelets like that species.

S. globonux C. B. Clarke; Nelmes in Kew Bull. 11: 104−105, 1956, p.p.; Robinson in Kirkia 2: 179−181, 1961; Robinson in Kew Bull. 18: 527, 1966; Fl. Trop. E. Afr., Cyper.: 402−403, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Piérart (1953): pl. 2/8 (nutlet), 43 (text); Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 348, 1983; Berhaut, Fl. ill. Sénégal 9: 332, 1988; Fl. Eth. & Eritrea 1: 267, 2009 (with comments on Schweinfurth collection).

Annual, sparingly hairy herb, 0,4−1 m tall; leaves to 17−40 cm long, 3−9 mm wide, flat or plicate, margins and ribs scabrid; inflorescence of 1 terminal panicle and 2−3 lateral panicles occurring singly at nodes on long flexuous hairy peduncles; male spikelets dark reddish-black, 3−6 mm long on pedicels of the same length or a little shorter; female spikelets 7−8 mm long with glumes straw-coloured with or without reddish streaks; nutlet globose, c. 3 × 3 mm, deeply lacunose-tessellate with ferruginous short hairs.

Dry swamp edges; savannas with temporarily foul soil; seasonal or permanently swampy areas in grassland; ? – 1000 – 1400 m alt.

Note: In Fl. Eth. & Eritrea 1: 267, 2009, there is the correction of the collection number Schweinfurth 2560, which is a misinterpretation of the written number. The correct number is **Schweinfurth 2500**.

S. globonux sensu Nelmes in Kew Bull. 11: 105, 1956, is partly *S. tessellata* var. *sphaerocarpa*.

Distinguished from *S. parvula* by the larger male spikelets and larger nutlet. Differs from *S. foliosa* by the nutlet surface.

(**S. glomerulata** Oliv.) – See under **S. distans** var. **glomerulata** (Oliv.) Lye above.

S. goossensii De Wild. – Icon.: De Wildeman in Rev. Zool. Bot. Africanies 14 (Suppl. Bot.): fig. 4, 1926; Piérart (1953): 35−36 (text), pl. 1/25 (nutlet); Fl. Gabon 44, Cyper.: 205, 2012 (nutlet).

Perennial tufted herb with short rhizome; culms 1,3−2 m long, c. 5 mm ∅, trigonous, glabrous or slightly hairy; leaves numerous, the lower bladeless; blade 20−40 cm long, 5−8 mm wide, flat or inrolled, densely hairy at least beneath; inflorescence of 1 terminal and 4−8 lateral panicles, 4−15 cm long, 2−4 cm wide; peduncles stout, erect, 0−8 cm long; male spikelets c. 6 mm long, brown, greenish or violet-brown; androgynus spikelets 4−6 mm long; female spikelets rare; nutlet globose, c. 2,5 × 2 mm, whitish, warty.

Inundated places; swampy areas in forest; often along rivers; flooded forests; in dry ground plants becoming liana-like; c. 300−500 m alt.

S. gracillima Boeckeler; Nelmes in Kew Bull. 11: 110, 1956; Robinson in Kirkia 2: 188−189, 1962; idem in Kew Bull. 18: 534, 1966; Fl. Trop. E. Afr., Cyper.: 404, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 130, 1974; Haines & Lye, Sedges & rushes E. Afr.: 349, 1983; Berhaut, Fl. ill. Sénégal 9: 333, 1988; César & Chatelain, Fl. ill. Tchad: 143, 2019.

syn.: *S. retroserrata* Kük., Bot. Jahrb. Syst. 56, Beibl. 125: 21, 1921 (Die Cyperaceen der Ule'schen Amazonas-Expedition ; Nº 8064, Juli 1909).

Annual, entirely glabrous, very slender inconspicuous herb 25−76 cm tall; culms 25−76 cm tall, 0,5 mm ∅; leaves 1−2 mm wide; inflorescence with lateral panicles 1−2 at each node, few-flowered; peduncles filiform, pendulous; male spikelets straw-coloured, 3−4 mm long, pedicels to 4 mm long; female glumes tinged with red; nutlet ellipsoid, c. 3 × 2 mm, smooth, glabrous, whitish-grey.

Boggy grassland; seasonally damp places; sands temporarily foul; ? – 900 m alt.

The synonym, *S. retroserrata* was described from N Brazil.

S. greigiifolia (Ridl.) C. B. Clarke; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 132, 1899 (as *Acriulus griegifolius*); Renier, Fl.

Kwango 1: 67, 1948 (as *Acriulus madagascariensis*); Clarke in Fl. Trop. Afr. 8: 509, 1902 (as *Scleria griegifolia*); Piérart (1953): 62 (as *Scleria friesii*, listed); Fl. Trop. E. Afr., Cyper.: 412−413, 2010. – Icon.: Ridley in Trans. Linn. Soc. London, Ser. 2, 2: pl. 22 facing p. 172, 1884 (as *Acriulus griegifolius* and *A. madagascariensis*); Kern in Blumea 12: fig. 1, 1963; Haines & Lye, Sedges & rushes E. Afr.: 358, 1983; Gordon-Gray, Cyper. Natal: 180, 1995 (nutlet); Cook, Aquat. & wetland pl. south. Afr.: 120, 2004; Fl. Eth. & Eritrea 1: 268, 2009.

bas.: *Acriulus greigiifolius* Ridl.

syn.: *A. madagascariensis* Ridl. 1883, non *Scleria madagascariensis* Boeckeler 1884; *A. titan* C. B. Clarke; *Scleria acriulus* C. B. Clarke, incl. fa. *leopoldiana* C. B. Clarke ex De Wild. (specim. Gillet 2818); *S. friesii* Kük.

Densely tufted perennial herb forming clumps 0,9−1,5 m tall, with long creeping rhizome 0,6−1 cm ∅, loosely covered with brownish lanceolate scales; culms triangular, 2−6 mm ∅, glabrous but scabrid on angles, base swollen, surrounded by persistent leaf-bases, some breaking up into fibres; leaves many, stiff, closely imbricate below, 50−80 cm long, 0,8−1,2 cm wide, margins coarsely serrate, ribs scabrid; sheaths scabrid; inflorescence of 1 terminal and many lax lateral copious panicles borne 4−7 at each node on slender pendulous scabrid, straw-coloured to dark reddish peduncles to 20 cm long; male spikelets much more numerous than the females, straw-coloured or chestnut above but reddish-brown to almost blackish below, 4,5−5,5 mm long; females with some straw-coloured obtuse glumes below, and 3 mostly reddish-black acuminate glumes above; nutlet white with red-violet blotches, ovoid, 4−5 × c. 3 mm, apiculate, glabrous, smooth.

Channels in between grass clumps in *Cyperus papyrus* and *Loudetia – Miscanthus* swamps; margins of boggy areas; lakeside forest; in Zambia often found with *S. bequaertii*, *S. laxiflora*, *S. procumbens*; deeply herb-grown marshes on river; ? -1150−1600 m alt.

S. Africa; Madagascar.

S. guineensis J. Raynal; Lisowski, Fl. Rép. Guinée 1: 412, 2009. – Icon.: Raynal in Adansonia, N. S. 4: 149, 1964; Bauters & al. (2019): 22 (nutlet), text p. 24−25.

Annual, loosely tufted herb, glabrous, 25−35 cm tall; roots blackish-red; culms 1−3, leafy, obscurely trigonous, 0,4 mm ∅; leaves filiform, 10−20 cm long, 1 mm wide, sheaths purple; inflorescence compound, paniculate, 5−10 cm long, 3−5 cm wide; panicle loose, copiously branched, with erect or spreading glomerules each with 1−2 spikelets; peduncles filiform, dark red, main peduncles to 6 cm long, secondary 1−1,5 cm long; spikelets androgynous or male, c. 5 mm long, purplish-red, acute; nutlet oblong-elliptic, c. 1,8 mm long, *surface longitudinally striate*.

Humid sandy places.

Known only from Guinea (2 collections cited); type collected in 1943.

Related to *S. glabra*, *S. pooides*, but nutlet longitudinally striate as in *Diplacrum africanum* but the latter species has *strong ribs*.

S. hildebrandtii Boeckeler; Nelmes in Kew Bull. 11: 109, 1956; Robinson in Kirkia 2: 188, 1961. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 350, 1983.

Loosely tufted annual herb 30−60 cm tall with red roots; culms 1−3 mm ∅; leaf sheaths glabrous; blades to 30 cm long, 4−8 mm wide, slightly scabrid on margins and midrib towards apex; inflorescence of 1 terminal and 2−4 lateral panicles, single or in pairs at each node; peduncles stout, erect, and when in pairs very unequal; male spikelets light brown, 4−6 mm long, pedicels 1−5 mm long;

female glumes pale with reddish streaks or patches, 5−6 mm long; nutlet whitish, ± smooth to slightly wrinkled or pitted, glabrous.

Grassland on black cracking soil; weed in cultivation; grassland bordering forest; 30−215 m alt.

Madagascar.

(**S. hirtella** Sw. 1788)

syn.: *Carex hirtella* (Sw.) J. F. Gmel.; *Hypoporum hirtellum* (Sw.) Nees; *Scleria distans* auctt. mult., non Poir.; etc.

Annual tufted herb, 20−40 cm tall; inflorescence terminal, glomerate-spicate, to 10 cm long; glomerules 5−10, sessile, erect; spikelets 3−4 mm long, few-flowered.

This American species was often confused with *Scleria distans* Poir. The history of this misinterpretation is given by Bauters & al. (2019): 25−26. We cite: "The first traceable misinterpretation … was made by Boeckeler [Linnaea 38: 439, 1874] who described *Scleria hirtella* Sw. as a perennial species with an elongated rhizome." Britton, in his revision of the N. American species (1885: 235), made the same mistake. "They both confused *Scleria distans* and *S. hirtella*. Britton (1885) also placed *Scleria distans* Poir. and *Scleria nutans* Willd. ex Kunth as synonyms under *Scleria hirtella* Sw. and wrongly based his assumption about this species on Boeckeler's … account. The wrong interpretation was further spread by Clarke … who also described this species as a rhizomatous perennial with reflexed glomerules". Robinson (Kirkia: 176−179, 1964) solved the question adequately. Further notes were given by Raynal (Adansonia 16: 214−216, 1976).

S. hispidior (C. B. Clarke) Nelmes; Nelmes in Kew Bull. 10: 435−436, 1955; Fl. Trop. E. Afr., Cyper.: 393, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015; Bauters & al. in Kew Bull. 73: § 27: 3, 2018 (in comparative table); Bauters & al. (2019): 26. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 339, 1983; Fl. Eth. & Eritrea 6: 496, 1997.

bas.: *S. hispidula* Hochst. ex A. Rich. var. *hispidior* C. B. Clarke

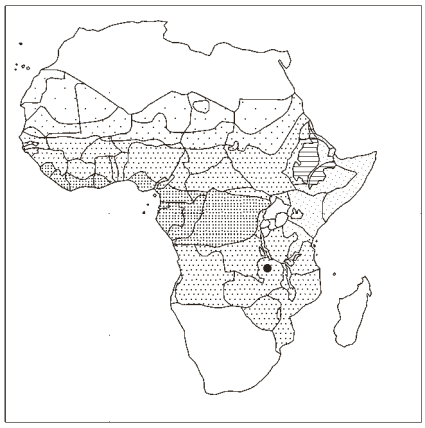
Annual herb 2−21 cm tall with red roots; culms 0,5−1 mm ∅; leaf sheaths green or brown; blades 4−15 cm long, 1−3,5 mm, *densely hairy*; inflorescence spicate or a narrow panicle 1−7 cm long, 1−6 cm wide with 2−9 sessile or shortly pedunculate glomerules, peduncles to 1,5 cm long, or more rarely a few spreading or reflexed lateral branches 1−4 cm long, each with 2−4−7 sessile glomerules; spikelets 3−6 mm long; glumes with *dense spreading black* or less often pale *hairs*; nutlet ± globose, c. 1,5 × 1 mm, surface rugose-trabeculate to muricate on a paler ground.

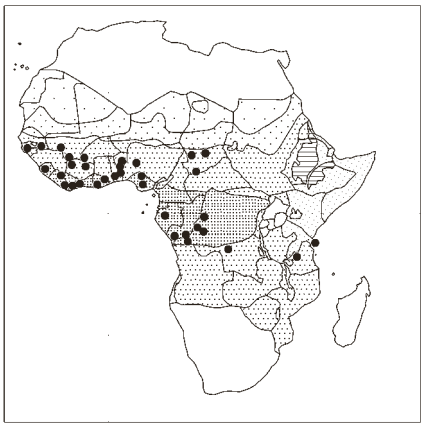
Damp grassland; shallow (swampy) pools on rocks; grassy meadows on river margins; sometimes subdominant; 1100−2600 m alt.

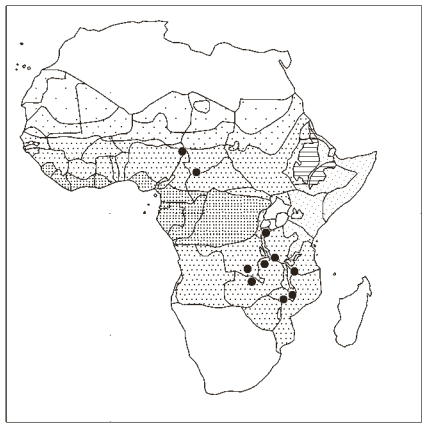
S. hispidula Hochst. ex A. Rich., excl. var. *hispidior* C. B. Clarke (= *S. hispidior*); Nelmes in Kew Bull. 10: 436, 1955; Robinson in Kew Bull. 18: 498, 1966; Fl. Trop. E. Afr., Cyper.: 394, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 340, 1983; Fl. Eth. & Eritrea 6: 497, 1996; Bauters & al. (2019): 22 (nutlet), 26 (text).

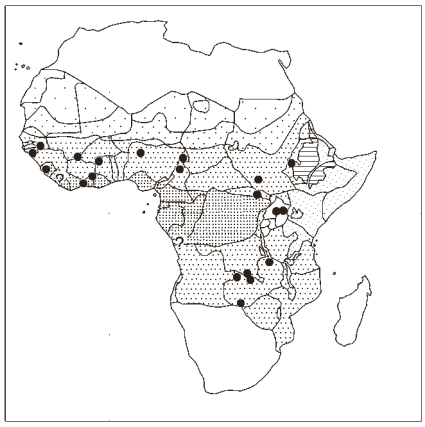
syn.: *S. interrupta* Schtdl. 1847, nom. illeg., non Rich. 1792; *S. schweinfurthiana* Boeckeler var. *melanocarpa* Cherm., ? and var. *major* Cherm.

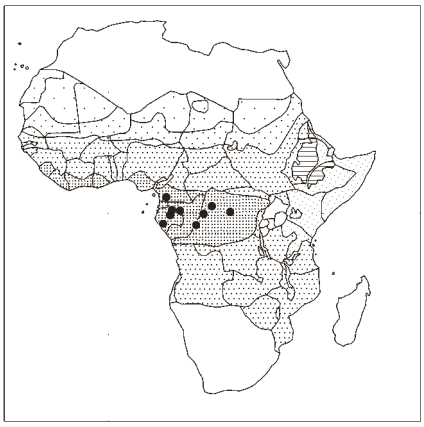
Glabrous or hairy annual herb 5−60 cm tall; culms < 1 mm ∅; upper leaf sheaths green, lower brown or reddish-brown; blades to 20 cm long, 1,3 mm wide, scabrid on margins towards apex; inflorescence simply spicate, 2−11 cm long, or with 1−2 lower lateral branches 2 cm long, with 2−10 sessile glomerules of 2−6 spikelets; these 3−4 mm long; female glumes awned, male not

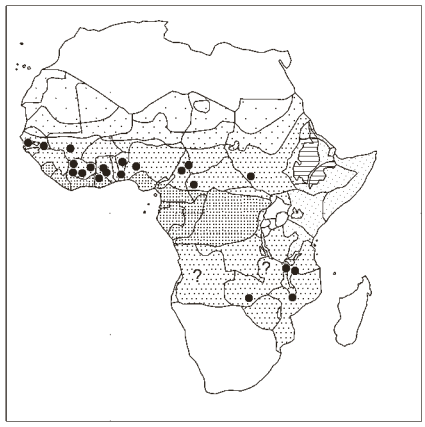

Scleria fulvipilosa

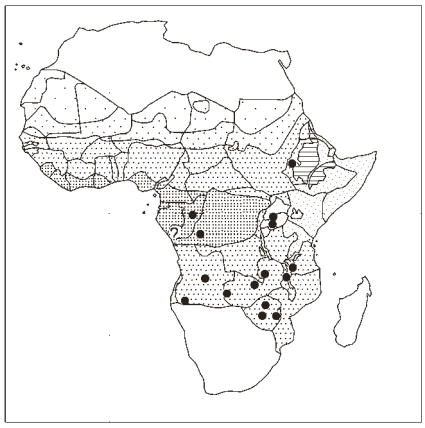

Scleria gaertneri

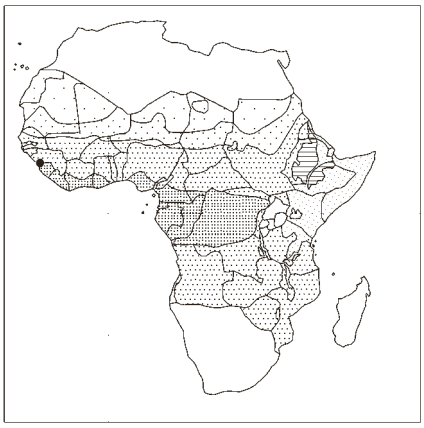

Scleria glabra

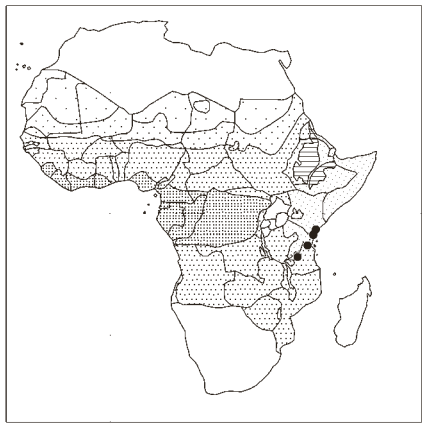

Scleria globonux

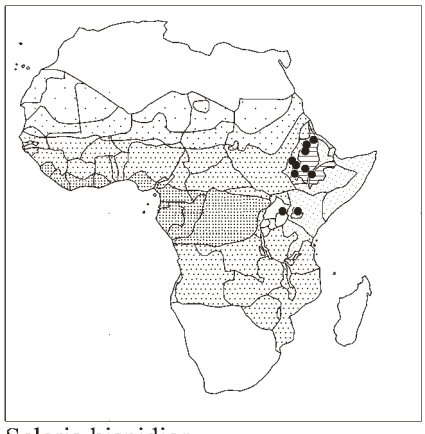

Scleria goossensii

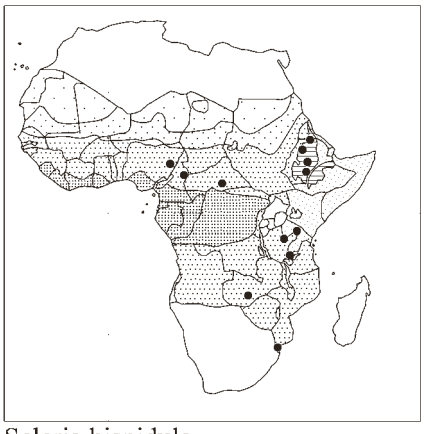

Scleria gracillima

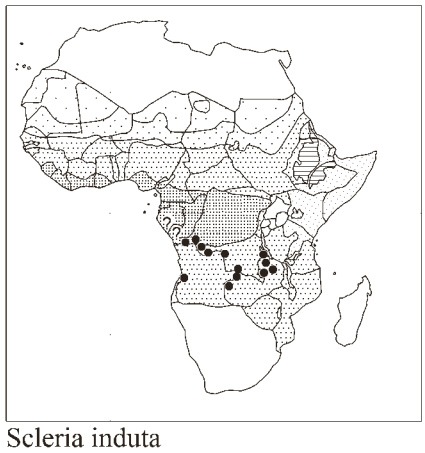

Scleria greigiifolia


Scleria guineensis


Scleria hildebrandtii


Scleria hispidior


Scleria hispidula


Scleria induta

so; awn of bracteole with *reddish bristles*; nutlet greyish-white, ± globose, c. 1,2 × 1,2 mm, finely reticulate.

Seasonally damp grassland; calcareous soils; sometimes closely associated with *S. calcicola*; apparently common around Lusaku (Zambia); black cotton soil; open woodland; 1050−2600 m alt.

S. induta Turrill; Nelmes in Kew Bull. 11: 97−98, 1956; Robinson in Kew Bull. 18: 545, 1966; Fl. Gabon 44, Cyper.: 206−207, 2012. – Icon.: Piérart (1953): 52−54 (text + map), pl. 3/6−9 (nutlet with disc, female spikelet), excl. syn. *S. barteri* Boeckeler (= *S. boivinii*).

syn.: *S. ovuligera* Rchb. ex Nees 1834, not validly publ., non Nees ex Boeckeler 1874 (= *S. naumanniana*); *S. angolensis* Turrill; *S. duvigneaudii* Piérart

Perennial, rather rigid, hairy herb; rhizome 3−3,5 mm ∅; culms thickened at base, 0,6−1 m long, 2−3 mm ∅; lower half completely hidden by sheaths, somewhat rough on angles, ± villous on sides; leaves numerous, much shorter than culms, 2−6 mm wide, flat or strongly revolute, often slightly scaberulous, at least above, on margins, midrib and also ± villous beneath, lower reduced to almost bladeless sheaths (vinaceous or dark reddish-brown, densely villous); inflorescence of 2−3 panicles, single at nodes, 2−9 cm long × 1,5−6 cm wide, loose, the terminal the largest and usually pyramidal, lateral ± oblong, branches and spikelets becoming mostly patently spreading, panicles distantly to very distantly spaced from one another on peduncles scarcely or shortly exserted from the bract-sheaths; male spikelets 0,7−1 cm long; female glumes 0,8−1 cm long, acuminate; nutlet ovoid, 4−5 × 3 mm, smooth, glabrous.

Open forest on oligotrophic sands with *Berlinia gilletii*, *Uapaca nitida*, *U. sansibarica*, *Pterocarpus angolensis*, *Marquesia macroura* (See also Bull. Séances Inst. Roy. Colon. Belge 22: 351−355, 1951); sandy, damp savanna; sometimes very widespread in valleys and on stream borders; in deep shade in moss carpet on Kalahari sand; *Cryptosepalum* woodland on sand; 1200 m alt. (Zambia).

Presence in Gabon not confirmed.

(**S. interrupta** L. C. Rich. 1792 non Michx. 1803 nec Schltdl. 1847). References: J. Raynal in Adansonia, Sér. 2, 16: 216, 1976 (nomenclature); Bauters & al. in Kew Bull. 73/2: § 27: 2, 5, 2018. Also Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 296, 2016 (as *S. hirtella* subsp. *interrupta*).

syn.: *Hypoporum interruptum* (L. C. Rich.) Nees; *Scleria distans* Poir. var. *interrupta* (L. C. Rich.) Kük.; *S. hirtella* subsp. *interrupta* (L. C. Rich.) M. T. Strong; *S. pinetorum* Britton; *S. doradoensis* Britton

This plant is "only known from Central and South America and is generally larger in habit [than *S. tricholepis*] and also lacks the translucent tissue covering the nutlet and the stipe", … "no true *S. interrupta* from the African continent has been observed" (Bauters & al., l.c.).

The African material usually named *S. interrupta* or *S. hirtella* (auct. non Sw.), is another species, i.e. *S. tricholepis* Nelmes that he described in Kew Bull. 10/3: 447, 1955. See under **S. tricholepis** below.

S. iostephana Nelmes, Kew Bull. 11: 94, 1956; Robinson in Kew Bull. 18: 544, 1966; Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 644, 1985; Akoègninou & al., Fl. analyt. Bénin: 118, 2006; Fl. Trop. E. Afr., Cyper.: 409, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 227, 2011. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 354, 1983; Fl. Gabon 44, Cyper.: 207, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 407, 2014; Bauters & al. in Taxon 65: 456, 2016 (hypogynium); Vande weghe & al., Pl. à fleurs Gabon: 169 fig. 453, 2016; César & Chatelain, Fl. ill. Tchad: 143, 2019.

Perennial herb 0,6−2,1 m tall; culm bases swollen to 5−8 mm forming an irregularly shaped knot, rarely culms in a straight line; culms 2−5 mm ∅, ± glabrous below, hairy and usually with sharp scabrid angles; leaves 30−60 cm long, 5−8 mm wide, scabrid on margins and ribs, sparsely to densely hairy beneath; sheaths hairy, scabrid on angles; inflorescence of a terminal and 2−3 lateral panicles placed singly at nodes, 3−7 cm long, 1,5−4 cm wide, on stiffly erect peduncles shortly exserted from the sheaths, to 3 cm long; male spikelets 4−5 mm long, glumes straw-coloured with dark reddish-brown sides, hairy particularly on margins; female spikelets 5−7 mm long, glumes dark reddish-brown with midrib and area near it straw-coloured or greenish, hairy on margin and midrib; nutlet whitish below, violet to blackish-blue above, ovoid, 3−4 × 2,5−3 mm, smooth.

Rain-forest; gallery forest; secondary rain-forest; dense or open woodland; grassland; boggy areas; river and lake banks, waterfalls; shady places along streams; edge of relict patches of evergreen forest ("mushitu"); open forest with *Gaertnera paniculata*; shady side of waterhole; grassy hill-slope; damp places on forest edge; woodland, sandy loam; 400−1200 m alt. –Sometimes straggling among shrubs.

The specific epithet refers to the bluish upper part of the nutlet.

"Piérart [1953] included this species in *S. naumanniana*; to me the two are clearly distinct from each other". The two are sometimes confused. "Specimens of *S. barteri* which lack achenes and entire stems are hard to distinguish from *S. iostephana*" (Robinson 1966: l.c.).

(**S. kindtiana** Graebn.) – See under **S. erythrorrhiza** Ridl. above.

S. lacustris C. Wright; Piérart (1953): 33−34 (text, map), pl. 1/20−23 (details), as *S. aquatica*; Nelmes in Kew Bull. 10: 422−423, 1955; Robinson in Kew Bull. 18: 517, 519, 1966; Naczi & Ford, Sedges: Uses…: 52, 105, 2008; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 57, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017). – Icon.: Berhaut, Fl. ill. Sénégal 9: 335, 1988; Cook, Aquat. & wetland pl. south. Afr.: 120, 2004 (inflorescence); Mesterházy in Lidia 7/5: 120, 2012; Fl. Gabon 44, Cyper.: 209 (nutlet), 210, 2012; Bauters & al. in Taxon 65: 456, 2016 (hypogynium).

syn.: *S. aquatica* Cherm.

Annual (probably), entirely glabrous herb with many adventitious roots at lower nodes where submerged in water; culms partly hollow, 0,6−1,8 m long, 0,4−1,2 cm ∅; leaf blades to 60 cm long, 1−2,2 cm wide, shiny, strongly scabrid on margins and major veins; inflorescence to 1 m long, of 1 terminal and 1−2 lateral panicles, the latter rising singly in the axils of leafy bracts; spikelets 4−6 mm long, mostly androgynous or male, but sometimes some female ones; female glumes apiculate or aristate, dark reddish-brown; nutlet ovoid, c. 3 × 2 mm, smooth.

Deep (>1 m) or shallow water at edges of swamps and lakes, with *Tristemma incompletum*, *Indigofera capitata*, *Sauvagesia erecta*, *Mimosa pigra*, *Clappertonia ficifolia* (Piérart fide Gilbert); 0−1140 m alt.

Botswana; Madagascar; tropical America from S USA (Florida), C. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 296, 2012), S. America to Paraguay. – In Florida, introduced (Naczi & Ford, l.c.) "it can be locally abundant and dominant in water up to 1 m deep, forming dense stands and

displacing native vegetation … *S. lacustris* seems to require recession of standing water in order to become established".

"The hypothetical origin of *S. lacustris* is in Africa" (Tremetsberger & al. in Edin. J. Bot. 76: 207, 2019).

S. lagoensis Boeckeler, incl. subsp. *canaliculatotriquetra* (Boeckeler) Lye; Nelmes in Kew Bull. 11: 84−86, 1956 (as *S. canaliculato-triquetra*); Robinson in Kew Bull. 18: 538−540, 1966 (with note on type); Fl. Eth. & Eritrea 6: 499, 1997; idem 1: 266, 2009 (in key); Fl. Trop. E. Afr., Cyper.: 407−408, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 58, 2018 (map by Schmidt & al. in Phytotaxa 304: 184, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Piérart (1953): pl. 2/18−21 (female flower, nutlet, stamen; as *S. canaliculato-triquetra* var. *clarkeana*), 48−49 (text); Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 353, 1983; Berhaut, Fl. ill. Sénégal 9: 336, 1988; Fl. Gabon 44, Cyper.: 210, 211 (nutlet) 2012; Velayos & al., Fl. Guinea Ecuat. 11: 408, 2014; César & Chatelain, Fl. ill. Tchad: 142, 2019.

syn.: *S. moritziana* Boeckeler; *S. canaliculatotriquetra* Boeckeler, incl. var. *clarkeana* Piérart, but excl. var. *adpressohirta* Kük. (= *S. adpressohirta*); *S. djurensis* Boeckeler; *S. cervina* Ridl.; *S. mayottensis* C. B. Clarke; *S. vanderystii* De Wild.

Perennial rhizomatous herb 0,5−1,8 m tall, but a true rhizome lacking; roots becoming tuberous at 3−10 cm distance from culm bases; culm bases swollen, to 5 mm ∅, forming a ± shapeless knotty mass, sometimes extended into a ± straight row; culms 2−3 mm ∅, scabrid; lower leaf sheaths purplish, bladeless; blades 20−50 cm long, 5−12 mm wide, usually sharply scabrid on margins and ribs, otherwise glabrous or hairy at base and on winged sheaths; inflorescence of 1 terminal and 3−6 lateral panicles 3−12 cm long, rarely all single but mostly 2−3 to each node on erect or pendulous, glabrous or scabrid peduncles to 6 cm long; male spikelets 5−6 mm long, glumes straw-coloured, sessile or nearly so; female spikelets 6−7 mm long, glumes straw-coloured or green, often strongly speckled with deep reddish-brown, midrib green; nutlet ± ovoid, 2,7−4,2 × 2−2,5 mm, smooth or faintly striate-lacunose, hairy towards base.

Shrubby savanna; *Terminalia*, *Combretum*, *Uapaca* woodland; forest edge grassland; *Hyparrhenia* savanna; humid grounds; esobe with *Imperata*; palm-grove; marshy and spongy places; damp grassland usually seasonally waterlogged; sometimes under light shade; savanna, in soil periodically very wet and very dry; 0−1900 m alt. – Mullenders described the association *Scleria vanderystii*, *Hyparrhenia rufa* (Bull. Agric. Congo Belge 40/1: 511, 1949).

Variable species. *S. canaliculatotriquetra* var. *adpressohirta* Kük. is perhaps a "well marked variety under *S. lagoensis*" (See under that species above).

Annobón; Swaziland; Madagascar, Comoros; tropical S. America.

S. laxiflora Gross; Robinson in Kew Bull. 18: 524, 1966; Fl. Trop. E. Afr., Cyper.: 406−407, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 352, 1983; Bauters & al. (2019): 22 (nutlet), 27 (text).

Glabrous perennial herb to 1 m tall; culm bases 3−4 mm ∅, packed closely together to form a caespitose or ± straight row; culms weakly erect or semi-prostrate, 1 mm ∅, branched at several nodes; leaves 0,5−2 mm wide, glabrous, sparsely hairy or with spreading dense hairs on midrib and margin; inflorescence to 50 cm long with 1 terminal and several lateral panicles, usually

singly at nodes on slender peduncles exserted to 8 cm from leaf sheaths; panicles spicate or very shortly branched near the base; spikelets 6−9 mm long, all unisexual (females always contain an aborted male flower); glumes straw-coloured, reddish-brown or pale vinaceous; nutlet dark coloured with raised parts of surface lighter, c. 2 × 1 mm, minutely transversely rugulose, papillate.

Perennially wet bogs, where the plant may form dense masses of semiprostrate vegetation dominating large areas; often growing with *S. bequaertii*, *S. procumbens*, these plants also with weakly erect habit and branched stems; 900−2150 m alt.

According to Fl. Trop. E. Afr., Cyper.: 407, 2010, there is doubt about the collection Milne-Redhead & Taylor 8944 from S Tanzania, Songea Distr. It has distinct close bulbous stem bases, but the nutlet is smooth and shining. It had previously been determined as *S. bequaertii* var. *levis*. Its taxonomic status is uncertain; more material is needed.

S. liberica Bauters, Molecular phylogenetic study of Scleria subgenus Hypoporum (Sclerieae, Cyperoideae, Cyperaceae) reveals several species new to science; PLoS ONE 13(9): e0203478: 19. 2018: p. 11−12. – Icon.: ibid. p. 11; Bauters & al. (2019): 22 (nutlet), 28 (text).

Annual tufted herb; culms erect, 12−26 cm long, 0,3−0,5 mm ∅, glabrous or very sparsely hairy (tiny white hairs); leaf blades to 10 cm long, equal to or longer than inflorescence, long white hairy on main nerves above, not hairy beneath, sometimes margins hairy; lower sheaths reddish-brown, upper ones pale green; inflorescence terminal, glomerate-spicate, 4−7,5 cm long, unbranched; glomerules 4−7, c. 1 per cm, erect, each with 2−5 spikelets; these 2,5−4 mm long, androgynous; flowers all unisexual; nutlet ± globose, c. 1 × 1 mm, surface trabeculate, young nutlets strongly reticulate.

Savanna; woodland on very shallow soils and bare rock; seeping slope of rocks and short grasses and sedges; edge of low swampy forest; near sea-level−900 m alt.

Confused with the American *S. interrupta*.

S. lithosperma (L.) Sw. var. **lithosperma**; Nelmes in Kew Bull. 10: 421−422, 1956; Robinson in Kew Bull. 18: 517, 1966; Simpson & Inglis in Kew Bull. 56: 341−342, 2001; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 58, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017). – Icon.: Clarke, Ill. Cyper.: pl. 123, 1909; Piérart (1953): pl. 4/9 (nutlet), 34−35 (text); Lorougnon, Cypér. forest. Côte d'Ivoire (Mém. ORSTOM 58): 31, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 343, 1983; Fl. Eth. & Eritrea 6: 498, 1997; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 93, 2002; Fl. Trop. E. Afr., Cyper.: 398, 2010; Fl. China 23, Ill.: 352, 2012; Fascicles Flora of India 27: 57, 2015; Bauters & al. (2019): 22 (nutlet), 28−29 (text).

bas.: *Scirpus lithospermus* L.

syn.: *Schoenus lithospermus* (L.) L.; *Carex lithosperma* (L.) L.; *Hypoporum lithospermum* (L.) Nees; *Scleria lithosperma* (L.) Sw. subsp. *lithosperma* T. Koyama; *S. lithosperma* var. *filiformis* (Sw.) Britton; *S. filiformis* Sw. (See note on this name in Bauters & al. 2019: 29); *S. puzzolanea* K. Schum.; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Often rather hairy perennial herb 30−90 cm tall, with short rhizome; culms 1−2,5 mm ∅, minutely scabrid, bases sometimes slightly swollen and forming a ± caespitose mass; lower leaf sheaths brown, upper green; blades to 10−35 cm long, 1−5 mm

wide, scabrid on margin at least near tip, otherwise glabrous or hairy; inflorescence of 1 terminal and 2−3 lateral panicles the latter arising singly from leafy bracts with cluster of 1−3 spikelets, each 4−5 mm long, green or brownish, all androgynous; glumes straw-coloured to pale green or light brown, female often with green midrib, 3−5 mm long, scabrid at least on midrib and margins; nutlet ± ovoid, c. 2,5 × 1,5 mm, smooth.

Shady and open places in evergreen forest; forest and plantation edges; *Brachystegia* woodland; rocky outcrops in wooded grassland; termite mounds in woodland; secondary clearings; locally dominant with *Panicum pleianthum* in the more open places; gneiss rocks with grey sandy loam; dry evergreen forest surrounded by coarse grassland, frequent; sandy soil in lately cleared forest, common; ravine by stream; also forest in deep shade; weed in perennial crops, waste places, rice fields; 20−1050 m alt.

Tropics and subtropics worldwide. Madagascar, Comoros; Indian Ocean Isl.; Asia from India/Sri Lanka (E-wards), Malaysia, Indonesia, New Guinea, Philippines, Australia, Pacific Isl.; N. America (SE USA), C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 297, 2012).

Var. **linearis** Benth. [syn.: subsp. *linearis* (Benth.) T. Koyama; *S. lithosperma* var. *roxburghii* C. B. Clarke; etc.], with broader leaves, and nutlet transversely rugose or ± irregularly reticulate, occurs in tropical Asia and N Australia (Queensland).

S. longispiculata Nelmes; Robinson in Kew Bull. 18: 506, 1966; Clarke & Mannheimer, Cyper. Namibia: 64, 88 (map), 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 303, 2005; Fl. Trop. E. Afr., Cyper.: 388, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 334, 1983; Bauters & al. (2019): 22 (nutlet), 29−30 (text).

Perennial herb 0,6−1,2 m tall with long creeping woody rhizome 4−6 mm ∅, producing erect culms at 0,5−2 cm intervals; culm bases slightly swollen; leaves 2−5 mm wide, hairy or hispid; inflorescence simply spicate, 5−10 cm long with many glomerules 1−2 cm apart; each glomerule of 2−6 greenish or pale brown minutely hispidulous spikelets 8−9 mm long; glumes chestnut with green midrib, hispidulous pubescent; nutlet brown with strips of darker brown, ovoid, c. 4 × 2 mm, smooth.

Sandy ground in *Brachystegia-Uapaca* woodland; in fairly narrow belt of well-drained sandy soil where *Brachystegia* woodland gives place to seasonally waterlogged grassland (*S. longispiculata* is confined to this transitional zone); in the loose sand the plant is clearly able to spread rapidly by its rhizomes (Robinson, l.c.).

N Namibia.

S. lucentinigricans E. A. Rob. in Kew Bull. 18: 530, 1966; Lock in Kew Bull. 70/4: § 46: 2, 2015.

Annual erect nearly glabrous herb; culms to 85 cm tall; leaves 1,5−5 mm wide, ± rigid, folded, glabrous or sparsely villous with for the most part setaceous hairs; inflorescence interrupted, 53 cm long between basal and upper panicles; lateral panicles single at nodes 1−3, pendulous on peduncles to 5−9 cm long exserted from sheaths; male spikelets ovate, 3−4 mm long on pedicels 6−9 mm long, pale or black; female glumes 4−5 mm long, ovate, straw-coloured with strong green- or dark brown keel; nutlet ± ovoid, c. 3,5 × 2 mm, glabrous, shining, black.

Seasonally boggy ground, growing with *S. globonux*, *S. bambariensis*, *S. tessellata* var. *sphaerocarpa*.

The specific epithet is taken from the shining black nutlets which are a striking feature of the plant in the field.

Near *S. bambariensis*.

S. melanomphala Kunth, incl. var. *macrantha* (Boeckeler) C. B. Clarke and fa. *oculo-alba* C. B. Clarke; Renier, Fl. Kwango 1: 67, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 278, 1955; Nelmes in Kew Bull. 11: 88−90, 1956; Robinson in Kew Bull. 18: 546, 1966; Jaeger & Adam, Végét. vascul. Mts Loma 2: 228, 1981; Simpson & Inglis in Kew Bull. 56: 342, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 303, 2005; Lisowski, Fl. Rép. Guinée 1: 412−413, 2009; Fl. Trop. E. Afr., Cyper.: 411−412, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Piérart (1953): pl. 1/26−31, p. 36−38 (text); Lorougnon, Cyper. forest. Côte d'Ivoire (Mém. ORSTOM 58): 28, 35, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 130, 1974; Haines & Lye, Sedges & rushes E. Afr.: 356−357, 1983; Troupin, Fl. Rwanda 4: 481, 1988; Gordon-Gray, Cyper. Natal: 178, 180, 1995; Fl. Eth. & Eritrea 6: 500, 1997; Fl. Gabon 44, Cyper.: 213, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 410, 2014; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 79, 2017.

syn.: *S. melanocephala* Drège; *S. macrantha* Boeckeler 1879, nom. illeg., non Boeckeler 1858; *S. centralis* Cherm.; *S. longigluma* Kük.; *S. tisserantii* Cherm.

Tussock-forming evergreen perennial herb, 0,6−2,4 m tall from a rhizome 4−6 mm ∅; culms to 1 cm ∅, glabrous, but angles minutely to strongly scabrid; lower leaf sheaths reddish with or without very short densely hairy blades; inflorescence of 1 terminal and 5−9 lateral often drooping lanceolate panicles 2−10 cm long, 1−3 cm wide, borne singly or 2−3 at nodes on pendulous peduncles exserted to 30 cm from sheaths; male spikelets 0,8−1,3 cm long, ± sessile; glumes straw-coloured with usually dark reddish-brown margins and green scabrid midrib; females similar with glumes 1−1,2 cm long, midrib hispidulous or hairy; nutlet white, shining, like alabaster, ovoid, c. 4−5 × 3 mm, smooth, glabrous.

On laterite near water holes; wet alluvium; in relict *Syzygium* evergreen riverine forest, in shade; bog in very thick grass and bushes; swamp or marshy grassland; river and lake edges; permanently wet swamps; ricefields; *Raphia* formations; fallow sides; sometimes in large floating formations; cataracts of streams; 100−1800 m alt.

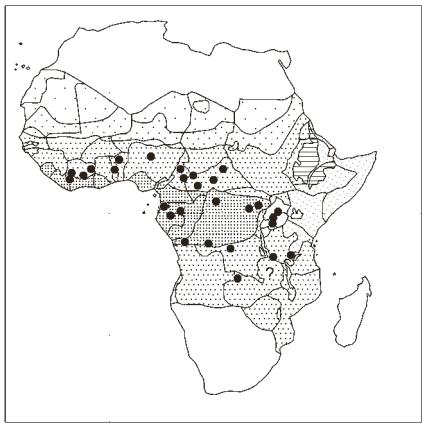
Variable species.

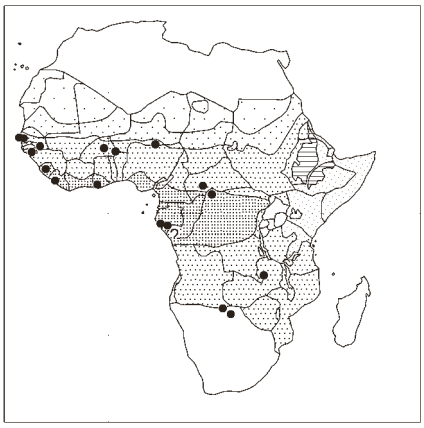
S. Africa, Botswana, Swaziland; Madagascar; N S. America S-wards to Argentina.

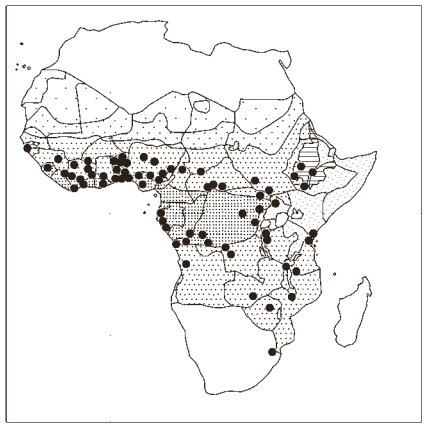
S. melanotricha Hochst. ex A. Rich., incl. var. *glabrior* C. B. Clarke and var. *grata* (Nelmes) Lye; Nelmes in Kew Bull. 10: 452−453, 1956; Robinson in Kew Bull. 18: 501, 1966; Harvey & al., Pl. Bali Ngemba …: 137, 2004; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Fl. Trop. E. Afr., Cyper.: 392−393, 2010; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 150, 2010 (var. *grata*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 58, 2012 (*s. loco*); Mesterházy in Lidia 7/5: 121, 2012 (Liberia); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Piérart (1953): pl. 1/2 (nutlet), p. 20−21 (text); Lowe & Stanfield, Fl. Nigeria: Sedges: 134, 1974; Haines & Lye, Sedges & rushes E. Afr.: 339, 1983; Berhaut, Fl. ill. Sénégal 9: 337, 1988; Fl. Eth. & Eritrea 6: 496, 1997; Akoègninou & al., Fl. analyt. Bénin: 119, 2006; Fl. Gabon 44, Cyper.: 214, 215 (nutlet), 2012; Velayos & al., Fl. Guinea Ecuat. 11: 411, 2014; Bauters & al. (2019): 31 (nutlet), 30 (text); César & Chatelain, Fl. ill. Tchad: 144, 2019.

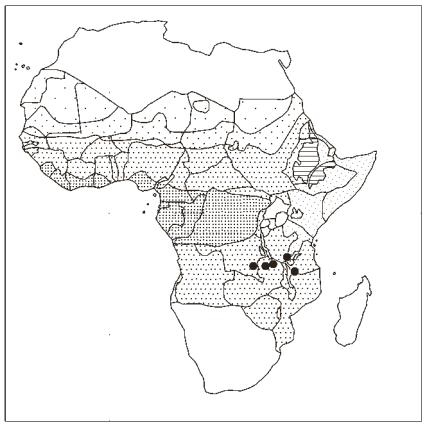
syn.: *S. grata* Nelmes; *Aegopogon gracile* Peter, nom. nud.

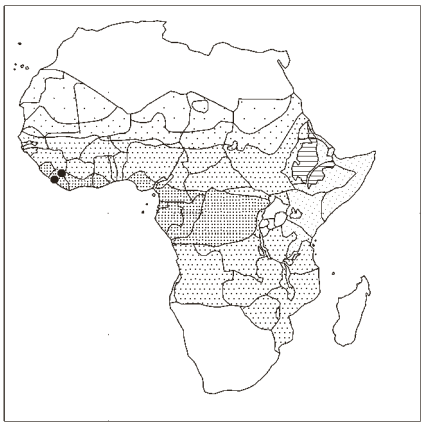
Annual hairy herb 6−60 cm tall; culms erect, 0,5−1,5 mm ∅, reddish at base; lower leaf sheaths brown, upper green; blades to 30 cm long, 1−3 mm wide, densely hairy; inflorescence spicate, rarely shortly branched in lower part, 3−20 cm long, with

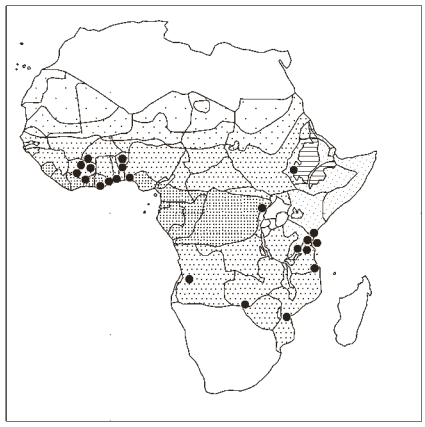

Scleria iostephana

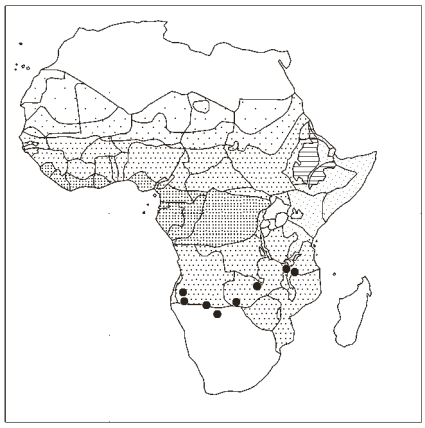

Scleria lacustris

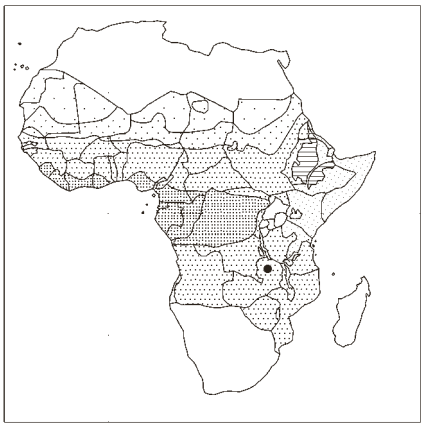

Scleria lagoensis

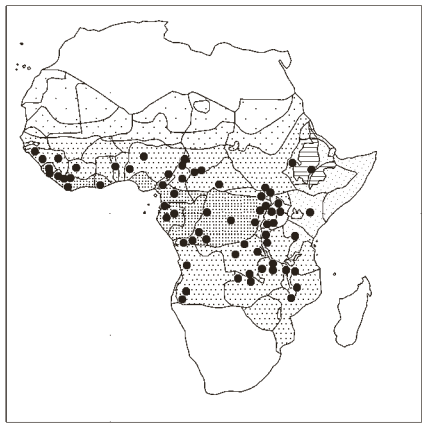

Scleria laxiflora

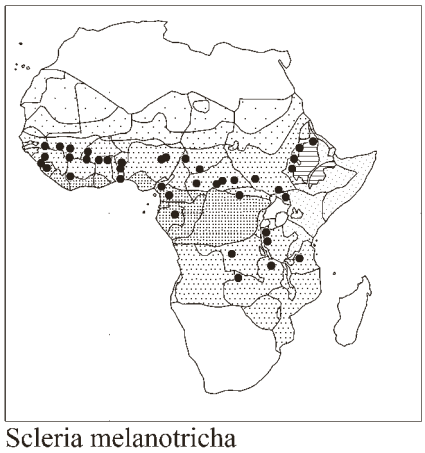

Scleria liberica

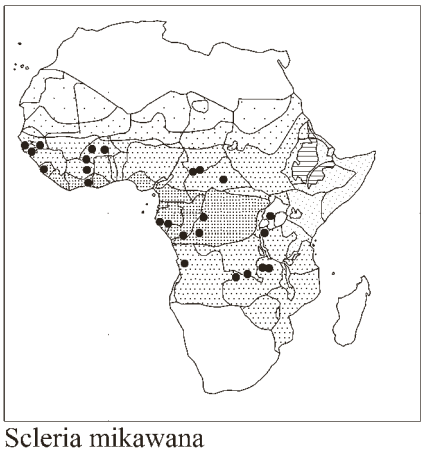

Scleria lithosperma var. lithosperma

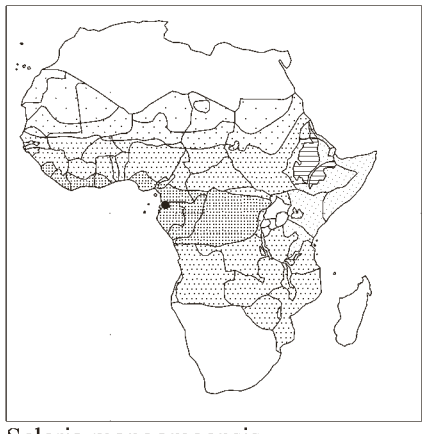

Scleria longispiculata


Scleria lucentinigricans


Scleria melanomphala


Scleria melanotricha


Scleria mikawana


Scleria mongomoensis

4−15 sessile or very shortly stalked spreading or usually reflexed glomerules of 1−12 dark spikelets, these 5−19 mm long; glumes pale green or reddish, 4−7 mm long, with dense brown or black hairs and prominently awned; nutlet ± ovoid, c. 1 × 0,8 mm, tuberculate or trabeculate.

Rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals; seasonally or permanently damp grassland; granitic rocks in wooded savanna; in lateritic gravels at edge of exposed rock; shallow soils; often in seepage zones; dry grassland; stream sides in savanna; saturated soils of river-bank; open wet sand; iron ore quarry; 7−2000 m alt. – The "new phytosociological order, the *Sclerio melanotrichae – Habenarietalia procerae*" was described by Parmentier & Müller in Phytocoenologia 36: 573, 2006. This community has a height of 1 m (o.c.: 581), it is characteristic of grasslands and herbaceous fringes on inselbergs in Atlantic central Africa (Ivory Coast to Ghana). – This *S. melanotricha* is probably identifcal to *S. mongomoensis* Bauters (See that species below).

S. mikawana Makino; Nelmes in Kew Bull. 11: 107, 1956; Robinson in Kirkia 2: 185−186, 1961; Robinson in Kew Bull. 18: 525−526, 1966; Fl. Trop. E. Afr., Cyper.: 400−401, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 58, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017); César & Chatelain, Fl. ill. Tchad: 143, 2019. – Icon.: De Wildeman, Pl. Bequaert. 4: 230 (nutlet), 1927 (as *S. glabroreticulata*); Piérart (1953): pl. 2/9 (stamen), 10 (nutlet), 22 (male spikelet; idem); Haines & Lye, Sedges & rushes E. Afr.: 345−346, 1983; Berhaut, Fl. ill. Sénégal 9: 337, 1988; Fl. Gabon 44, Cyper.: 214, 2012; Fascicles Flora of India 27: 99, pl. 10/4 (nutlet), 2015.

syn.: *S. glabroreticulata* De Wild.

Annual loosely to densely tufted rather stiff herb 0,3−2 m tall; culms 2−3 mm ∅; lower leaf sheaths purplish, blade-less; blades to 20 cm long, 3,7 mm wide, glabrous; inflorescence of 1 terminal panicle and 2−3 laterals borne singly at nodes, 2−5 cm long, 1−2 cm wide, peduncles erect and not much exserted from sheaths; male spikelets usually pale chestnut, 3−6 mm long, with dark reddish pedicels 4−14 cm long; glumes straw-coloured, glabrous, midrib green; nutlet white to grey or pale brown with 3 darker longitudinal stripes, ± globose, c. 3 × 2,4 mm, glabrous but appearing hairy due to many minute brownish glands.

Swampy grassland on lake margin; among thatch grass in flooded laterite pan area; on gneiss rock on margin of pool; on alluvial mud during dry season; higher marshy wooded meadows; sometimes with *S. lacustris*; may grow in water to 1 m deep; 0−1140 m alt.

India, Sri Lanka, Thailand, Japan, New Guinea.

S. mongomoensis Bauters, PLoS ONE 13(9): e 0203478: 23, 2018. – Icon.: ibid.: 13, 14; Bauters & al. (2019): 31 (nutlet), p. 30, 32 (text).

syn.: *S. melanotricha* sensu auct., non Hochst. ex A. Rich. (coll. Porembski S. 3560, 3562, Equatorial Guinea).

Annual decumbent herb, rooting on the creeping stem; culms 20−90 cm long, 0,5−1,2 mm ∅, densely white-hairy; leaf blades to 20 cm long, 1,5−3,5 mm wide, densely hairy; sheaths purplish, long white-hairy; inflorescence terminal, simple, glomerate-spicate, to 12 cm long; glomerules 4−7, each with 2−5 spikelets; glomerule bract to 6 mm long, with awn 3 mm long and white-hairy; spikelets androgynous, 3−5,5 mm long; glumes densely hairy, often with blackish hairs; flowers unisexual; nutlet ± globose, c. 1,5 × 1,4 mm, greyish, tuberculate-trabeculate.

Granite inselberg, rock pool edge with ephemeral flush vegetation; 660 m alt.

Easily confused with *S. melanotricha* (plants collected under that name).

S. monticola Nelmes ex Napper, Kew Bull. 25: 444−445, 1971.

Annual (probably) herb, without rhizome, solitary or tufted; culms erect, 30−60 cm tall, glabrous, trigonous; leaf sheaths glabrous or shortly pilose; blades 1−2 mm wide, glabrous, basal blade reduced; inflorescence simple, glomerate-spicate, 3−5,5 cm long, with 3−7 glomerules; these erect or spreading, to 1 cm long, each with 2−10 spikelets each 4−7 mm long; glumes glabrous, male 3−4 mm long; nutlet obovoid, 1,1−1,8 × 1−1,4 mm, surface trabeculate.

Grassland; on shallow soil over doleritic rocks; 1725− c. 1900 m alt.

S. naumanniana Boeckeler; Renier, Fl. Kwango 1: 67, 1948 (as *S. ovuligera*); Nelmes in Kew Bull. 11: 96, 1956; Cable & Cheek, Pl. Mt Cameroon: 156, 1998; Simpson & Inglis in Kew Bull. 56: 342, 2001; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Fl. Trop. E. Afr., Cyper.: 409, 2010 (in note under *S. iostephana*, misidentifications); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Cat. pl. vascul. Burkina Faso: 58, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017). – Icon.: Bull. Soc. Roy. Bot. Belg. 59: pl. IV, 1927; Piérart (1953): pl. 3/3−5 (nutlet, ligule), 54−56 (text + map); Lorougnon, Cypér. forest. Côte d'Ivoire (Mém. ORSTOM 58): 34−35, 1972; Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Berhaut, Fl. ill. Sénégal 9: 338−339, 1988; Mesterházy in Lidia 7/5: 122, 2012; Fl. Gabon 44, Cyper.: 215, 217, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 412, 2014; Vande weghe & al., Pl. à fleurs Gabon: 169 (fig. 454), 2016.

syn.: *S. ovuligera* Nees, nom., ex Boeckeler (descr.) 1874, nom. illeg., non Rchb. ex Nees 1834, not validly publ.; *S. flagellum* Benth. 1849, nom. illeg., non (J. F. Gmel.) Sw. 1797 nec Griseb. 1864; *S. buettneri* Boeckeler

Perennial herb with very short rhizome c. 3 mm ∅; culms with base somewhat thickened, 0,6 – near 2 m long, 2−4 mm ∅, glabrous, smooth below and sometimes throughout, but often pubescent above on the sides, hispidulous or scabridulous on the acute angles; leaves spaced throughout the culm, shorter to somewhat longer than culms, 0,5−1 cm wide, glabrous or sometimes ± villous beneath, basal ones reduced to almost bladeless sheaths; sheaths often purplish or vinaceous, very sparsely to densely villous; panicles 3−5, single at nodes, 3−8 × 1−7 cm, loose to rather dense, branches slightly to patently spreading, terminal sessile, laterals on peduncles scarcely exserted from sheaths; male spikelets 3−4 mm long; female glumes 2,5−3 mm long, acuminate, glabrous, pale, sometimes streaked light reddish with a reddish-black upper margin, or palish only at base and centre, otherwise reddish-black; nutlet ovoid, 2−3 × 2−2,5 mm, white, smooth.

Edge of marsh, moist bush paths; stony ground; deep water swamp; thicket; coconut plantation; along paths in *Dialium* forest; secondary forest near stream; damp rocks; river valley; sand dunes; near mangrove swamp; often under shade; ferrugineous hollow; rice-field in fallow; forest clearing; 0−950 m alt.

? San Tomé – Príncipe (Figueiredo & al. in Bothalia 41: 52, 2011). Presence in Equatorial Guinea not confirmed, but possible.

Confused with *S. iostephana*, especially in E. Africa (cf. Fl. Trop. E. Afr., l.c.); in *S. naumanniana* the nutlet is not bluish, and nutlet not 3−4,2 mm long. In fact, *S. iostephana* is replaced by *S. naumanniana* in E. Africa.

S. nyasensis C. B. Clarke; Nelmes in Kew Bull. 11: 86−87, 1956, p.p., *excl*. syn.; Robinson in Kew Bull. 18: 535−536, 1966; Burrows & Willis, Pl. Nyika Plateau Malawi: 305, 2005; Fl. Trop. E. Afr., Cyper.: 406, 2010. – Icon.: Piérart (1953): pl. 2/7 (nutlet, as *S. schmitzii*), pl. 2/12 (nutlet), p. 42 (*S. schmitzii* text), 45 (text); Haines & Lye, Sedges & rushes E. Afr.: 351, 1983.

syn.: *S. schmitzii* Piérart

Perennial herb 0,45−2 m tall with short reddish-brown rhizome and purple roots; culms crowded with swollen bases to 5 mm ∅, usually forming an irregular woody mass or clump to 1 m across; leaves 15−30 cm long, 2−7 mm wide, glabrous or hairy, sharply scabrid on margin and veins; sheaths hairy; inflorescences 0,25−1 m long overall; lateral panicles rarely single, usually 3−6 at 2−5 nodes, on slender pendulous glabrous or hairy peduncles exserted to 20−30 cm from sheaths; male spikelets 5−8 mm long on pedicels to sometimes 11 mm long; females 7−9 mm long with glumes straw-coloured to pale brown, sometimes with purple patches and green keel; nutlet ovoid-ellipsoid to ± globose, 2,5−3,6 × c. 2 mm, distinctly regularly finely pitted with longitudinal rows of pits, ridges white-hairy.

Permanent *Phragmite*s and papyrus swamps; forest gallery of *Syzygium*; in wet part of swamps; sometimes in standing water; 70−2200 m alt.

In (Nelmes) Kew Bull. 11: 87 (1956), the following specimens belong to *S. nyasensis*: Chandler & Hancock 92 (Uganda); Schlieben 644 (Tanzania); White s.n. in Malawi (Mt Malosa) and White s.n. (Mt Zomba).

Lorougnon [Cypéracées forest. Côte d'Ivoire (Mém. ORSTOM 58): 29, 33, and figs. p. 32 and p. 35 (nutlet)] cites *S. nyasensis* with synonyms *S. achtenii* De Wild., *S. subintegriloba* De Wild., *S. elongata* Piérart, and *S. elongatissima* Piérart. The drawings suggest *S. achtenii*, very close to *S. nyasensis*.

S. oligochondra Nelmes, Kew Bull. 11: 81, 1956.

Glabrous perennial herb; rhizome long, creeping, 2−3 mm ∅ clothed with dark reddish-brown sheathing scales; culms 1−1,55 m tall, 3−3,5 mm ∅; leaves rather short (not extending the stem apex), 0,8−1,4 cm wide, flat or flattish, lower very short, lowest in form of reddish sheaths; panicles 4−6, single at nodes, or lowest branch considered to be a second panicle, 4−10 cm long, 1−2,25 cm wide, loose, branches and spikes suberect to obliquely spreading; male spikelets 2,25−3 mm long; female glumes ± suborbicular, 2,25−2,5 mm long, pale with fulvous streaks, margins above slightly ciliolate in places; nutlet ± globose c. 2,5 × 2 mm, very sparsely verrucose, with some deflexed bristles on the wart apices.

Ecology unknown.

? Only known from the type collected in 1952.

Near *S. verrucosa*.

S. pachyrrhyncha Nelmes, Kew Bull. 11: 99−100, 1956; Robinson in Kew Bull. 18: 544−545, 1966; Fl. Trop. E. Afr., Cyper.: 409−410, 2010. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 355, 1983.

Perennial herb; rhizome horizontally creeping, 3−5 mm ∅, covered with red striate scales, culms arising at intervals of 3−7 cm, culm base swollen, to 7 mm ∅; culms c. 1−2 m tall, 3 mm ∅; leaves sheathing much of the stem, long but shorter than stem, 0,5−1 cm wide, glabrous above, sparsely hairy beneath, sheaths hairy; inflorescence a simple terminal panicle or terminal and lateral together up to 35 cm long, terminal panicle 6−9 cm long, 5−9 cm wide, laterals 2,5−5 cm long, 1−4 cm wide, single or paired at one node, on erect peduncles exserted to 10−14 cm from sheath; male spikelets 5−6 mm long, sessile, brown, hispidulous; female spikelets greenish or brown hairy; nutlet ovoid, 3−4 × 2,5 mm, smooth, glabrous, blue at tip, strongly beaked.

Rainforest; rock faces and outcrops in *Berberis holstii*, *Hypericum* association; sometimes occasional; grassy roadsides in evergreen forest; c. 1000−1850 m alt.

S. pantadenia Meganck & Bauters, Phytotaxa 227: 46, 2015 (figs. p. 47, 51); Phytotaxa 394: 31, 2019 (nutlet).

Annual, *delicate*, *brittle*, decumbent herb, single-stemmed or in tufts; culms 10−30 cm tall, 0,5−1 mm ∅, triangular, glabrous; leaves tristichous, 5−35 cm long, 1−3 mm wide, glabrous; sheaths glabrous, reddish-brown; inflorescence terminal, 3−10 cm long, glomerate-spicate, always branching, *branches to 10 cm long*; *glomerules* to *20*, erect, each with 2−6 spikelets; these 2−4 mm long, androgynous; flowers unisexual; nutlet ± globose, c. 1 × 0,8 mm, with *many gland-like* tubercles c. 0, 095 mm ∅, with a small rim of tuberculate cells at base (the specific epithet refers to the many glands all over the nutlet surface; unique feature in the genus).

Small wet shady ledges and seepage areas on large rocky sandstone outcrops; c. 1550 m alt.

Near *S. pergracilis* but this species is always taller (20−95 cm), and not brittle and delicate. Superficially resembling *S. pulchella*, a small herb to c. 12 cm tall and small spikelets (< 2,5 mm), from Angola.

S. parvula Steud.; Nelmes in Kew Bull. 11: 105−106, 1956, p.p.; Robinson in Kirkia 2: 190−191, 1961, p.p.; Robinson in Kew Bull. 18: 532, 1966; Napper in Kew Bull. 25: 442, 1971; Fl. Trop. E. Afr., Cyper.: 402, 2010; Fl. China 23, Texts: 264−265, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 347, 1983; Berhaut, Fl. ill. Sénégal 9: 339, 1988; Fascicles Flora of India 27: 104, pl. 10 W (nutlet), 2015; Illustrated Cyperaceae of Korea: 345, 2016.

syn.: *S. uliginosa* Hochst. ex Boeckeler 1874, nom. superfl.; *S. fenestrata* Franch. & Sav.; *S. coreana* Palla ex Nakai

Annual herb with simple culms or occasionally branched near base, 26−75 cm tall, 0,5−1 mm ∅, glabrous, triquetrous; leaf blades erect, 10−35 cm long, 2−5 mm wide, flat or slightly folded, sparsely hairy on nerves; sheaths glabrous or sparsely villous, purplish; inflorescence a terminal panicle and 1−2 (−5) laterals, these 2−4 cm long, 1−3 at each node on flexuous peduncles 1−4 cm long; male spikelets 2,5−5 mm long, light green to brown-red on peduncles 1−3 mm long; females light green to dark brown, 4−6 mm long; nutlet ovoid, c. 2 × 1,7 mm, distinctly tessellate-lacunose.

Ricefields; seasonally flooded grassland; swampy stream banks; 100−2100 m alt.

Tropical and subtropical Old World; from India, Sri Lanka, Nepal, Thailand, Vietnam, Korea, E-wards to SE China, New Guinea, Japan, Philippines. – Not in tropical America.

Readily confused with *S. bambariensis*, but the nutlets and especially the hypogynia of the two species are sufficiently distinctive (cf. Fl. Trop. E. Afr., l.c.).

S. patula E. A. Rob., Kirkia 2: 186−188, 1961; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 529, 1966.

Annual herb; culms *3−25 cm tall*, spreading; true leaves very few, blades often short, 1−2 mm wide, glabrous; bracts well developed, often exceeding the culm; inflorescence: lateral panicles single at nodes, on erect penduncles little exserted from sheaths; male spikelets c. 2 mm long, stramineous or pale reddish, on

pedicels 1,5−3 mm long; female glumes glabrous; *nutlets* not more than *2 mm long*, including the hypogynium, c. 1,3 mm wide, lacunose-tessellate, hairy or glabrous.

Seasonally damp places; 135−1400 m alt.

Similar to *S. parvula*, *S. bambariensis*.

S. paupercula E. A. Rob.; Fl. Trop. E. Afr., Cyper.: 389, 2010; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 509, 1966; Haines & Lye, Sedges & rushes E. Afr.: 335, 1983; Bauters & al. (2019): 31 (nutlet), 32−33 (text).

syn.: *S. paupercula* Napper, J. E. Africa Nat. Hist. Soc. 24: 31, 1964, English descr. only.

Perennial, nearly glabrous herb 20−50 cm tall; rhizome long, creeping, juicy (woody when dry), 2−3 mm ∅; culms erect close or to 1 cm apart, 0,5−1 mm ∅; leaf sheaths slightly hairy; blades < 1 mm wide, margins incurved; inflorescence spicate or shortly branched, 1,5−6 cm long, with glomerules of 2−6 spikelets; these 3−4 mm long; glumes dark brown, sometimes slightly hairy; nutlet irregularly ovoid-globose, c. 1,3 × 0,8 mm, smooth.

Boggy grassland, plant dominant between tussocks of grasses and sedges; perennially wet bogs (plant locally dominant); 1350−1500 m alt.

S. pedicellata Bauters, PLoS ONE 13(9): e0203478: 26. 2018 (with fig. and text p. 15); Phytotaxa 394: 31 (nutlet), 33 (text), 2019.

Annual, slightly decumbent or scrambling, loosely *tufted* herb; culms 35−50 cm long, 0,4−0,5 mm ∅; leaves tristichous, to 17 cm long, 1,5−3,5 mm wide, glabrous; sheaths glabrous, reddish-purplish; inflorescence terminal, glomerulate-spicate, to 10 cm long, unbranched; glomerules stalked, sometimes forming branches 2,5 mm long; glomerules 3−7, each with 3−4 pedicellate (to 2,5 mm long), *reflexed* spikelets; these (sub-) androgynous, 4−5 mm long; glumes glabrous; *nutlet globose*, 1,2−1,5 × 1,2−1,3 mm, *trabeculate*.

Rocky plateau with dry to humid prairies (grassland), in inselberg area; 461−686 m alt.

S. pergracilis (Nees) Kunth, incl. var. *major* Cherm. and var. *brachystachys* Nelmes (See below); Nelmes in Kew Bull. 10: 445−446, 1955; Robinson in Kew Bull. 18: 494−495, 1966; Simpson & Inglis in Kew Bull. 56: 342, 2001; Prasad & Singh, Sedges Karnataka (India): 322−323, 2002; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Thiombiano & al., Pl. vascul. Burkina Faso: 58, 2012 (map by Schmidt & al. in Phytotaxa 304: 184, 2017); Darbyshire & al., Pl. Sudan & S. Sudan: 116, 2015. – Icon.: Clarke, Ill. Cyper.: pl. 121/1−5, 1909; Piérart (1953): pl. 4/1−2, (nutlet), 201 (text); Haines & Lye, Sedges & rushes E. Afr.: 342, 1983; Berhaut, Fl. ill. Sénégal 9: 340, 1988; Gordon-Gray, Cyper. Natal: 185, 1995 (nutlet); Fl. Eth. & Eritrea 6: 497, 1997; Clarke & Mannheimer, Cyper. Namibia: 64, 1999; Fl. Trop. E. Afr., Cyper.: 396, 2010; Bauters & al. in Phytotaxa 227: 47−48 (text), 51 (nutlet), 2015; Fascicles Flora of India 27: 66, 2015; Bauters & al. (2019): 31 (nutlet), 33−34 (text, 2 vars.); César & Chatelain, Fl. ill. Tchad: 144, 2019.

bas.: *Hypoporum pergracile* Nees

syn.: *Scleria salebrosa* Spreng. ex Boeckeler, 1894, nom. nud. in syn.; *S. salebrosa* Boeckeler ex C. B. Clarke; *S. ustulata* Ridl.

Tufted annual herb 15−95 cm tall, entirely glabrous save leaf sheaths sometimes sparsely hairy; culms slender; leaves 1−2 mm wide; inflorescence simply spicate or very shortly branched near base, 2−18 cm long, with many (6−18) erect or spreading glomerules of 1−5 spikelets (sometimes crowded), each 4−5 mm long, dark red; glumes pale brown to dark reddish black, paler at base and midrib, pale green in female, 3−5 mm long, acuminate; nutlet ± globose, 1−2 × 1−1,7 mm, tuberculate and with 3 smooth bands.

Common in a dense community, with *Pycreus sulcinux*, *Bulbostylis hispidula*, *Ascolepis protea*, on slope only just dry after 5 weeks' drought; seasonally or permanently damp grassland; seepage zones in woodland; acid and neutral soils; with *Drosera indica* in damp woods where *Andropogon* grows or river banks; in hollows on rocks; c. 0−2000 m alt.

S. Africa; SE Asia, from Bangladesh, Nepal, India, Sri Lanka, Thailand, E-wards to S China, New Guinea, Philippines, N Australia (Queensland).

Bauters & al. (2019) distinguish 2 vars.: – var. **pergracilis**, a large plant 20−95 cm long, with long inflorescences 5−13 cm of 5−30 glomerules which are clearly separated; – var. **brachystachys** Nelmes, a shorter plant 15−35 cm long, with short inflorescences 2−6 cm long of 6−18 contracted glomerules (not clearly separated from each other); it replaces the typical variety in E Africa and Zambesian area. – However, many intermediates occur in many parts of C. & W. Africa.

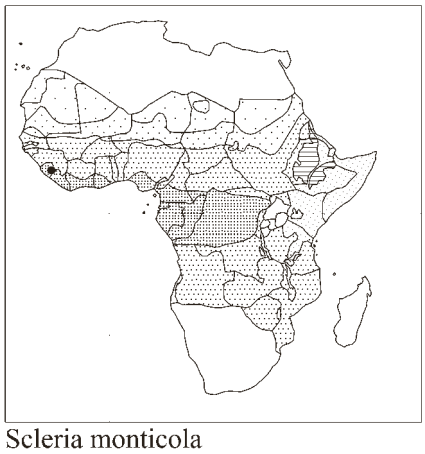
S. poiformis ("poaeformis") Retz., non *S. pooides* Ridl.; C. E. C. Fischer in Bull. Misc. Inform. Kew 1931: 265, 1931; idem in Bull. Misc. Inform. Kew 1932: 70, 1932; Nelmes in Kew Bull. 11: 110−111, 1956; Robinson in Kew Bull. 18: 547, 1966; Simpson & Inglis in Kew Bull. 56: 342, 2001; Prasad & Singh, Sedges Karnataka (India): 323−324, 2002; Naczi & Ford, Sedges: Uses…: 6, 2008; Fl. Trop. E. Afr., Cyper.: 412, 2010; Tremetsberger & al. in Edinb. J. Bot. 76: 207, 2019. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 357, 1983; Gordon-Gray, Cyper. Natal: 185, 1995 (nutlet); Cook, Aquat. & wetland pl. south. Africa: 121, 2004; Fl. China 23, Ill.: 357, 2012; Fascicles Flora of India 27: 77, pl. 9/L (nutlet), 2015; Bauters & al. in Taxon 65: 456, 2016 (nutlet).

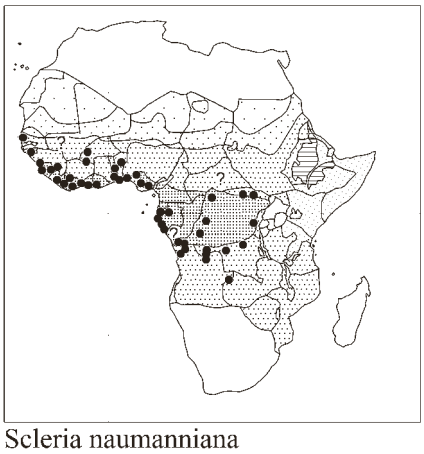
syn.: *S. oryzoides* J. Presl & C. Presl; *S. coriacea* G. Bertol. 1854, nom. illeg., non Liebm. 1851; *S. bertolonii* M. Martens; *Carex poiformis* (Retz.) J. F. Gmel. – *S. pseudosorghum* K. Schum. ex Engl. is perhaps a synonym (See under that name at end of **Scleria**).

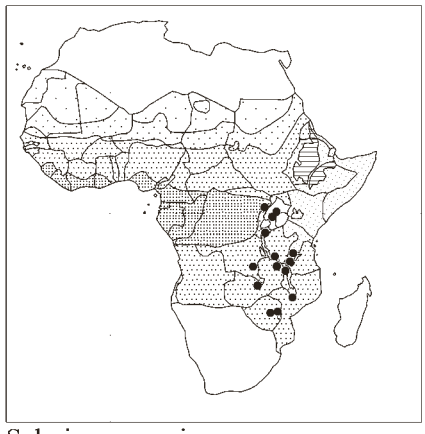
Perennial robust, evergreen, conspicuous, handsome aquatic herb 1,2−2,1 m tall; rhizome creeping, 0,5−1 cm ∅; culms 3-angled, smooth or scabrid on angles at top, 0,3−2 cm ∅, rooting from submerged nodes; leaves mostly basal, 1−3 on stem, tough, 1−4 cm wide, glabrous but margins (saw-edged) and veins scabrid, tip cucullate; lower sheaths spongy, purplish red; inflorescence of 1 terminal ellipsoid panicle 10−20 cm long, 5−12 cm wide, with compound branches bearing very many spikelets, at base with a small bract, very rarely with a lateral panicle from the axil of a leafy bract, ultimate branches obliquely erect, spiciform; spikelets solitary, sessile, evenly distributed along the spiciform branches, usually unisexual; male spikelets numerous, lanceolate, 3−5 mm long; female spikelets few, mostly at base of the branches, obovoid, 3−5 mm long; nutlet ± globose, 2,5−3 × 2−3 mm, smooth, glabrous, shining white.

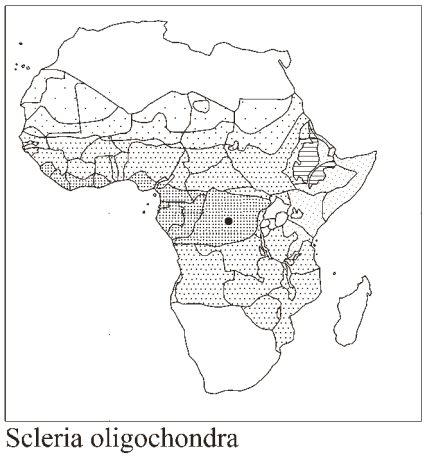
Shallow freshwater lakes, in water 30−40 cm deep; may be locally dominant; in almost pure stands in open habitats in coastal areas; freshwater swamps; swampy savanna forest; ricefields; ditches; tolerating brackish water; 25−50 m alt.

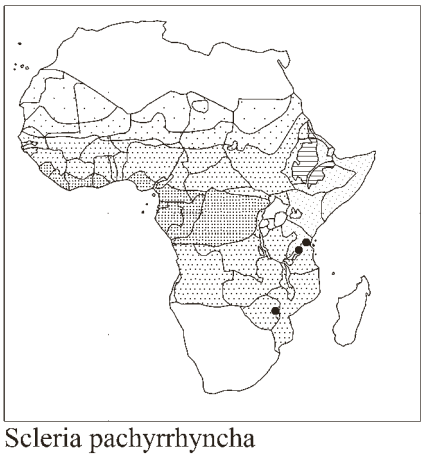
S. Africa; Madagascar; tropical Asia: India, Sri Lanka, Thailand, Vietnam, E-wards to Malesia, S. China, New Guinea, Philippines; Australia (Queensland). Perhaps spread from Africa to Asia – Australia (Tremetsberger & al., l.c.).

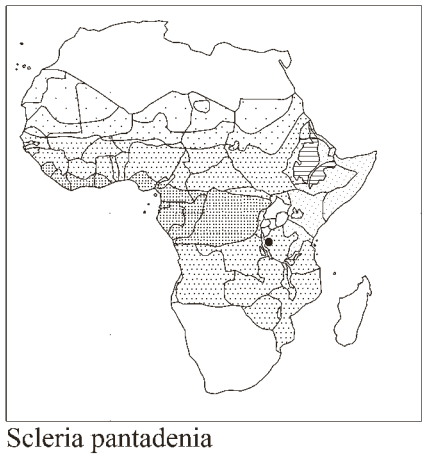

Scleria monticola

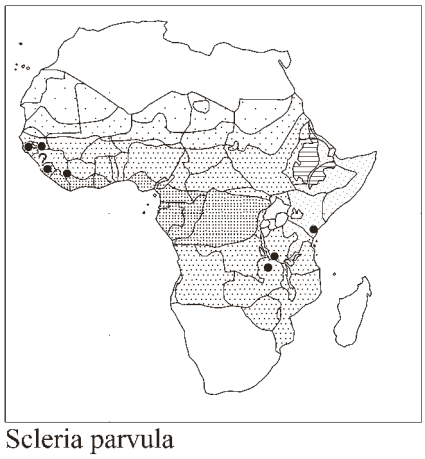

Scleria naumanniana

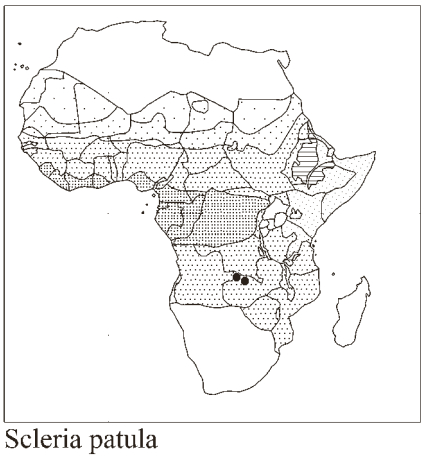

Scleria nyasensis

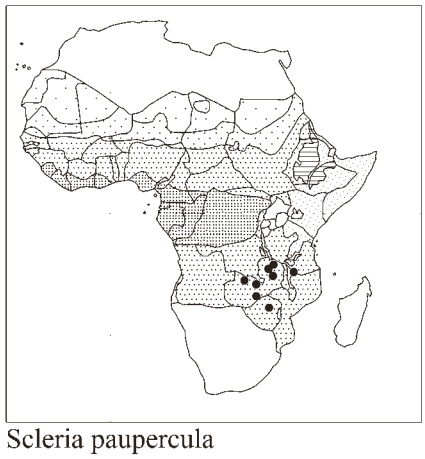

Scleria oligochondra

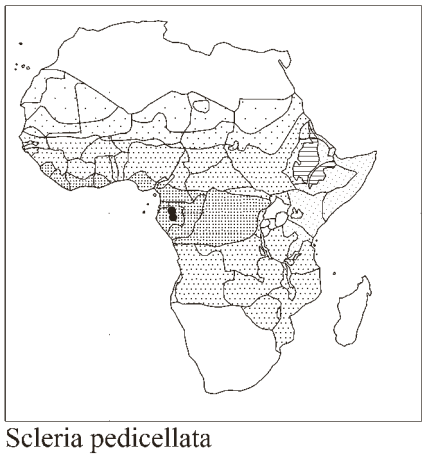

Scleria pachyrrhyncha

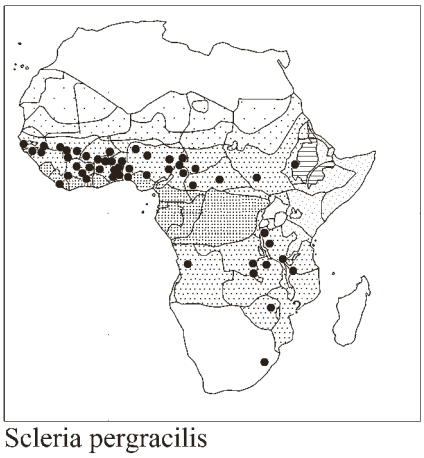

Scleria pantadenia

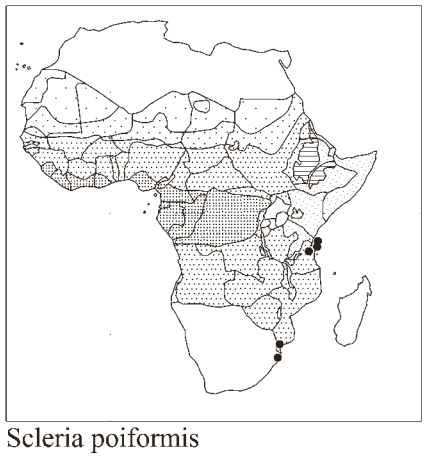

Scleria parvula


Scleria patula


Scleria paupercula


Scleria pedicellata


Scleria pergracilis


Scleria poiformis

The specific epithet refers to the general appearance of a grass-like *Sorghum* or *Poa*.

S. polyrrhiza E. A. Rob.; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 514, 1966; Bauters & al. in Phytotaxa 394: 31 (nutlet), 34 (text), 2019.

Perennial stoloniferous herb producing *2−4 stolons each year*, stolons c. 1 mm ∅, covered with dark-striate scales; culms to 65 cm long, c. 1 mm ∅, at base, glabrous or sparsely hairy, trigonous; leaves often longer than culms, 0,5−1,5 mm wide, glabrous beneath, sparsely hairy above; inflorescence glomerate-spicate, 4−6,5 cm long, always branched, nodding at maturity; branchlets to 2,5 cm long, bearing 1−2 glomerules, each with 1−6 spikelets; these androgynous and male, 4−5 mm long; glumes glabrous, dark brown, females broadly ovate, awned, males ovate-lanceolate; nutlet ± ovoid, c. 1,2−1,5 × 1 mm, lightly and indistinctly papillose or striate.

More or less permanently wet bogs; with *S. flexuosa*, or with *S. glabra* and *S. pergracilis*.

Very close to *S. woodii* but differs from it in its root system (plant producing 2−4 slender rhizomes simultaneously not producing a single rhizome each year); also, *S. polyrrhiza* has regularly narrower leaf blades and a more delicate inflorescence. Also very close to *S. hilsenbergii* Ridl. from Madagascar.

May possibly occur in Angola, Prov. Bié (cf. Bauters & al. 2019: 34).

S. pooides Ridl. ("poaeoides"), non *S. poiformis* Retz. (See above); Nelmes in Kew Bull. 10: 433−434, 1955 (incl. *S. prophyllata*); Robinson in Kew Bull. 18: 512, 1966; Raynal in Adansonia, Sér. 2, 7: 237 (spelling), 247 (map), 1967; Akoègninou & al., Fl. analyt. Bénin: 120, 2006; Fl. Trop. E. Afr., Cyper.: 290, 2010; César & Chatelain, Fl. ill. Tchad: 144, 2019. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 4, 132, 1974; Haines & Lye, Sedges & rushes E. Afr.: 21 fig. 16 B (nutlet), 337, 1983; Bauters & al. 2019: 31 (nutlet), 34−35 (text).

syn.: *S. multispiculata* Boeckeler; S. "*multispiculosa*" Boeckeler 1888 (Beitr. Cyper. 1:36) used by Clarke in Durand & Schinz, Conspect. fl. Afr. 5: 673, 1894; *S. prophyllata* Nelmes

Perennial glabrous tufted grass-like (like a *Sporobolus* or *Eragrostis*) herb 30−80−100 cm tall, rarely with short rhizome c. 1 mm ∅; leaves on culm; blades c. 1−2 mm wide; inflorescence a spreading compound panicle 3−20 cm long, branched, branches slender, compound; spikelets axillary and pedicellate, to 170 on one stem, dark red, each 3−5 mm long; glumes ± distichously arranged, males 2−3 mm long, females 1,5−2 mm, hispidulous; nutlet ± ovoid, c. 1−1,4 × 0,8 mm, densely tuberculate.

Perennially damp grassland and swamps; wet ground; spring in savanna; with *Isoetes aequinoctialis*; sandy-spongy places; marshy meadow; humid stone slab; locally dominant; 450−1750 m alt.

Madagascar.

"Smells like lemon when rubbed" (Rendle, Cat. Welwitsch's Afric. pl. 2/1: 134, 1899).

S. porphyrocarpa E. A. Rob.; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 520, 1966.

Perennial herb erect or often climbing in trees and shrubs, with rhizomes 3−4 mm ∅; culms 5−6 mm ∅ at base, to 5 m long and perhaps more in the densest thickets, smooth, 3-angled, angles retrorsely scabrid above; lower leaf sheaths smooth or scabrous, reddish, upper sheaths scabrous on angles, shortly hairy; blades 0,5−1,4 cm wide, shortly and sparsely hairy, margins strongly scabrid; inflorescence a compound panicle to 90 cm long, panicles sometimes corymbose, often broadly pyramidal, lower branchlets patent or reflexed, 1,5−4 cm long, 2−6,5 cm wide, the laterals 2−3 per node; peduncles flattened, 1−1,7 mm wide, scabrid or hairy, ± erect, exserted 2−16 cm from sheaths; spikelets androgynous or male, males 6−7 mm long; glumes of the androgynous ovate, 4−5 mm long, acuminate, keel green, lateral veins purple or brownish-purple; *nutlet* ovoid, *4,8−6 × 2,7−3,7 mm*, glabrous, *brilliant shining purple*, tip acuminate.

Relict patches of evergreen forest, in permanently wet soil, with *Garcinia huillensis*, *Ilex mitis*, *Lasianthus kilimandscharicus*, *Mitragyna stipulosa*, etc.; "In this association *Scleria porphyrocarpa* often forms a dense tangle of erect or trailing rough-edged stems which make progress almost impossible and generally bloody."

A handsome and remarkable species with its large shining purple nutlets and its very long stems.

Similar to *S. barteri* and its close relative *S. iostephana* that are often found on fringes of such 'mushitu' formations "the interior of which may be occupied by *S. porphyrocarpa*" (Robinson, l.c.).

S. procumbens E. A. Rob.; Lock in Kew Bull. 70: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 522, 1966; Bauters & al. (2019): 31 (nutlet), 35 (text).

Similar to "*S. bequaertii* and *S. laxiflora* in its weakly erect habit and branched stems. It is also similar to those species in its aromatic stems and leaves, which emphasize the affinity of all three species to the others of the old sect. *Hypoporum*. Furthermore, in *S. procumbens* the androgynous spikelets produce fully formed male flowers, with stamens up to 3 mm long … The hypogynium … is also remarkable. When fresh it is soft, white and spongy … However [it is] often longer than the achene itself, and almost as broad, and being strongly contrasted in colour with the dark grey mature achene it is a striking sight. The degree of hairiness of the stems and leaves … is very variable … This has led to its being mixed in collections with equally variable *S. bequaertii*" (Robinson, l.c.).

Leaves narrower than those of *S. bequaertii*: 1−3 mm wide; sheaths with deflexed hairs; spikelets androgynous, short (5−7 mm long), smooth or more lightly papillose or lacunose…; hypogynium smooth, 1,1−1,4 mm long, longer than nutlet (Bauters 2019: l.c.).

Permanently wet bogs, often with *S. bequaertii*, *S. laxiflora*; may form dense masses of semi-prostrate vegetation which dominate large areas.

S. pseudohispidior Bauters, PLoS ONE 13(9): e0203478: 29, 2018. – Icon.: ibid. p. 16; Bauters & al.: 31 (nutlet), 35−36 (text).

Annual loosely tufted herb; culms to 55 cm long, c. 1 mm ∅, long white-hairy; leaves tristichous, blade to 25 cm long 1,5− c. 4 mm wide, long white-hairy, mainly on margins; sheaths to 5 cm long, pale green, reddish-brown near base, hairy; inflorescence terminal, glomerate-spicate, to 17 cm long, unbranched; glomerules 4−9, distant, separated 1−3 cm, each with 2−4 spikelets; these 5−6 mm long, strictly androgynous; glumes hairy, especially on midrib, c. 2,5−3,5 mm long, mucronate; nutlet ovoid, c. 2 × 1,4 mm, trabeculate to reticulate.

Open short wooded grassland with *Terminalia*, *Syzygium guineense* subsp. *macrocarpum*, etc., on rocky outcrop surrounded by dense *Oxytenanthera* scrubs; 1500 m alt.

Known only from the type collected in 1996.

S. pulchella Ridl. (here not including *S. suaveolens* Nelmes; See under that species below); Nelmes in Kew Bull. 10: 442, 1955, p.p., quoad specim. ex Angola; Robinson in Kew Bull. 18: 496, 1966, excl. syn. *S. suaveolens* Nelmes; Haines & Lye, Sedges & rushes E. Afr.: 341, 1983, p.p., quoad citat. Angola; Figuerido & Smith, Pl. Angola: 182, 2008; Fl. Trop. E. Afr., Cyper.: 394−395, 2010, p.p., quoad citat. Angola; Bauters & al. in Phytotaxa 227: 48, 2015, p.p., quoad citat. ex Angola. – Icon.: Bauters & al. (2019): 31 (nutlet), 36 (text).

Annual herb; culms to 12,5 cm long, setaceous, hispid; leaves longer than culms, hispidulous, setaceous; inflorescence spicate-glomerate, compact with ± confluent, erect or spreading glomerules; spikelets < 2,5 mm long; nutlet globose, 0,7−1 × 0,7−0,9 mm, tuberculate.

Lofty pastures; wet grassland *S. pulchella* growing with short grasses; 1850−1900 m alt.

A very rare species. Probably endemic in Angola. "Most species collected under the name *S. pulchella* are specimens of *S. suaveolens*" (Bauters & al., 2019: l.c.).

S. racemosa Poir., incl. var. *eciliaris* Kük., but *excl*. var. *depressa* C. B. Clarke, and subp. *depressa* (C. B. Clarke) J. Raynal (= *S. depressa*); Renier, Fl. Kwango 1: 67, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 278, 280, 1955; Nelmes in Kew Bull. 11: 76, 1956; Robinson in Kew Bull. 18: 548−549, 1966; Fl. Eth. & Eritrea 6: 499−500, 1997; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 115, 2010; Fl. Trop. E. Afr., Cyper.: 413−414, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 116−117, 2015. – Icon.: Clarke, Illustr. Cyper.: pl. 131/5, 1909; Piérart (1953): pl. 3/11, 12 (female spikelet, nutlet), p. 58−60 (text), excl. var. *depressa*; Haines & Lye, Sedges & rushes E. Afr.: 359, 1983; Fl. Gabon 11, Cyper.: 217, 2012 (as *R. racemosa* subsp. *racemosa*); Velayos & al., Fl. Guinea Ecuat. 11: 413, 2014.

syn.: *Ophryoscleria racemosa* (Poir.) Nees; *Scleria ciliolata* Boeckeler; *S. palmifolia* Ridl. 1884, nom. illeg., non Schltdl. 1845; *S. macrocarpa* Nees 1842, non Wall. 1831 nec Salzm. ex Boeckeler 1874; *S. macrosperma* Nees ex Kunth

Perennial herb 1−4 m tall; rhizome creeping, horizontal, ± straight, 4−6 mm ∅, scaly; leaf sheaths and blade margins razor-sharp; culms 4−7 mm ∅, glabrous, triquetrous, angles very sharp, formed by the winged decurrent keels of the leaves; blades c. 60 cm long, 1−3,5 cm wide; inflorescence of 1 terminal panicle and 3−6 lateral panicles, single or double at nodes, elliptic to lanceolate in outline on erect minutely hairy peduncles; male spikelets 5−6 mm long, sessile or nearly so; glumes straw-coloured with reddish-brown dots and dashes, minutely hairy; female spikelets 7−9 mm long, glumes straw-coloured or pale brown with dark reddish marks, minutely hairy on margin and obscure midrib, the whole spikelet falling with fruit; nutlet ovoid, whitish, 4−5 × 4 mm, smooth, glabrous, very hard.

By rivers and in swampy ground in forest; lake shores and swamps; muddy valley bottoms; rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals, along small brook between rocks; *Brachystegia* woodland; seepage areas; always in permanently damp ground and usually in partial shade; 0−1750 m alt.

Madagascar, Comoros.

Replaced in W. Trop. Africa by *S. depressa*. The figure in Andrews, Flow. pl. Sudan 3: 370, 1956, represents *S. depressa*.

S. racemosa "was recorded from S Somalia in Cufod., Enum.: 1488 (1971) on the basis of a statement by Schumann in Engler, Pflanzenw. Ost-Afr. (1895). As the record has not been substantiated it is omitted" from Somalia (Thulin, Fl. Somalia 4: 98, 1995).

S. rehmannii C. B. Clarke, excl. var. *ornata* Cherm. (= *S. woodii*), non sensu Berhaut 1967 (= *S. rehmannii*); Nelmes in Kew Bull. 10: 425−426, 1956; Robinson in Kew Bull. 18: 507−508, 1966; Berhaut, Fl. ill. Sénégal 9: 342−343, 1988; Clarke & Mannheimer, Cyper. Namibia: 64, 88 (map), 1999; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Fl. Trop. E. Afr., Cyper.: 388−389, 2010; Bauters & al. (2019): 37. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 335, 1983.

syn.: *S. rehmannii* var. *ornata* sensu Berhaut 1967, non Cherm.

Perennial herb 0,3−1,5 m tall; rhizome long, straight, woody, 3−4 mm ∅, bearing erect culms 0,5−1,5 cm apart; leaf blades 1−3 mm wide, ± hairy; inflorescence a stiffly erect panicle 4−17 cm long with branches to 7 cm long but sometimes simply spicate with 4−12 sessile glomerules each of 2−6 dark red spikelets each 3,5−5 mm long; nutlet ± ovoid, c. 1,5 × 1 mm, apiculate, generally smooth but sometimes ± papillose or strongly tuberculate in transverse lines.

Seasonally or perennially wet grassland; sandy ground at edge of *Brachystegia*, *Uapaca* woodland; forest edge grassland; tolerant of a wide range of conditions (from seasonally wet places which dry out completely to permanently wet bogs; of course the species is variable); seepage area on stony ground; grey clayey sand; sometimes dominant; 450−2100 m alt.

NE Namibia, S. Africa.

S. remota Ridl., incl. var. *hispida* Ridl.; Nelmes in Kew Bull. 10: 443−444, 1955 (incl. *S. bicolor*); Figueiredo & Smith, Pl. Angola: 182, 2008 (as *S. bicolor*); Bauters & al. (2019): 37, 38 (fig. nutlet).

syn.: *S. bicolor* Nelmes

Annual slender tufted herb glabrous or villous; culms 20−45 cm tall, 0,5−1 mm ∅; leaf sheaths glabrous or villous mostly in longitudinal lines; leaf blades c. 1−2 mm wide, the lower ones reduced; inflorescence terminal, glomerate-spicate, *unbranched*, 5−15 cm long, with 5−15 glomerules; these erect or spreading, clearly separated, each with 1−5 spikelets, each 4−6 mm long; glumes c. 3 mm long, glabrous; nutlet ± globose, c. 2 × 1,6 mm, lacunose or trabeculate, with smooth areas on 3 sides, ± beaked.

Damp wooded meadows; spongy rocky places; growing among mosses with another scirpoid plant.

Known only from Welwitsch's collections in Angola.

S. richardsiae E. A. Rob.; Fl. Trop. E. Afr., Cyper.: 392, 2010; Lock in Kew Bull. 70/4: § 46: 2, 2015. – Icon.: Robinson in Kew Bull. 18: 516, 1966; Haines & Lye, Sedges & rushes E. Afr.: 338, 1983; Bauters & al. (2019): 38 (nutlet), 39 (text).

Perennial herb; rhizome formed from a *knotty mass of hard fleshy* (when fresh) stem-bases each c. 3 mm ∅; culms weakly erect, c. 0,6−1 m tall; leaf blades c. 1−2 mm wide, glabrous or sparsely hairy; inflorescence a simple condensed to very lax panicle 9−20 cm long, branches to 6 cm long, glomerules 1−2 cm apart but more crowded towards apex, each with 2−4 spikelets, each 4−5 mm long; axes often with long hairs; glumes reddish-brown to blackish, glabrous or minutely hairy; nutlet ovoid, c. 1,5 × 1 mm, lightly to strongly trabeculate-reticulate, grey with darker stripes.

Perennially wet places in thick grassy vegetation along stream sides; on a rather bare patch of damp burnt ground; 1700−2400 m alt.

With *S. hispidior* (1100−2600 m) and *S. hispidula* (1050−2600m) it is one of the few submontane *Scleria* species in Africa.

S. robinsoniana J. Raynal; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Bauters & al. in Phytotaxa 227: 50, 2015, p.p., excl. specim. ex Nyika Plateau (Robinson 3099). – Icon.: Raynal in Adansonia, N. S. 7: 238, 1967 (subsp. *robinsoniana*); Bauters & al. (2019): 38 (nutlet), 39 (text).

syn.: "*Fimbristylis*" *multispiculata* (sphalm. for *Scleria*) sensu Adam, Eléments pour l'étude de la végétation des hauts plateaux du Fouta Djalon…, première partie… : 21, 1958 (See Raynal in Adansonia, N. S. 7: 240, 1967, in foot-note 2).

Annual slender herb; culms 15−60 cm tall, glabrous, leafy in lower part; leaf sheaths purplish, sparsely pubescent; blades 5−10 cm long, linear, 1 mm wide, glabrous; inflorescence terminal, paniculate, loose, to 20 cm long, copiously branched with branches of the third order; glomerules erect, each with 1−3 spikelets, these *3−4 mm long, acuminate*; nutlet ± globose, c. 1 × 1 mm, with transversely elongated tubercles often yellowish-translucent in appearance. Very similar to *S. pooides*, a perennial herb with slender rhizome and spikelets 3,5−5 mm long, obtuse.

Fallows; constantly humid places with thin soil and open vegetation; on very shallow soil overhanging sandstone outcrop in seepage area; seepage areas in rocky places (gneiss, sandstone, laterite); 800−1500 m alt.

Comprises 2 subspp.: – subsp. **robinsoniana**, only known from Rep. of Guinea, Sierra Leone; – subsp. **acanthocarpa**, with longer spikelets (4−5 mm), bigger nutlet (1,2−1,4 mm) with protruding tubercles; known only from the Central African Republic.

S. pooides has a different ecology: grassy swampy savannas with closed and rather high vegetation.

S. schimperiana Boeckeler, incl. var. *hypoxis* (Schweinf. ex Boeckeler) C. B. Clarke; Nelmes in Kew Bull. 11: 104, 1956; Robinson in Kew Bull. 18: 524−525, 1966; Puff & Sileshi, Pl. Simen: 242, 2005; Fl. Trop. E. Afr., Cyper.: 399, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Haines & Lye, Sedges & rushes E. Afr.: 344, 1983; Fl. Eth. & Eritrea 6: 498, 1997.

syn.: *S. hypoxis* Schweinf. ex Boeckeler; *S. dillonia* Boeckeler

Loosely tufted annual herb 20−90 cm tall, roots shallow, reddish; culms 1−3 mm ∅, glabrous or hairy above; leaf blades to 40 cm long, 3−8 mm wide; inflorescence of 1 terminal and 1−2 lateral panicles, always solitary from leaf sheaths and widely spaced along the culm, 2−5 cm long, 1,5−2,5 cm wide, erect or ± pendulous on slender hairy peduncles to 8 cm long; male spikelets 4−5 mm long with dark reddish-brown glumes; females 5−8 mm long, glumes pale or dark reddish-brown with green midrib; nutlet bluish or green when fresh, whitish when dried, ± globose, 2,5−3 × 3−3,5 mm, smooth, glabrous.

Open swampy ground near rivers and waterfalls; seasonally wet depressions in grassland or wooded grassland; swampy places along streams; found in association with *S. foliosa*; on basic or neutral soils; very heavy clay; 60−1800(−? 2400) m alt.

S. schliebenii Gross, incl. var. *ferruginea* Peter – Bauters & al. (2019): 39−40, make the following remark: "Previously, most authors made no distinction between *Scleria bulbifera* and *Scleria schliebenii*. They just assumed it to be a variable species. Molecular results … have shown that a separation should be made. Also, the morphology of both species is different… The distribution of *Scleria schliebenii* might be more restricted than that of *S. bulbifera*. However, to be sure, all *S. bulbifera* collections in herbaria should be checked to see to which species they belong…". – References: Piérart (1953): 27−28 (as *S. thomasii*); Nelmes in Kew Bull. 10: 438−441, 1955, p.p., including only synonyms cited here below; Robinson in Kew Bull. 18: 503−505, 1966, p.p., idem; Fl. Trop. E. Afr., Cyper.: 386, 2010, p.p., idem. – Icon.: Piérart in Bull. Soc. Roy. Bot. Belg. 83: 405, 1951 (as *S. thomasii*, nutlet); Gordon-Gray, Cyper. Natal: 180 (nutlet), 182, 1995 (as *S. bulbifera*); Burrows & Willis, Pl. Nyika Plateau, Malawi: 304, 2005 (idem); Malaisse & al., Copper-Cobalt flora Upper Katanga: 329, 2016 (idem); Bauters & al. (2019): p. 6 fig. 2E (rhizome), p. 38 fig. 6D (nutlet).

syn.: *S. bulbifera* Hochst. ex A. Rich. var. *hirsuta* Peter & Kük., and var. *ferruginea* Peter; *S. thomasii* Piérart

Perennial herb with bulbous rhizome, *bulbs firmly attached to each other* and not connected by stolons; culms 45−70 cm tall, c. 1 mm ∅; leaves 10−25 cm long, 4−7 mm wide, glabrous; sheath 3−6 cm long; inflorescence a terminal spike 4−9 cm long with 4−9−13 spaced glomerules each with 4−10 spikelets, peduncles 6−11 cm long; male spikelets 5 × 2 mm, blackish; androgynous spikelets similar to the male ones; nutlet ± globose, 1−2 mm long, trigonous, glabrous.

Open woodland and grassland; on all types of soils in the "Flora Zambesiaca" area; copper steppe with low copper content.

S. Africa.

S. sheilae J. Raynal; Onana & Cheek, Red Data Book flow. pl. Cameroon: 369, 555 (map), 2011; Onana, Fl. Cameroun 40: 224, 2013; Bauters & al. in Phytotaxa 227: 50, 2015. – Icon.: Raynal, Adansonia, N. S. 7: 242, 1967; Bauters & al. (2019): 38 (nutlet).

Annual erect glabrous herb with purple slender clustered roots; culms erect, 20−30(−70) cm tall, trigonous, 0,5−1 mm ∅ at base, each bearing 2−6 leaves, sheaths c. 2,5 cm long, glabrous with densely pilose truncate mouth; cauline leaves narrowly strap-like, 10 × 0,2 cm; inflorescence a terminal open panicle 10−15 cm long, glomerate-spicate, with 4−5 spreading branches 2−4 cm long; glomerules erect each with 1−3−6 spikelets; these androgynous, 5−6 mm long, glabrous; glumes glabrous, 3 mm long, mucronate; nutlet subglobose, 1,4 × 1,2 mm, greyish, trabeculate-tuberculate, the raised parts of the surface yellowish-translucent.

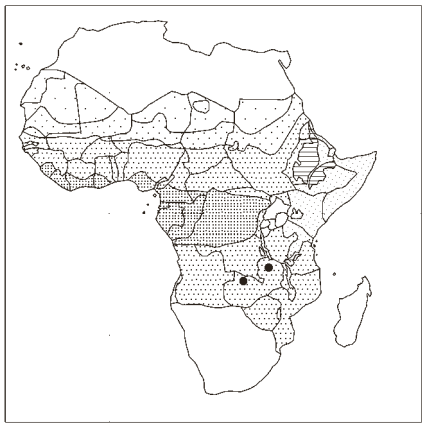
Inselbergs; bare rock in the carpet around *Microdracoides* in the semi-deciduous forest belt, in seepage areas; c. 800 m alt.

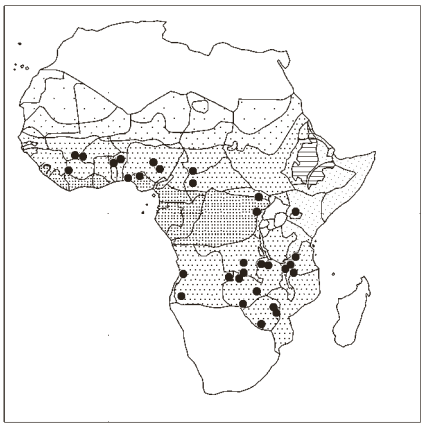
Only known from 2 collections at the type locality (Mt Minloa, near Yaoundé, Cameroon): J. & A. Raynal, collected in 1963 and 1964, respectively. Threatened by extraction of granite for construction aggregate; endangered by rapid population growth and urban expansion (Nord. J. Bot. 23: 434, 2005).

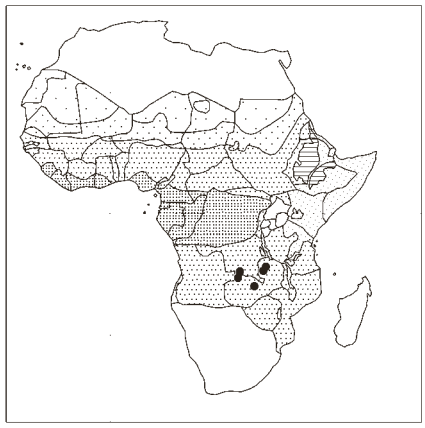
For comparison between the 5 related species: *S. glabra*, *S. guineensis*, *S. pooides*, *S. robinsoniana* and *S. sheilae*, See Table in Adansonia, N. S. 7: 245, 1967.

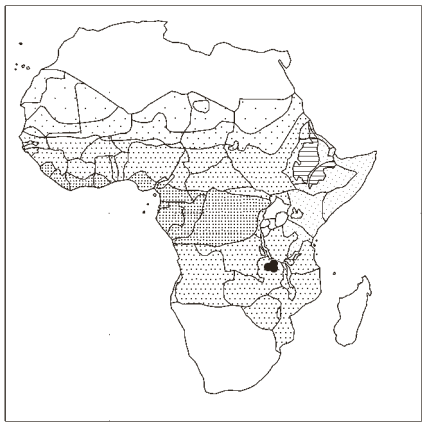
S. spiciformis Benth. ("spicaeformis"); Nelmes in Kew Bull. 11: 100−101, 1956; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Mesterházy in Lidia 7/5: 121, 2012; Poilecot (in CIRAD), Guide to Liberian grasses: 82, 104, 167, 2015. – Icon.: Piérart (1953): 39−40 (text), fig. pl. 2/3 (nutlet); Adam, Fl. descript. Mts Nimba 6: 2195, 1983; Fl. Gabon 44, Cyper.: 219, 2012 (nutlet); Velayos & al., Fl. Guinea Ecuat. 11: 414, 2014.

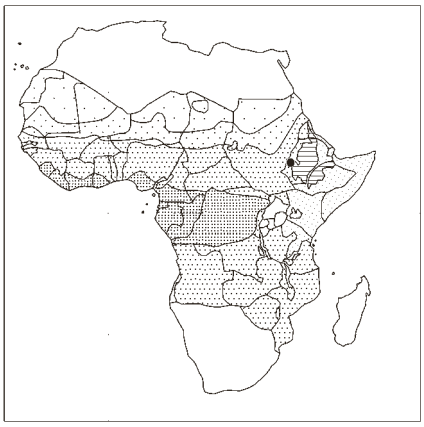
Hairy, loosely to densely tufted perennial herb; rhizome very short, c. 2 mm ∅; culm base thickened; culms 30−75 cm long, 1,5−2 mm ∅, glabrous below, sparsely to densely villous or hispidulous above on main rhachis, trigonous or compressed, angles acute; leaves few at and near base, where they are reduced to bladeless and vinaceous sheaths, with 1-several higher on the culm, below the bracts, longer to shorter than the culms,

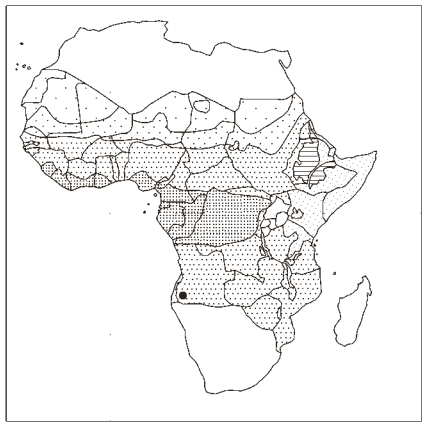

Scleria polyrrhiza

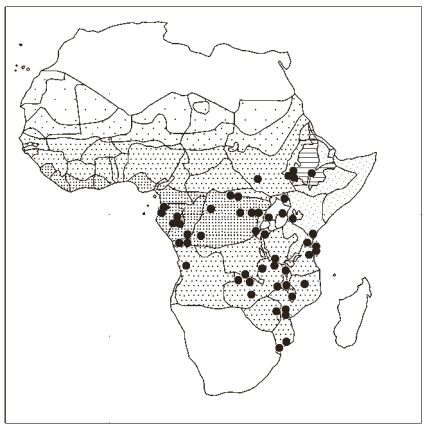

Scleria pooides

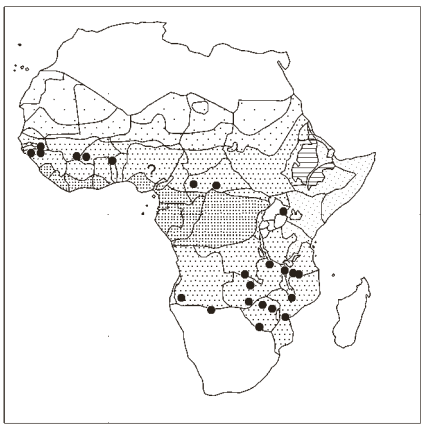

Scleria porphyrocarpa

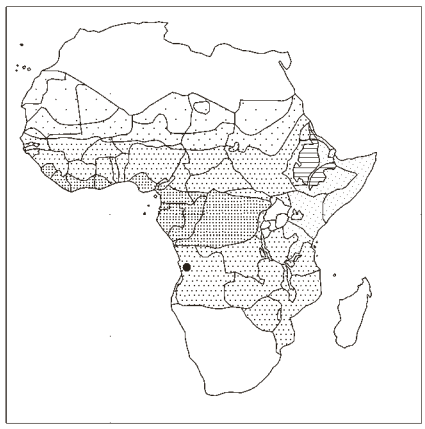

Scleria procumbens

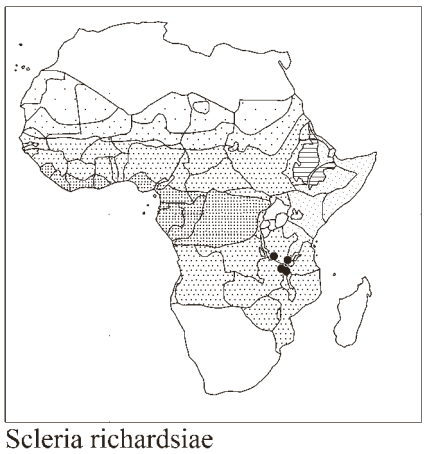

Scleria pseudohispidior

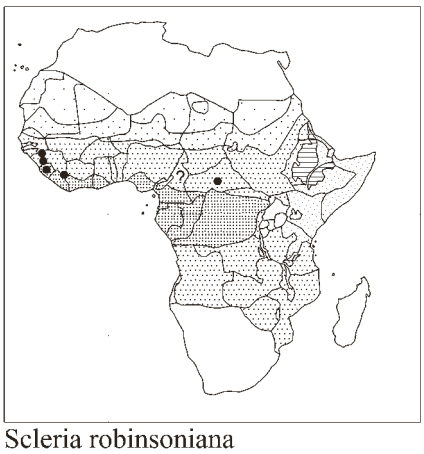

Scleria pulchella

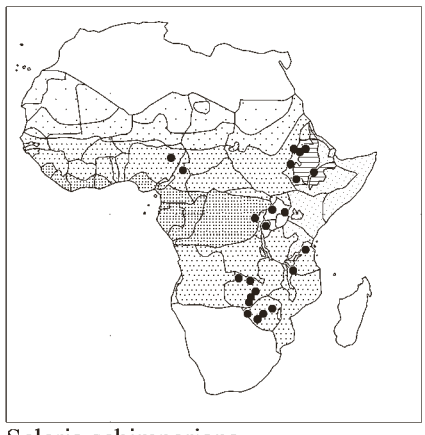

Scleria racemosa


Scleria rehmannii


Scleria remota


Scleria richardsiae


Scleria robinsoniana


Scleria schimperiana

3−6,5 mm wide, flat to plicate-revolute, glabrous to densely villous; inflorescence of 2−3 panicles, single at nodes, *1−4* cm long, *1−2 cm* wide, terminal the largest and sessile, lateral ones from approximate to distantly spaced; male spikelets ± *recurved*, obliquely spreading, 7−9 mm long; female ones 6−8 mm long of 3 glumes, hispidulous at least above, villous or ciliate on margins and midrib, reddish or vinaceous above, pale below; nutlet (oblong-)ovoid, 2−4 mm long, glabrous, distinctly and closely longitudinally costate, but warty at tip.

Open rock and inselberg in seepage areas; dry places on slopes; sandy marsh; humid savanna; grassy swampy formations on sand; iron ore cliffs; old mine site; common on dry open surfaces (Mesterházy, l.c.); temporary pool; 7−1600 m alt.

S. suaveolens Nelmes – Compare under **S. pulchella** above. These two species have been confused, fide Bauters & al. (2019): 41. – References: Piérart (1953): 21−22 (as *S. pulchella*, p.p. excl. citat. ex Angola); Brenan & al. in Mem. New York Bot. Gard. 9: 99, 1954 (as *S. pulchella*); Nelmes in Kew Bull. 10: 442−443, 1995 (*S. suaveolens*; *S. pulchella* p. maj. p., excl. specim. ex Angola); Robinson in Kew Bull. 18: 496, 1966 (as *S. pulchella*, excl. citat. ex Angola); Fl. Trop. E. Afr., Cyper.: 394−395, 2010 (as *S. pulchella*, quoad syn. *S. suaveolens* Nelmes, sed excl. citat. ex Angola); Bauters & al. in Phytotaxa 227: 48, 2015 (as *S. pulchella*, p.p., excl. specim. ex Angola). – Icon: Piérart (1953): pl. 1/3 (nutlet); Haines & Lye, Sedges & rushes E. Afr.: 341, 1983 (as *S. pulchella*, sed excl. citat. ex Angola); Bauters & al. (2019): 38 (nutlet), 41 (text).

syn.: *S. pulchella* sensu auctt. mult., non Ridl. (cf. references above).

Annual tufted herb; culms 8−25 cm tall, c. 0,5 mm ∅, glabrous; leaves c. 1 mm wide, glabrous, lower ones reduced to ± bladeless sheaths; sheaths sparsely villous to glabrous; inflorescence with a main axis 3−4 cm long, shortly branched and contracted so that glomerules become confluent (not clearly separated); glomerules erect or spreading, with 2−3 spikelets; these c. 3 mm long; nutlet subglobose, c. 1 × 0,8 mm, lacunose-trabeculate to tubercled-trabeculate, with 3 narrow smooth strips becoming blackish.

Damp peat; temporary lake on lateritic slab, in dense masses; river-beds; sunny seepage slope; on seasonally damp shallow soils over sandstone or laterite outcrops; 1500−2100 m alt.

"Sweet smelling rather like citronella, no smell when dried".

S. tessellata Willd. 1805, non Benth. 1861, nec Decne. 1834; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 134, 1899 (as *S. foliosa*, specim. Welwitsch 7123); Nelmes in Kew Bull. 11: 107−108, 1956; Robinson in Kirkia 2: 178−179, 1961; Robinson in Kew Bull. 18: 526−527, 1966; Napper in Kew Bull. 25: 441, 1971 (*S. sphaerocarpa*); Prasad & Singh, Sedges Karnataka (India): 327−328, 2002; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Fl. Trop. E. Afr., Cyper.: 403−404, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011 (*S. sphaerocarpa*, *S. tessellata*); Thiombiano & al., Cat. pl. vascul. Burkina Faso: 59, 2012 (idem; maps by Schmidt & al. in Phytotaxa 304: 185, 2017); Lock in Kew Bull. 70/4: § 46: 2, 2015; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015. – Icon.: Piérart (1953): pl. 2/6 (nutlet), 41−42 (text; as *S. glandiformis*); Haines & Lye, Sedges & rushes E. Afr.: 348, 1983; Berhaut, Fl. ill. Sénégal 9: 344−345, 1988 (*S. sphaerocarpa*, *S. tessellata*); Cook, Aquat. pl. book, ed. 2: 84, 1996; Akoègninou & al., Fl. analyt. Bénin: 120, 2006 (*S. sphaerocarpa*); Fascicles Fl. India 27: 111, 2015; Raja & al. in J. Econ. Taxon. Bot. 40: 60, 2016 (India, new record); César & Chatelain, Fl. ill. Tchad: 143, 2019 (*S. sphaerocarpa*, *S. tessellata*).

Annual densely tufted herb 0,15−1 m tall, roots reddish; culms 1−2 mm ∅, smooth; leaves subbasal and somewhat higher, the basal ones reduced to ± bladeless, often vinaceous sheaths, shorter than culms, 2−7 mm wide, flat or flattish, usually glabrous; sheaths often pubescent; inflorescence of 2−4 lateral panicles, single at nodes, 2−6 cm long, 1−2 cm wide, (very) longly spaced from one another, ± dense, terminal panicle sessile, lateral ones on peduncles ± exserted from the bract-sheaths; bracts much longer than their panicles; male spikelets pale green or chestnut, 4−5 mm long, sessile or with pedicels 1−2 mm long; female spikelets c. 6 mm long, their glumes pale green or ± scarious, midrib green; nutlet (olive-) grey, cylindric to globose, 2,2−3,8 × 1,2−2,5 mm, deeply lacunose-tessellate or striate-tessellate, glabrous or hairy.

Seasonally damp grassland; damp meadows on river banks; among rocks; fenced paddocks, occasional, in *Hyparrhenia rufa* grassland; grey-black clay with some sand; marshy wooded meadows; savanna with short grass; hollow in coastal dunes; ricefields; rarely with *S. foliosa*, *S. bambariensis* (Zambia); grassland with *Brachystegia* and *Acacia* on clay or gravel soil; swamps; 0−2100 m alt.

Madagascar; India, Thailand; N Australia. – Not in China (confusion with *S. biflora*).

Comprises 2 vars.: – var. **sphaerocarpa** E. A. Rob. [syn.: *S. sphaerocarpa* (E. A. Rob.) Napper], with nutlet grey, globose, 2,7−3 × 2,3−2,5 mm, glabrous or shortly hairy, deeply lacunose-tessellate, in tropical Africa; – var. **tessellata** [syn.: *Carex indica* J. Koenig ex Willd. 1805, nom. illeg., non L. 1771, etc.; *Scleria glandiformis* Boeckeler], with nutlet cylindric, 3,2−3,8 × 1,5−2 mm, shiny, glabrous, lightly striate-lacunose; in tropical Africa, Madagascar, SE Asia, Australia.

A species which shows remarkably little variation over its wide range (Kirkia 2: 178−179, 1961).

S. tricholepis Nelmes, Kew Bull. 10: 447, 1955. See Bauters & al. (2019): 42, 38 fig. 6 H (nutlet). – This plant has been confused with the American species *S. interrupta* L. C. Rich. 1792 (See under that species above). The African material was first recognized as a distinct entity by Nelmes (l.c.), but later treated under *S. interrupta* or "*S. hirtella* Sw.", such as the synonymy summarised by J. Raynal in Adansonia, Sér. 2: 216, 1976. A few such examples are: Robinson in Kirkia 4: 176, 1964 (*S. hirtella*); Robinson in Kew Bull. 18: 499, 1966 (idem); Fl. W. Trop. Afr., ed. 2, 3/2: 344, 1972 (idem); Akoègninou & al., Fl. analyt. Bénin: 118, 2006; Cheek & al. in Pl. Dom, Bamenda Highl., Cameroon: 150, 2010. – Icon.: Piérart (1953): pl. 4−8 (nutlet, male flower); Berhaut, Fl. ill. Sénégal 9: 334, 1988; Fl. Gabon 44, Cyper.: 209, 2012 (nutlet, *S. interrupta*).

syn.: *S. tenuiflora* Willd. ex Kunth; *S. melanotricha* Hochst. ex A. Rich. var. *glabrior* C. B. Clarke; *S. interrupta* auctt. pl. afric., non L. C. Rich.; *S. hirtella* auctt. pl. afric., non Sw.

Annual tufted herb, glabrescent to villous; culms 10−55 cm tall, 0,3−1,5 mm ∅, 3-angled; leaf sheaths brownish, ± pubescent; blades as long as or longer than culms, 1−3 mm wide; inflorescence terminal, glomerate-spicate, unbranched, 3−13 cm long, with 4−15 glomerules clearly spaced, erect or spreading, each with 3−6 spikelets; these 3−4 mm long; glumes sparsely to densely ciliate, mainly on midrib; nutlet oblong, 1,2−1,6 × c. 1,2 mm, trigonous, undulate-trabeculate to lacunose.

Seasonally damp places, bare humid sands; on granite slabs, rock outcrops, laterite rock, among short grass; often on shallow soil; 0−750 m alt.

S. tricristata Meganck & Bauters – Icon.: Bauters & al. in Phytotaxa 227: 49, 51, 2015; idem in Taxon 65: 456, 2016 (nutlet); Bauters & al. (2019): 38 (nutlet), 43 (text).

Annual tufted herb; culms 22−40 cm long, 0,5−1 mm ∅, triangular, glabrous; leaves tristichous; sheaths hairy, (reddish) brown; blades 10−30 cm long, 1−2 mm wide; inflorescence terminal, 10−20 cm long, glomerate-spicate, *never branching*; glomerules *6−14* per culm, each with *3−7 spikelets*; these androgynous or male, 2,5−4 mm long; nutlet ovoid, 1,5−2 × 1−1,2 mm, *lacunose (pitted)*, base trigonous with a small yellow-brown rim, but when dried white-greyish to pink-reddish and almost black, with *3 protruding dentate ridges of yellow- transparent tissue* (the specific epithet refers to this character).

Seasonally wet open grassland on sandy-loamy soils; 1000−1100 m alt.

Near *S. delicatula* but this species has oblong-ellipsoid to broadly ovoid nutlets with a muricate-trabeculate surface, and the raised, translucent tissue is not dentate and does not protrude as much, and in general less conspicuous.

Also near *S. pergracilis* but this plant lacks the translucent tissue on the nutlets (trabeculate to tuberculate).

S. unguiculata E. A. Rob.; Troupin, Fl. Rwanda 4: 482, 1988; Fl. Trop. E. Afr., Cyper.: 407, 2010. – Icon.: Robinson in Kew Bull. 18: 537, 1966; Haines & Lye, Sedges & rushes E. Afr.: 352, 1983; Bauters & al. in Taxon 65: 456, 2016 (nutlet).

Annual tufted herb; culms erect, to 1,35 m long, 1−2 mm ∅, glabrous, 3-angled, striate, with bases thickened and rhizome reduced to connections between these thickenings (3−5 mm ∅) to form a sub-woody mass; leaves 2−4 mm wide, glabrous or sparsely hairy; inflorescence to 7 cm long, interrupted, with 1−5 panicles at each node, 1,5−3 cm long on pendulous peduncles to 26 cm long; male spikelets 4−5 mm long on short pedicels sometimes up to 1 cm long; female glumes 3,5−5 mm long, acuminate, glabrous, straw-colored or brown, keel green; nutlet grey or pale brown with darker longitudinal lines, ± ovoid, 2−2,8 × 1,7−2 mm, striate-lacunose with pits in longitudinal lines, with white or yellowish hairs.

Swampy grassland; perennially wet bogs; swamp; ? -1000−1700 m alt.

Botswana.

Robinson (l.c.) described a "forma **b**", which "may represent a separate taxon, but I am not confident that they are specifically distinct from *S. unguiculata*. From typical examples of that species they differ in having slightly narrower leaves (1−3 mm wide), a somewhat stricter *inflorescence*, *achenes* which are ovoid-ellipsoid or cylindric-ellipsoid and covered with fulvous hairs, and a small *hypogynium* with 3 shortly triangular lobes" (all from Zambia).

S. verrucosa Willd.; Renier, Fl. Kwango 1: 67, 1948; Nelmes in Kew Bull. 11: 79−81, 1956; Cable & Cheek, Pl. Mt Cameroon: 156, 1998; Harris, Vascul. pl. Dzanga-Sangha Res., Centr. Afr. Rep.: 228, 2002; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Fl. Trop. E. Afr., Cyper.: 414−415, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Cheek & al., Pl. Mefou prop. natl. park Yaoundé, Cameroon: 223, 2011. – Icon.: Piérart (1953): pl. 3/16−17 (nutlet, female spikelet), 61 (text); Lowe & Stanfield, Fl. Nigeria: Sedges: 4, 132, 1974; Haines & Lye, Sedges & rushes E. Afr.: 359−360, 1983; Fl. Gabon 44, Cyper.: 219, 221, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 415, 2014; Vande weghe & al., Pl. à fleurs Gabon: 170, 2016.

syn.: *S. spinulosa* Boeckeler

Perennial herb with thick creeping rhizome; culms 0,9−4,8 m long, 0,3−1 cm ∅, glabrous or scabrid; leaf sheaths with green wings densely set with retrorse scabrid teeth making the edges razor sharp, *dangerous to touch*; blades to 60 cm long, 1−3 cm wide, plicate, glabrous or hairy, scabrid on margins and ribs; inflorescence rather dense of one terminal and 3−5 lateral elliptic to broadly lanceolate panicles; peduncles solitary, erect, scabrid or minutely hairy; male spikelets 4−4,5 mm long, glumes reddish-brown, usually minutely hairy on or near midrib; female spikelets 4−8 mm long, glumes reddish-brown or straw-coloured with many reddish-brown marks, glabrous, margins ciliate; nutlet broadly ovoid, 3 × 2,5−3 mm, sparsely or densely verrucose, the warts with reddish bristles, hypogynium cupular, 2 mm long.

Swamp forest of *Raphia*, *Mitragyna*, *Macaranga*; rhizomes usually rooting in shallow water, less often in soil; marshes near the sea; riverside; secondary forest; farm-land; open grassland on level swamp with *Alchornea cordifolia*, *Pennisetum purpureum*; damp spots in gallery; brook- and river sides; often with *Polygonum*, *Mimosa*; flooded forests; rainforest; clay soil; 0−1200 m alt.

S. veseyfitzgeraldii E. A. Rob.; Fl. Trop. E. Afr., Cyper.: 386−387, 2010; Lock in Kew Bull. 70/4: § 46: 2, 2015; – Icon.: Robinson in Kew Bull. 18: 504, 1966; Haines & Lye, Sedges & rushes E. Afr.: 332, 1983; Clarke & Mannheimer, Cyper. Namibia: 64, 88 (map), 1999; Bauters & al. (2019): 38 (nutlet), 43−44 (text).

Perennial tufted herb; culms to 1 m tall, 1−3 mm ∅, 3-angled, glabrous, somewhat thickened at base, densely covered with withered sheaths; leaf blades 2−7 mm wide, almost glabrous or densely hairy; inflorescence usually with simple spikes 5−15 cm long formed of 4−8 sessile glomerules, rarely with branches 2 cm long formed from basal glomerules; these dense, multispiculate, to 1,4 cm wide; spikelets androgynous and male; glumes chestnut brown or blackish-brown, with green keels, aristate, with black or pale hairs; female glumes 5−6 mm long including awn; nutlet obovoid, 2 × 1,3−1,6 mm, distinctly reticulate-trabeculate, without beak.

Seasonally wet or inundated flood plains, grassland or swamps; ? 1800 m alt.

Namibia, Botswana.

S. vogelii C. B. Clarke; Nelmes in Kew Bull. 11: 78−79, 1956; Lisowski, Fl. Rép. Guinée 1: 413, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011. – Icon.: Piérart (1953): pl. 3/13−15 (nutlet), 60−61 (text); Lowe & Stanfield, Fl. Nigeria: Sedges: 132, 1974 (details); Mesterházy in Lidia 7/5: 118, 2012; Fl. Gabon 44, Cyper.: 220−221, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 416, 2014.

Perennial herb with branched rhizome; culms 1−2,5 m tall, 3−7 mm ∅, glabrous or scabrous, bearing at intervals broad leaves; sheaths with sharp wings densely set with retrorse teeth; blades 30−60 cm long, 1−3 cm wide, margins and veins scabrous; inflorescence occupying the upper 15−30 cm of the plant, of 1 terminal and 3−5 lateral panicles these usually solitary in the axils of broad leaf-life bracts; panicles 3−7 cm long, 1−2 cm wide, repeatedly branched; male spikelets elliptic, 4−6 × 1−2 mm, glumes pale or reddish-brown, finely hairy beneath and on margins; female spikelets 7−9 mm long, glumes straw-coloured or light brown with reddish-brown streaks or spots, finely hairy on margins and near midrib; nutlet ± globose, c. 3 mm ∅, smooth, ivory white to grey, crowned with the persistent style, hypogynium cup-shaped with ciliate edge.

Swamps, swampy forest; near brooks; permanently humid and slightly shaded places; in deeper parts of riverbanks; sometimes semi-aquatic; 0−1250 m alt.

Bioko/Fernando Poo. Also in Zaire ?: Dundusana (2°53'N × 22°23'E) according to Piérart, l.c.

Near *S. sororia* Kunth from S Mexico to Ecuador and Brazil, and *S. eggersiana* Boeckeler from W. Indies, Mexico, C. & S. America.

S. welwitschii C. B. Clarke; Piérart (1953): 30−31; Nelmes in Kew Bull. 10: 423−425, 1956; Robinson in Kew Bull. 18: 506, 1966; Burrows & Willis, Pl. Nyika Plateau, Malawi: 305, 2005; Figueiredo & Smith, Pl. Angola: 182, 2008; Fl. Trop. E. Afr., Cyper.: 388, 2010. – Icon : Haines & Lye, Sedges & rushes E. Afr.: 334, 1983; Gordon-Gray, Cyper. Natal: 186, 1995; Bauters & al. (2019): 38 (nutlet), 44 (text).

syn.: *S. junciformis* Welw. ex Ridl. 1884, nom. illeg., non Kunth 1837 nec (Nees) Thwaites 1864.

Perennial herb 0,3−1 m long with ± straight woody rhizome 3−4 mm ∅; culms weakly erect, spaced at 0,5−1,5 cm intervals; leaves 1,5−3 mm wide, glabrous or hairy; inflorescence sparingly branched, to 25 cm long with branches to 10 cm long, lax, ± drooping at maturity with glomerules of 2−6 spikelets, each 4,5−7 mm long; glumes dark chestnut or reddish, 3−4 mm long, long acuminate, glabrous or hairy; nutlet grey, ± ovoid, 1,5−1,8 × 1−1,2 mm, smooth.

Perennial bogs; seasonally wet grassland; swamp; deep grass-grown wooded meadows; sometimes locally abundant; may be associated with *S. bequaertii*, *S. procumbens*; 1440−2400 m alt.

S. Africa, Swaziland.

Very near *S. spicata* (Spreng.) J. F. Macbr. from Peru, SE Brazil, Venezuela.

"When underground organs are not represented, the lax inflorescences that branch from the lower glomerules, which are widely spaced along the main axis, usually indicate this species. Spaces between glomerules not uniform: proximally longer than for most species; but gradual reduction distally until closely placed towards tip of axis. Young inflorescences may be misleading since elongation is not complete" (Gordon-Gray, l.c.).

According to Piérart (l.c.) also in Zaire, Haut Katanga, Karavia (coll. Quarré; 11°39'S × 27°25'E).

S. woodii C. B Clarke, incl. var. *ornata* (Cherm.) Schultze-Motel – In many floras and flora lists also cited as *S. striatinux* De Wild. ("striatonux"). – Piérart (1953): 31 (in obs. under *S. welwitschii*), 28−30 (incl. map, as *S. striatonux*); Nelmes in Kew Bull. 10: 428−429−431, 1956; Robinson in Kew Bull. 18: 512−513, 1966; Napper in Kew Bull. 25: 442−443, 1971 (incl. *S. striatinux*); Fl. Eth. & Eritrea 6: 495−496, 1997; Harvey & al., Pl. Bali Ngemba…: 137, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 305, 2005; Fl. Trop. E. Afr., Cyper.: 391−392, 2010; Gereau, Lake Nyasa florist. checklist: 48, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015. – Icon.: De Wildeman, Pl. Bequaert. 4: 237, fig. 6, 1927 (nutlet); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 279, 1955 (as *S. striatonux*); Lowe & Stanfield, Fl. Nigeria: Sedges: 134, 1974 (idem); Piérart (1953): pl. 1/24 (idem); Haines & Lye, Sedges & rushes E. Afr.: 337, 1983; Gordon-Gray, Cyper. Natal: 186, 1995 (nutlet).

syn.: *S. striatinux* De Wild. ("striatonux"), incl. var. *lacunosa* Piérart; *S. rehmannii* C. B. Clarke var. *ornata* Cherm.; *S. lelyi* Hutch. & Dalziel 1936, nom. inval. (no Latin description).

Perennial herb 20−85 cm tall, perennating "by means of a single, obliquely descending, soft tuberous rhizome [5−10 cm × 2−3 mm] from each plant that produces a new plant to 100 mm from the parent, which subsequently dies" (Gordon-Gray, o.c.: 187); "tuber highly scented and pearly white or pink on removal from ground, but shrinks and browns rapidly due to loss of its volatile components and oxidation. Tubers often completely missed by collectors; then most readily recognised by the dainty, often profusely branched, inflorescence" (Gordon-Gray, l.c.); leaves 1−3 mm wide, glabrous or hairy; inflorescence a simple or compound panicle 5−14 cm long, 2−5 cm wide with short erect or extended branches to 6−10 cm long, slender and nodding with 10−30 glomerules each of 1−6 spikelets; these 4−5 mm long; glumes pale to blackish-brown, 3−5 mm long, glabrous, awned; nutlet ovoid-globose, 1,5−2 × 1,1−4 mm, smooth or faintly striate-tessellate to papillose to strongly tuberculate.

Swamp dominated by *Loudetia kagerensis*; sandy clay soil; *Brachystegia*, *Isoberlinia* woodland; occasional in swampy grassland with thickets mainly on old termite mounds, seasonally waterlogged but very dry and fire swept in dry season, soil deep black swamp clay; open *Isoberlinia doka* woodland on ironstone soil; common on poor wet sandy soil with *Loudetia simplex*, *Microchloa indica*; meadow near river bank; *Chloridion* veld; waste ground in farmland with *Lophira alata*, *Detarium senegalense*; valley grassland with *Piliostigma thonningii* scrub; mixed grassland; *Imperata* grassland after cultivation; rocky places; grassy clearing in schlerophyllous forest; grassy savanna; open woodland; bogs but not where the soil is totally waterlogged for long; c. 800 (? and less) – 2600 m alt.

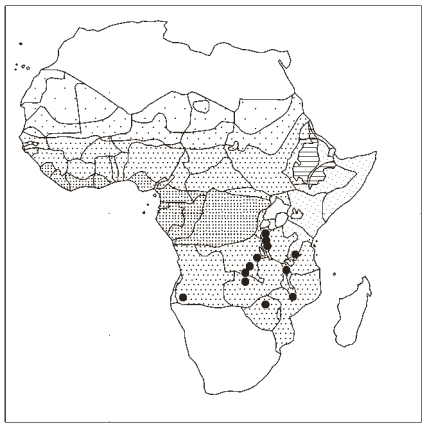
"Robinson has considered this species very variable and best not considered two species or even two varieties. The inflorescence characters are difficult. Napper (1964) stated inflorescence with several simple branches from the lower clusters of spikelets for var. *woodii* and inflorescence smaller and more compact for var. *ornata*…" (Fl. Trop. E. Afr., Cyper.: 392, 2010). And to cite Napper (1971: 443) who considered *S. striatinux* a distinct species: "Considerable difficulty has existed over the interpretation of *S. striatinux* and *S. woodii* in southern tropical Africa and Robinson (1966), working in the field in Zambia, came to the conclusion that there was only one polymorphic entity involved. A detailed survey of all the available material of these two species led to an appreciation of 2 distinct species, each of which evidences a very characteristic facies and bears a distinct achene over the greater part of its range. From Ghana to East Tropical Africa and the southern Congo there is nothing in any way unexpected in *S. striatinux*, but in Rhodesia and Zambia this species develops a tendency to lose its characteristic appearance and uniform achene patterning. A similar effect occurs with the South African species *S. woodii* which achieves the northern limit of its range in Rhodesia and Zambia where it also loses part of its distinctive appearance. The anomalies observed in these two species are such as to bring them very close together and it is not unlikely that hybridization occurs. Experimental evidence on this point would be most valuable."

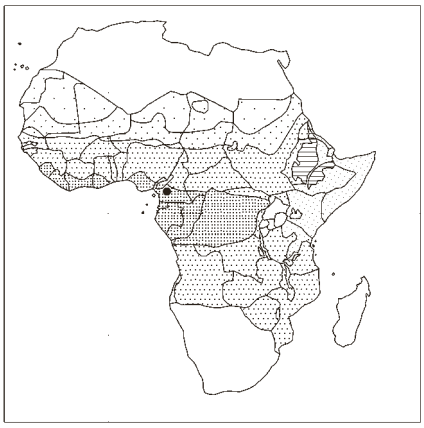
S. Africa, Botswana, Swaziland.

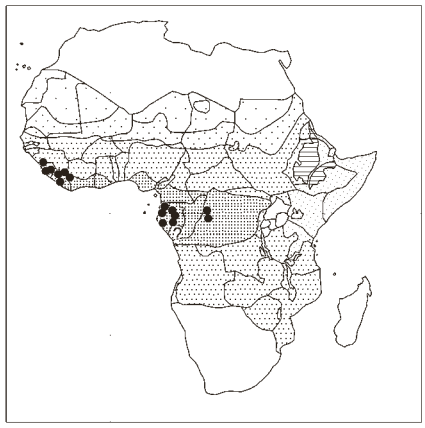
S. xerophila E. A. Rob., Kew Bull. 18: 540−542 (fig.) 1966; Lock in Kew Bull. 70/4: § 46: 2, 2015.

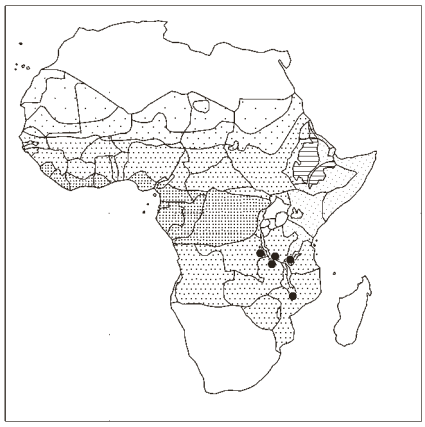
Perennial herb, erect, nearly glabrous; rhizome c. 3 mm ∅, woody; culms to 70 cm long, c. 1 mm ∅, triquetrous, striate; leaf sheaths hairy; blades 2−3 mm wide, hairy above, glabrous beneath; inflorescence terminal, elongate, to 60 cm long, with compact panicles 2−3 mm long, the lateral panicles 1−2 per node, pendulous, on peduncles 3−20 cm long from the nodes; male spikelets 4−5 mm long on peduncles 1−8 mm long; female glumes glabrous, c. 5 mm long incl. 1 mm long awn, with green keel; nutlet ± globose, 3−3,4 × 2,8−3 mm, pale grey or brown, ± tessellate-striate, sparsely pilose.

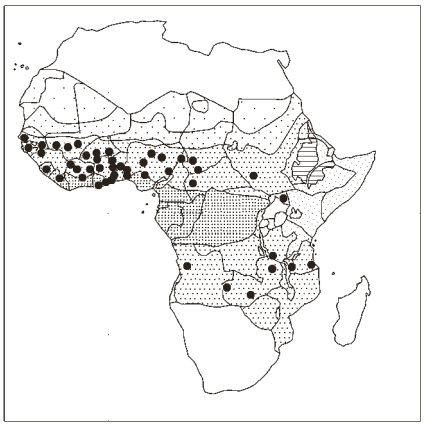
Sandy well-drained grassland with scattered trees.

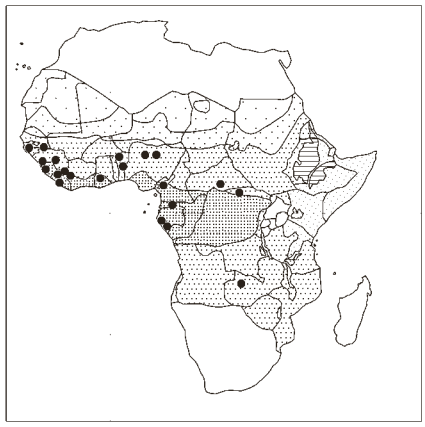

Scleria schliebenii

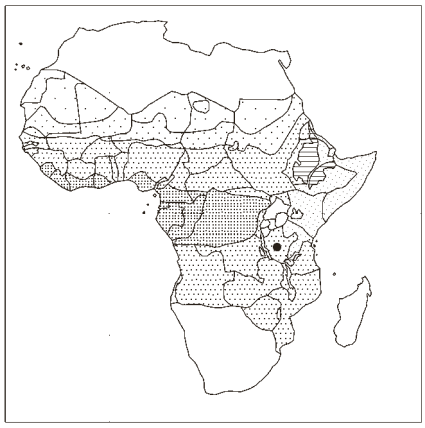

Scleria sheilae

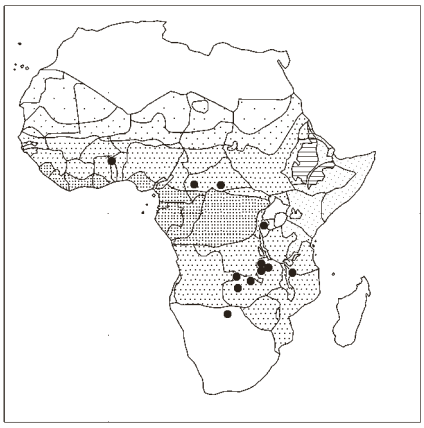

Scleria spiciformis

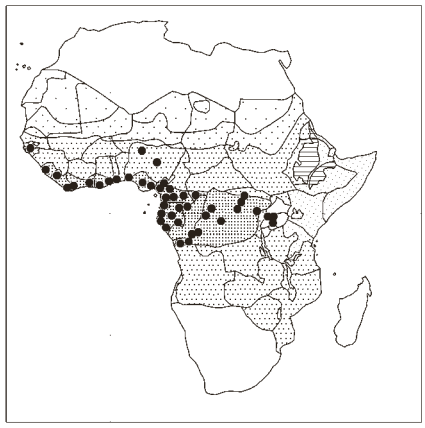

Scleria suaveolens

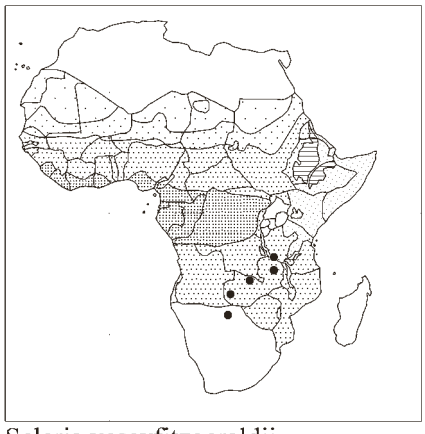

Scleria tessellata

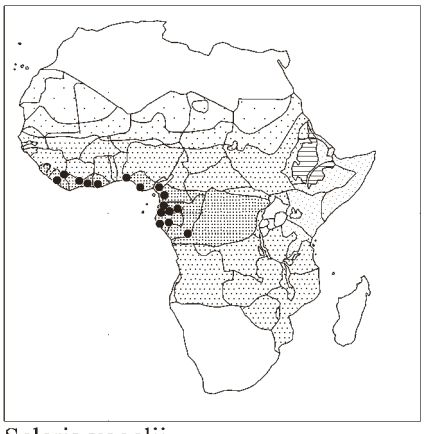

Scleria tricholepis

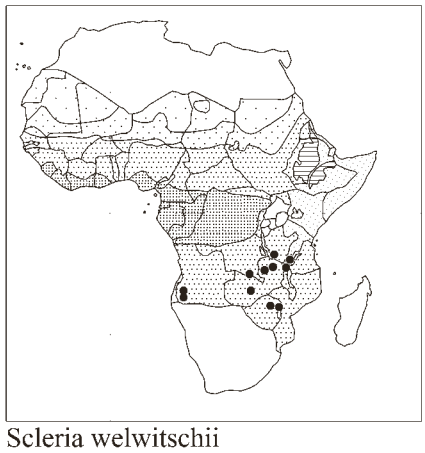

Scleria tricristata


Scleria unguiculata


Scleria verrucosa


Scleria veseyfitzgeraldii


Scleria vogelii


Scleria welwitschii

Known only from the type collected in 1960.

Near *S. lagoensis*.

S. zambesica E. A. Rob., Kew Bull. 18: 499−500 (fig.) 1966; Haines & Lye, Sedges & rushes E. Afr.: 341, 1983; Lock in Kew Bull. 70/4: § 46: 2, 2015; Bauters & al. (2019): 45.

Annual erect herb; culms to 25−30 cm tall, trigonous, striate, hairy; leaves c. 1 mm wide, hairy; inflorescence terminal, glomerate-spicate, 3,5−10 cm long, sometimes contracted in the upper part, glomerules then becoming confluent, and not clearly separated; glomerules sessile, erect or spreading, each with 2−5 spikelets; these androgynous, erect, 3−4 mm long; glumes usually glabrous, but with a few hairs on lower part of the green keel; nutlet trigonous, broadly obovoid, 0,8−1 × 0,8−1 mm, lightly reticulate.

Shallow, shingly soil on flat granite outcrops, seasonally damp; locally dominant in patches and very abundant; associated with *S. melanotricha*.

Near *S. delicatula* but the resemblance in only superficial.

Only known from the type collected in 1965.

UNPLACED NAMES:

Scleria mildbraedii Graebn., nomen, in Mildbraed, Wiss. Ergebn. Zweiten Deutsch. Zentral-Afrika-Exped. 1910−1911, 2: Botanik: 52, 1922; Grassfeld Jendi an feuchteren Stellen; nº 4731 [Grassfeld-sumpfige Waldwiesen/swampy woodland glades in rather damp places]; Molundu-Jukaduma-Bezierk/district, c. 2°N × 15°13E, in S Cameroon.

S. pseudosorghum K. Schum. ex Engl., Abh. Preuss. Akad. Wiss. 1894: 21, 1894. "A splendid Cyperaceae to 1 m tall, with a very well developed panicle similar to that of a *Sorghum*" ("eine prächtige bis 1m hohe Cyperaceae, mit sehr reich entwickelter Rispe wie bei einem *Sorghum*"). In: "Über die Gliederung der Vegetation von Usambara [Tanzania] und der angrenzenden Gebiete" (A. Engler). In "Sümpfe und Tümpel der Creekzone, im Sumpf und dicht am Rande von Teichen" (in swamps and pools of the "creek" zone, outside the littoral). It may be a synonym of **S. poiformis** (cf. under that species above). Map on p. 349.

SYNONYMS:

Scleria acriulus C. B. Clarke, incl. fa. *leopoldiana* C. B. Clarke ex De Wild. = **Scleria greigiifolia**
africana Benth. 1883 = **Diplacrum africanum**
amphigaea Raymond, incl. var. *angustifolia* (Kük.) Raymond = **D. capitatum**
angolensis Turrill = **Scleria induta**
angustata Steud. = **S. angusta**
aquatica Cherm. = **S. lacustris**
aterrima (Ridl.) Napper = **S. catophylla**
atrosanguinea Hochst. ex Steud. = **S. bulbifera**
bambariensis Cherm. var. B of E. A. Robinson 1966 = **S. bambariensis**
barteri Boeckeler = **S. boivinii**
bertolonii M. Martens = **S. poiformis**
bicolor Nelmes = **S. remota**
bojeri C. B. Clarke 1895, nom. nud. = **S. bulbifera**
buchananii Boeckeler, incl. var. *laevinux* Gross and var. *latifolia* De Wild. = **S. bulbifera**
buettneri Boeckeler = **S. naumanniana**
bulbifera Hochst. ex A. Rich. var. *ferruginea* Peter, and var. *hirsuta* Peter & Kük. = **S. schliebenii**
bulbifera var. *latifolia* (De Wild.) Piérart, var. *mechowiana* (Boeckeler) Kük., var. *pallidiflora* Ridl., and var. *schweinfurthiana* (Boeckeler) Piérart = **S. bulbifera**

bulbifera sensu Nelmes 1955: 438−441, p. min. p., and Robinson 1966: 503−505, p. min. p., and Fl. Trop. E. Afr., Cyper.: 386, 2010, p. min. p. = **S. schliebenii**
bulbosa Hochst. var. *pallidiflora* Ridl. 1884 = **S. bulbifera**
caespitosa Ridl. = **S. dregeana**
canaliculatotriquetra Boeckeler, incl. var. *clarkeana* Piérart = **S. lagoensis**
canaliculatotiquetra var. *adpressohirta* Kük. = **S. adpressohirta**
capitata Willd. = **Diplacrum capitatum**
cenchroides Hochst. ex C. B. Clarke 1894, non Kunth = **Scleria bulbifera**
cenchroides Kunth = **S. distans**
centralis Cherm. = **S. melanomphala**
cervina Ridl. = **S. lagoensis**
ciliolata Boeckeler = **S. racemosa**
cincta Steud. = **Rhynchospora contracta**
clarkei De Wild. = **Scleria baroni-clarkei**
complanata Boeckeler = **S. foliosa**
conchroides Kunth = **S. distans** var. **distans**
congolensis De Wild. = **S. gaertneri**
coreana Palla ex Nakai = **S. parvula**
coriacea G. Bertol. 1854, non Liebm. 1851 = **S. poiformis**
dieterlenii Turrill = **S. flexuosa**
dillonia Boeckeler = **S. schimperiana**
distans Poir. var. *interrupta* (L. C. Rich.) Kük. = **S. interrupta** (Amer. sp.)
distans auctt. mult., non Poir. = **S. hirtella**
djurensis Boeckeler = **S. lagoensis**
doradoensis Britton = **S. interrupta** (Amer. sp.)
dumicola Ridl. = **S. foliosa**
duvigneaudii Piérart = **S. induta**
elongata Piérart 1953, non J. Presl & C. Presl 1828 = **S. elongatissima**
fenestrata Franch. & Sav. = **S. parvula**
filiformis Sw. = **S. lithosperma**
flagellum Benth. 1849 = **S. naumanniana**
foliosa specim. Welwitsch 7123 = **S. tessellata**
friesii Kük. = **S. greigiifolia**
glabroreticulata De Wild. = **S. mikawana**
glandiformis Boeckeler = **S. tessellata** var. **tessellata**
globonux sensu Nelmes 1956, p.p., non C. B. Clarke = **S. tessellata** var. **sphaerocarpa**
glomerulata Oliv. = **S. distans** var. **glomerulata**
grata Nelmes = **S. melanotricha**
hirtella Boeckeler 1874, non Sw. 1788 = **S. distans** var. **distans**
hirtella auctt. plur. afric., non Sw. = **S. tricholepis**
hirtella var. *aterrima* Ridl. = **S. catophylla**
hirtella var. *chondrocarpa* Nelmes = **S. distans** var. **chondrocarpa**
hirtella subsp. *interrupta* (L. C. Rich.) M. T. Strong = **S. interrupta** (Amer. sp.)
hirtella var. *tuberculata* Boeckeler ex C. B. Clarke = **S. distans** var. **distans**
hispidula Hochst. ex A. Rich. var. *hispidior* C. B. Clarke = **S. hispidior**
holcoides Kunth = **S. dregeana**
hypoxis Schweinf. ex Boeckeler = **S. schimperiana**
interrupta Michx. 1803 non L. C. Rich. 1792 = **S. hirtella**
interrupta Schltdl. 1847 = **S. hispidula**
interrupta auctt. pl. afric., non L. C. Rich. = **S. tricholepis**
junciformis Welw. ex Ridl. 1884, non Kunth 1837 nec (Nees) Thwaites 1864 = **S. welwitschii**
kindtiana Graebn. = **S. erythrorrhiza**
lateritica Nelmes = **S. flexuosa**

lelyi Hutch. & Dalziel, nom. inval. = **S. woodii**
lithosperma (L.) Sw. var. *filiformis* (Sw.) Britton = **S. lithosperma** var. **lithosperma**
lithosperma subsp. *linearis* (Benth.) T. Koyama = **S. lithosperma** var. **linearis**
lithosperma var. *roxburghii* C. B. Clarke = **S. lithosperma** var. **linearis**
longifolia Boeckeler 1882 = **S. gaertneri**
longifolia (Griseb.) Roberty 1954 = **Diplacrum capitatum**
longigluma Kük. = **Scleria melanomphala**
macrantha Boeckeler 1879, non Boeckeler 1858 = **S. melanomphala**
macrocarpa Nees 1842, non Wall. 1831 nec Salzm. ex Boeckeler 1874 = **S. racemosa**
macrosperma Nees ex Kunth = **S. racemosa**
margaritifera Willd. 1805, non Gaertner 1788 = **S. gaertneri**
mayottensis C. B. Clarke = **S. lagoensis**
mechowiana Boeckeler = **S. bulbifera**
melaleuca Rchb. ex Schltdl. & Cham. = **S. gaertneri**
melanocephala Drège = **S. melanomphala**
melanotricha Hochst. ex A. Rich. var. *glabrior* C. B. Clarke = **S. tricholepis**
melanotricha var. *grata* (Nelmes) Lye = **S. melanotricha**
melanotricha sensu auctt., non Hochst. ex A. Rich. = **S. mongomoensis**
meyeriana Kunth = **S. dregeana**
mildbraedii Graebn., nomen = **?** (unplaced name)
mollis Kunth = **S. distans** var. **distans**
moritziana Boeckeler = **S. lagoensis**
multispiculata Boeckeler = **S. pooides**
"*multispiculosa*" Boeckeler = **S. pooides**
nutans Willd. ex Kunth = **S. distans** var. **distans**
nyasensis auctt., non C. B. Clarke = **S. achtenii (**See comment under **S. nyasensis**)
oryzoides J. Presl & C. Presl = **S. poiformis**
ottonis Boeckeler = **S. gaertneri**
ovuligera Rchb. ex Nees 1834 = **S. induta**
ovuligera Nees ex Boeckeler 1874 = **S. naumanniana**
paupercula Napper, nom. illeg. = **S. paupercula** E. A. Rob.
perrieri Cherm. = **S. foliosa**
pinetorum Britton = **S. interrupta** (Amer. sp.)
pratensis Lindl. ex Nees, incl. var. *melanocarpa* Nees = **S. gaertneri**
prophyllata Nelmes = **S. pooides**
pseudosorghum K. Schum. ex Engl. = ?? **S. poiformis**
pterota C. Presl ex C. B. Clarke 1900, incl. var. *submelaleuca* Kük. = **S. gaertneri**
pulchella sensu auctt. mult., non Ridl. = **S. suaveolens**
puzzolanea K. Schum. = **S. lithosperma** var. **lithosperma**
racemosa Poir. var. *depressa* C. B. Clarke, and subsp. *depressa* (C. B. Clarke) J. Raynal = **S. depressa**
reflexa Benth. 1849, non Kunth 1816 = **S. boivinii**
rehmannii C. B. Clarke var. *ornata* Cherm. = **S. woodii**
rehmannii var. *ornata* sensu Berhaut 1967, non Cherm. = **S. rehmannii**
remota Ridl. = **S. flexuosa**
remota var. *hispida* Ridl. = **S. remota**
retroserrata Kük. = **S. gracillima**
salebrosa Spreng. ex Boeckeler = **S. pergracilis**
salebrosa Boeckeler ex C. B. Clarke = **S. pergracilis**
schmitzii Piérart = **S. nyasensis**
schweinfurthiana Boeckeler = **S. bulbifera**
schweinfurthiana var. *melanocarpa* Cherm., ? and var. *major* Cherm. = **S. hispidula**
secans (L.) Urb. = **S. boivinii**

SCLERIA

secans sensu Piérart 1953 = **S. boivinii**
setulosa Boeckeler = **S. dregeana**
sphaerocarpa (E. A. Rob.) Napper = **S. tessellata** var. **sphaerocarpa**
spinulosa Boeckeler = **S. verrucosa**
spondylogona Nelmes = **S. delicatula**
striatinux ("striatonux") De Wild., incl. var. *lacunosa* Piérart = **S. woodii**
subintegriloba De Wild. = **S. achtenii**
substriatoalveolata De Wild. = **S. achtenii**
tenuiflora Willd. ex Kunth = **S. tricholepis**
thomasii Piérart = **S. schliebenii**
tisserantii Cherm. = **S. melanomphala**
uliginosa Hochst. ex Boeckeler 1874 = **S. parvula**
ustulata Ridl. = **S. pergracilis**
vanderystii De Wild. = **S. lagoensis**
verdickii De Wild. = **S. bulbifera**

(SOROSTACHYS)

Sorostachys kyllingioides Steud. = **Cyperus pulchellus**
leucocephalus (Retz.) Lye = **Cyp. leucocephalus**
pulchellus (R. Br.) Lye = **Cyp. pulchellus**

(SPARGANIUM / Sparganiaceae)

Sparganium pubescens Poir. 1789 = **Fuirena pubescens** var. **pubescens**

(SPERMODON)

Spermodon eximius Nees = **Rhynchospora eximia**

SPHAEROCYPERUS/ *1*

Monotypic genus (Lye in Bot. Not. 125: 214, 1972; cf. Goetghebeur in K. Kubitzki, ed., The families and genera of vascular plants 4: 171, 1998).

Differs from *Rhynchospora* by the distichously arranged glumes, 3-branched style, and nutlet without persistent stembase; and from *Cyperus* by only having one fertile flower per spikelet, smaller glumes at base of spikelets which increase in size towards the apex (Fl. Trop. E. Afr., Cyper.: 263, 2010).

Sphaerocyperus erinaceus (Ridl.) Lye; Robson in Kirkia 1: 41, 1961 (under *Rhynchospora*); Raymond in Mitt. Bot. Staatssamml. München 10: 586–588, 1971; Larridon & al. in Bot. J. Linn. Soc. 167: 26, 2011; idem, ibid. 172: 114, 122, 2013; Uberti & al. in Bot. Rev. 82: 244, 2016 (spikelet structure). – Icon.: Lye in Bot. Not. 125: 213, 1972; Haines & Lye, Sedges & rushes E. Afr.: 293, 1983; Browning & Gordon-Gray in Nord. J. Bot. 13: 508–509, 1993; Fl. Trop. E. Afr., Cyper.: 262, 2010; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 80, 2017.

bas.: *Schoenus erinaceus* Ridl.

syn.: *Rhynchospora erinacea* (Ridl.) C. B. Clarke; *Actinoschoenus erinaceus* (Ridl.) Raymond; ***Cyperus erinaceus*** (Ridl.) Kük.

Perennial herb with a creeping scale-covered rhizome; with persistent bulb-like swellings at base of old culms; culms 0,6–1,2 m long, 1,6–2 mm ∅, obtusely angled near base, trigonous above, glabrous, fistular, closely striate; leaves few, rigid, shorter than culms; sheaths brownish straw-coloured, 13–24 cm long,

ultimately breaking into fibres; blades linear, flat, 33−51 cm long, 3,3−5 mm wide, stiff, acuminate, minutely papillose; inflorescence capitate, whitish, globose, 2−2,5 cm ∅, densely compact, of many spikelets; these linear-lanceolate, acuminate, c. 8−12 mm long, each with several distichous persistent glumes of increasing length, largest penultimate glume subtending a flower; largest glume 6−9 mm long, < 2 mm wide, acute; spikelets deciduous as a unit; flower bisexual, only one fertile per spikelet; nutlet narrowly obovate, c. 4 × 1 mm, beaked, finely puncticulate.

Brachystegia- and *Brachystegia-Uapaca* woodland; open woodland; stony or red loam soil; woods among deep herbage near stream; locally common in Zambia; 1200−2200 m alt.

? Also in Zaire.

(STENOPHYLLUS)

Stenophyllus capillaris fa. *major* H. Pfeiff.
= **Bulbostylis burchellii**
capillaris var. *striatinux* H. Pfeiff. = **B. pusillla**
collinus (Kunth) Chiov. = **B. contexta**
craspedotus (Chiov.) Chiov. = **B. craspedota**
filiformis (C. B. Clarke) H. Pfeiff. = **B. hispidula** subsp. **filiformis**
puberulus (Kunth) Killip = **B. thouarsii**

TETRARIA/ *4*

Tetraria P. Beauv. 1816, nom. cons. prop. (Larridon & al. in Taxon 66: 1226−1227, 2017): "The need for this proposal arises because recent molecular phylogenetic analyses … reveal that *Tetraria* as currently circumscribed is polyphyletic, comprising multiple independent evolutionary lineages. Two multispecies lineages have been recognised in South Africa, identifiable by key morphological differences: (1) ca. 30 *Tetraria* species in the *Tricostularia* clade of *Cyperacea* tribe *Schoeneae* have noded culms and a reticulate tunic surrounding the culm base, and (2) ca. 17 *Tetraria* species in the *Schoenus* clade of tribe *Schoeneae* have a culm without nodes and do not have reticulate sheaths at the culm base …Several other independent *Tetraria* lineages have also been identified, including *Tetraria borneensis* J. Kern in the *Caustis* clade of tribe *Schoeneae*, *Tetraria capillaris* (F. Muell.) J. M. Black in the *Lepidosperma* clade, and *Tetraria octandra* (Nees) Kük. in the *Tricostularia* clade … Since the lineage containing the original and current type of *Tetraria* (*T. thuarii* P. Beauv.) (i.e., the clade without culm nodes and without reticulate sheaths) is embedded within the genus *Schoenus* L. (Sp. Pl.: 42, 1753), Elliot & Muasya (in S. African J. Bot. 112: 354−360, 2017) recently transferred both the 17 non-reticulate *Tetraria* species (including *T. thuarii*) and 7 species of the closely related genus *Epischoenus* C. B. Clarke into *Schoenus*. This transfer results in *Tetraria* being a synonym of *Schoenus*, with the more than 30 species of the other lineages of *Tetraria* s.l. being left in need of a new name. However, for nomenclatural consistency and since *Tetraria*, in particular the group known as reticulate-sheathed *Tetraria*, represent an important and well-known plant group of the Cape Floristic Region … we here propose to conserve the name *Tetraria* with *Tetraria thermalis* as type … If we do not conserve *Tetraria* with a type belonging to the reticulate-sheathed *Tetraria* clade, we lose the use of the well-known name *Tetraria* and we will have to generate more than 20 new combinations for the species of this lineage under the name *Schoenopsis* P. Beauv. ex T. Lestib."

See also our introduction to **Schoenus** above (p. 324).

Tetraria in its traditional sense comprises some 50 species almost entirely confined to South Africa; also known in Borneo, Australia, New Zealand (cf. Goetghebeur in K. Kubitzki, ed., The Families and genera of vascular plants: 177−178, 178−179, *Costularia*, 1998; Fl. Trop. E. Africa, Cyper.: 371−373, 2010; Browning & Goetghebeur, Sedge genera Africa & Madag.: 81, 2017).

ELLIOTT, T. L. & A. M. MUASYA (2017). Taxonomic realignement in the southern African Tetraria (Cyperaceae, tribe Schoeneae; Schoenus clade). *S. Afric. J. Bot*. 112: 354−360.

ELLIOTT, T. L. & A. M. MUASYA (2018). A taxonomic revision of Schoenus compar-Schoenus pictus and allies (Cyperaceae, tribe Schoeneae) with three new species described from South Africa. *S. Afric. J. Bot*. 114: 303−315.

ELLIOTT, T. L. & A. M. MUASYA (2019). Three new species and a new combination among Southern African Schoenus (Cyperaceae, tribe Schoeneae). *Phytotaxa* 401: 267−275.

ELLIOTT, T. L. & al. (2019). A taxonomic revision of Schoenus cuspidatus and allies (Cyperaceae, tribe Schoeneae) – Part 1. *S. Afric. J. Bot*. 121: 519−535.

LARRIDON, I. & al. (2017a). Molecular phylogenetics of the genus Costularia (Schoeneae, Cyperaceae) reveals multiple distinct evolutionary lineages. *In:* MUSILI, P. M. & G. MWACHALA, eds., *XXI AETFAT Congress 2017*: 23−24.

LARRIDON, I. & al. (2017b). (2555) Proposal to conserve the name Tetraria (Cyperaceae) with a conserved type. *Taxon* 66: 1226−1227.

LARRIDON, I. & al. (2018). Revised delimitation of the genus Tetraria, nom. cons. prop. (Cyperaceae, tribe Schoeneae, Tricostularia clade). *S. Afric. J. Bot*. 118: 18−22.

MUSILI, P. M. & al. (2016). Schoenus (Cyperaceae) is not monophyletic based on ITS nrDNA sequence data. *Austral. Syst. Bot*. 29: 265−283.

SEMMOURI, I. & al. (2019). Phylogeny and systematics of Cyperaceae, the evolution and importance of embryo morphology. *Bot. Rev*. 85: 1−39.

Tetraria cuspidata (Rottb.) C. B. Clarke, *incl*. var. *lorea* C. B. Clarke, but *excl*. var. *angustata* Kük. [= *T. ligulata* (Boeckeler) C. B. Clarke, fide Elliot & al. 2019: 526, cited as *Schoenus ligulatus* (Boeckeler) Kuntze]. – Icon.: Clarke, Ill. Cyper.: pl. 89/5−8, 1909; Gordon-Gray, Cyper. Natal: 189−190, 1995; Fl. Trop. E. Afr., Cyper.: 372, 2010; Elliot & Muasya (2017): 357, 358 (text), 359 (synonyms).

bas.: *Schoenus cuspidatus* Rottb. 1773.

syn.: *Scirpus cuspidatus* Roem. & Schult. 1817; *Chaetospora cuspidata* Nees 1832; *Elynanthus cuspidatus* (Rottb.) Nees; *E. gracilis* Nees; *E. microstachyus* Boeckeler; *E. loreus* Nees; *Schoenus aristatus* Nees ex Kunth 1837, nom. inval., non Thunb. 1794; *Sch. flexuosus* Steud. ex Kunth 1837, non Thunb. 1794; *Sch. loreus* (Nees) Kuntze; *Fuirena filifolia* Rchb. ex Kunth 1837, pro syn.

Perennial tufted, grass-like herb to 60 cm tall; culms rounded, 17−47 cm long, 0,4−1 mm ∅, with shallow longitudinal ridges, glabrous, bluish-green, nodeless between base and inflorescence, and with scale-like structures towards the inflorescence; base of plant *dark purple-red to blackish, shining*, old leaf sheaths fibrous, 1−10 cm long; leaf blades linear, 10−25 cm long, 0,6−1,2 mm wide, margins scabrid, apex acuminate; inflorescence terminal, brown, a slender panicle with clusters of spikelets at end of 2−3 primary branches 0−1,3 cm long; spikelets 3−4 per cluster, lanceolate, 3,2−7,3 × 0,5−1,2 mm; glumes 6−7 per spikelet, distichous, increasing in size towards apex; "spikelets fall almost intact leaving only bracts and small basal glumes on inflorescence branches" (Gordon-Gray, l.c.).

Ecology in Kenya unknown (and specimens immature); in S. Africa: sparse grassland often among rocks and mostly in sandstone derived soils; ? – 1500 – 2500 m alt.

S. Africa, Lesotho.

In S. Africa often confused with *T. bolusii* C. B. Clarke.

"A difficult taxon … requiring detailed study throughout its distributional area and during several seasons. Its morphological variability is perhaps based in ecotypic plasticity and a partial separation of the sexes" (Gordon-Gray, l.c.).

T. mlanjensis J. Raynal, Adansonia, N. S. 12: 213, 1972; Haines & Lye, Sedges & rushes E. Afr.: 321, 1983; Strugnell, Checklist spermat. Mt Mulanje, Malawi: 78−79, 2006; Larridon & al. (2018): 21. – Icon.: Raynal, o.c.: 214.

Erect tufted herb 30−40 cm tall; culms rounded, slightly striate, 0,6 mm ∅; basal leaves numerous with purplish sheaths, the old ones split into pale fibres; blade setaceous, 20−25 cm long, 0,6−0,7 mm wide, margins scabrid; cauline leaves 1−2; inflorescence narrow, elongated, composed of panicles spread out along the main axis; lateral panicles 1−2 per node in axils of bracts; spikelets ovoid-lanceolate, 3,5−4 mm long, brown; glumes 8−10 per spikelet, distichous, increasing in size towards apex; nutlet obovoid, inflated, pale yellow, c. 1,7 × 1 mm.

Grassland; dry rocky habitats, between rock slabs; c. 2100−2200 m alt.

S. Africa.

Resembling *T. usambarensis* but leaf blade shorter (20−25 cm, not 27−33 cm), spikelets shorter (3,5−4 mm, not 0,5−10 mm), nutlet smaller (c. 1,7 mm long, not 3−4 mm), and pale yellow (not brown/red brown).

May be mistaken for a *Rhynchospora rugosa* by its narrow open inflorescence.

T. natalensis (C. B. Clarke) T. Koyama; Strugnell, Checklist spermat. Mt Mulanje, Malawi: 76, 2006 (under *Costularia*); Larridon & al. (2018): 20. – Icon.: Gordon-Gray, Cyper. Natal: 190−191, 1995.

bas.: *Costularia natalensis* C. B. Clarke

Perennial glabrous herb forming clumps and growing usually as isolated plants, up to 1,8 m high when flowering, with horizontal stolons clothed by rigid lanceolate scales 2,5 cm long; culms 0,9 m tall and more, rounded, tough, striate; leaves 28−45 cm long, 0,6−0,8 mm wide, very rough, margins scabrid; inflorescence a *copiously branched panicle*, 50 cm long, 3,7 cm wide, nearly continuous with well-developed erect branches densely provided with small spikelets; these *crowded*, *dark* chestnut-red, hard, compressed, c. 6 × 2 mm.

Grassland; 1800−2000 m alt.

S. Africa, Swaziland.

Possible confusion with *Cladium mariscus*, but ecology different.

T. usambarensis K. Schum.; Chermezon in Bull. Soc. Bot. France 82: 342, 1935 (as *T. circinalis* C. B. Clarke); Fl. Trop. E. Afr., Cyper.: 371, 2010; Larridon & al. (2018): 21. – Icon.: Haines & Lye, Sedges & rushes E. Afr.: 320, 1983.

syn.: *T. circinalis* C. B. Clarke 1894, nom. nud., 1902 nom. illeg., non (Schrad.) C. B. Clarke 1894 [= *T. microstachys* (Vahl) H. Pfeiffer, S. Africa]; *T. circinalis* (Schrad.) C. B. Clarke var. *usambarensis* (K. Schum.) Kük.; *Elynanthus usambarensis* Engl. 1894, nom. nud.

Perennial herb to 60 cm tall; base rounded, enclosed in black fibres (remains of old leaf bases); culms tufted, rounded-trigonous, 10−50 cm long, 0,5−1,5 mm ∅, glabrous, longitudinally ridged; leaf sheaths blackened, 3,5−5 cm long; basal leaves shorter than culm; cauline leaves linear, involute, flexuous above, 27−33 cm long, 1,2−2 mm wide, some exceeding the culm, rigid, apex often blackened, acuminate, scabrid; inflorescence a simple

panicle, 5−15 cm long, with clusters of 1−5 spikelets; these ovoid, 5−10 × 1,5−3,5 mm; glumes 8−11 per spikelet, brown, lower 7−9 empty, ovate-elliptic, c. 5 × 3 mm, awned, the upper 2 subtending bisexual flowers; nutlet ovoid-obovoid, 3−4 × 1,5−1,8 mm, with 3 strong pale-coloured ribs.

Dry sandy places, often in ericaceous zone; 1100−1750 m alt., to 2400−2790 m in Zaire.

SYNONYMS:

Tetraria circinalis C. B. Clarke 1894, nom. nud., non (Schrad.) C. B. Clarke 1894 = **Tetraria usambarensis**
circinalis (Schrad.) C. B Clarke var. *usambarensis* (K. Schum.) Kük. = **T. usambarensis**

(THRYOCEPHALON)

Thryocephalon nemorale J. R. Forst. & G. Forst; 1775 = **Kyllinga nemoralis**

TORULINIUM / *1*

Torulinium Desv. ex Ham.; syn.: *Cyperus* L. subgen. *Torulinium* (Desv. ex Ham.) Kük. (other synonyms in Kükenthal in Engler, Pflanzenreich IV. 20/101: 614, 1936).

Torulinium odoratum (L.) S. S. Hooper; Chermezon in Bull. Soc. Bot. France 82: 335, 1935 (as *T. ferax*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 1: 646, 1985; Simpson & Inglis in Kew Bull. 56: 301, 2001 (as *Cyperus odoratus*); Akoègninou & al., Fl. analyt. Bénin: 95, 2006 (idem); Naczi & Ford, Sedges: Uses…: 39−40, 2008 (idem); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 228, 2011. – Icon.: Lowe & Stanfield, Fl. Nigeria: Sedges: 140, 1974; Berhaut, Fl. ill. Sénégal 9: 347, 1988; Fl. Gabon 44, Cyper.: 74, 2012 (as *Cyperus odoratus*); Fl. China, Ill. 23: 327, 2012; Velayos & al., Fl. Guinea Ecuat. 11: 352, 2014; Browning & Goetghebeur, Sedge genera Africa & Madag.: 82, 2017 (under *Torulinium*).

bas.: ***Cyperus odoratus*** L.

syn.: *Cyp. ferax* L. C. Rich. 1792; *Cyp. ferox* Vahl 1805; *Cyp. speciosus* Vahl 1805, and Torr. 1858 (*Cyp. speciosus* Torr. 1858, nom. illeg.); *Cyp. densiflorus* G. Mey. 1818, non Link 1820 nec Hemsl. 1885; *Cyp. ferax* var. *densiflorus* (G. Mey.) Kük.; *Cyp. conglobatus* Link; *Cyp. hamiltonii* Kunth; *Cyp. familiaris* Steud.; *Cyp. vahlii* Boeckeler; *Torulinium ferax* (L. C. Rich.) Ham.; *T. confertum* Desv. ex Ham.; *Mariscus ferax* (L. C. Rich.) C. B. Clarke; *Diclidium aciculare* Schrad. ex Nees; *D. conglobatum* (Link) Nees ex B. D. Jacks; *D. ferax* (L. C. Rich.) Schrad. ex Nees; *D. ferax* (L. C. Rich.) Steud.; *D. odoratum* (L.) Schrad. ex Nees; further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew (under *Cyperus odoratus*).

Perennial (sometimes short-lived) herb to 3 m tall; culms 0,5−2,5 m long, 0,6−1,2 cm ∅, triquetrous, base inflated; leaf sheaths red-violaceous; blades 0,1−1 m long, 0,4−2 cm wide, v or w in section, margins scabrous; inflorescence large, much-branched, with primary bracts large, leaf-like, a compound or decompound anthela with several stout primary rays mostly to 20 cm long, ± stiff, each with several raylets 0−2 cm long; each ray ending in a spike usually 2−3 cm long with c. 20 spikelets arranged evenly along the rachis and at right angles to it; spikelets subcylindrical, 1−3 cm long, 1−1,5 mm wide, 6−25-flowered, flowers bisexual; spikelets sometimes deciduous as a unit, but usually

breaking up into 1-flowered units as the rachilla is fragile; such rachilla segments may be dispersed by water (Naczi & Ford, l.c.).

Damp sandy shore; wet places with *Pistia stratiotes*; damp fields among *Sorghum* plantations; swamps on coastal dunes; lagoon edges; near surface water; grassy swamps; fallows; near sea-level to 200 (−2000) m alt.

Pantropical, subtropical; Bioko/Fernando Poo, ? San Tomé – Príncipe; Madagascar; S Asia from Burma E-wards to Korea, Japan, Malaysia, New Guinea, Philippines, E Australia; N., C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 268, 2012). Frequently cited as a weed, or a "pest of rice".

"*Cyperus odoratus* L. subsp. *odoratus*" is cited from Africa and nearly the whole distribution area, whereas "*Cyp. odoratus* subsp. *transcaucasicus* (Kük.) Kukkonen" (bas.: *Cyperus ferax* subsp. *transcaucasicus* Kük.) occurs in an area from SE Transcaucasus to NW Iran.

In S Europe widely confused with *Cyperus strigosus* L. (Verloove in Webbia 69: 201−203, 2014), but the latter has *flattened spikelets*.

"Differs from *Mariscus* in which the rachilla falls off entire, or *Cyperus* and *Pycreus*, in which the rachilla remains attached to the axis of the inflorescence" (Lowe & Stanfield, l.c.).

SYNONYMS:

Torulinium angolense Turrill = **Cyperus laxus** subsp. **buchholzii**
confertum Desv. ex Ham. = **Torulinium odoratum**
ferax (L. C. Rich.) Ham. = **T. odoratum**

(TRICHELOSTYLIS)

Trichelostylis complanata (Retz.) Nees = **Fimbristylis complanata**
contexta Nees = **Bulbostylis contexta**
obtusifolia (Lam.) Nees = **Fimbristylis cymosa** subsp. **cymosa**
schimperiana (Hochst. ex A. Rich.) Hochst. ex Boeckeler = **Bulbostylis schimperiana**

(TRICHOPHYLLUM)

Trichophyllum chaetaria (Roem. & Schult.) House = **Eleocharis retroflexa** subsp. **chaetaria**

(TRILEPIS)

Trilepis abyssinica (Hochst. ex A. Rich.) Boeckeler = **Coleochloa abyssinica**
oliveri Boeckeler = **C. setifera** subsp. **setifera**
pilosa Boeckeler = **Afrotrilepis pilosa**
rehmanniana Boeckeler ex C. B. Clarke = **Coleochloa setifera** subsp. **setifera**
setifera (Ridl.) Kuntze = **C. setifera**

(TUNGA)

Tunga laevigata Roxb. = **Lipocarpha chinensis**

(UNCINIA)

Uncinia digyna Hochst. ex Steud. = **Carex monostachya**
lehmannii Nees = **Schoenoxiphium lehmannii**
runssoroensis (K. Schum.) Spreng. = **Carex runssoroensis**

spartea (Wahlenb.) Spreng. 1826 = **Schoenoxiphium sparteum**
spartea Nees 1835 = **Sch. sparteum**
sprengelii Nees 1835 = **Sch. sparteum**

(VIGNEA)

Vignea ammophila (Willd.) Rchb. = **Carex divisa**
austroafghanica (Raymond) Soják = **C. divisa**
bertolonii (Schkuhr) Rchb. = **C. divisa**
conjugata (Willd. ex Kunth) Rchb. = **C. brunnea** subsp. **brunnea**
divisa (Huds.) Rchb. = **C. divisa**
setifolia Fourr. = **C. divisa**

VOLKIELLA / *1*

Volkiella Merxm. & Czech, Mitt. Bot. Staatssamml. München 8: 318, 1953; monotypic genus, now considered a segregate genus of the "Cyperus clade" (*Cyperus*); cf. Larridon & al. in Bot. J. Linn. Soc. 172: 114, 122, 2013; Desai & Raole in Rheedea 24: 81, 2014; Uberti & al. in Bot. Rev. 82: 244, 2016.

Volkiella "can be seen as an extremely specialized lineage adapted to psammophytic habitats… [it] shows highly derived pseudo-spikelets with a Bauplan comparable with that of *Lipocarpha*, possessing a spikelet bract a spikelet prophyll, a proximal glume subtending the single flower and a spikelet bract larger than the glume. Pecularlarly … the spikelets are distichously arranged on the spike axis … [it] shows an abundance of autapomorphic, derived characters which isolate it from all other C_4 *Cyperus* spp., it is nested in *Lipocarpha* and should thus be sunk into *Cyperus* together with *Lipocarpha*" (Larridon & al., o.c.: 122).

BAUTERS, K. & al. (2014). A new classification for Lipocarpha and Volkiella as infrageneric taxa of Cyperus s. l. (Cypereae, Cyperoideae, Cyperaceae): insights from species tree reconstruction supplemented with morphological and floral developmental data. *Phytotaxa* 166: 1−32.

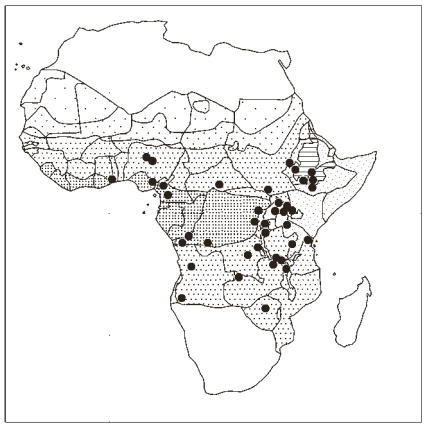
Volkiella disticha Merxm. & Czech; Goetghebeur in K. Kubitzki, ed., Families & genera vascul. pl. 4: 172, 1998; Clarke & Mannheimer, Cyper. Namibia: 91, 66 (map), 1999; Loots, Red Data Book of Namibian Plants (SABONET Rep. 38): 48−49, 2005; Huygh & al. in Taxon 59: 1888, 2010; Bauters & al., o.c.: 19 (as *Cyperus distichus*). – Icon.: Mitt. Bot. Staatssamml. München 8: 319, 1953; Hooper in Kew Bull. 41: 946, 1986; Archer & Craven, Cyper. Namibia: 25, 2004; Browning & Goetghebeur, Sedge genera Afr. & Madag.: 86, 2017.

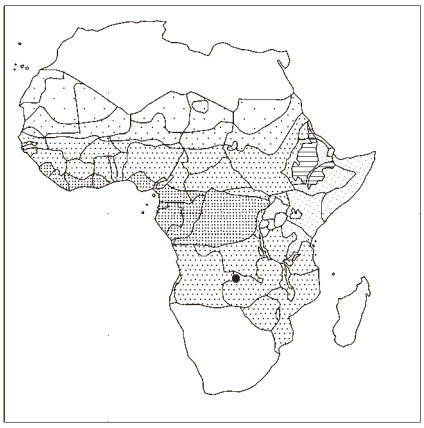
syn.: ***Cyperus distichus*** (Merxm. & Czech) Bauters

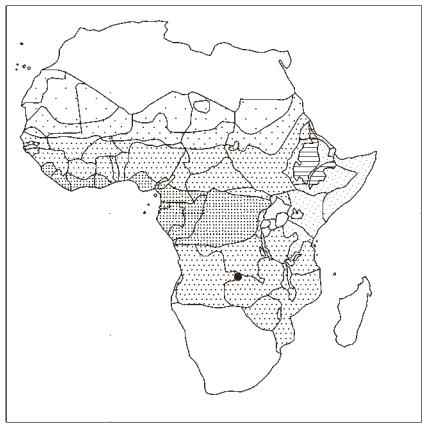
Annual tufted herb; culms bristly, 0−3 cm tall, with basal nodes; leaves basal with closed sheath; blade with crescentiform profile, without keeled midrib; inflorescence capitate, with 2−4 spikes each 5−6 × 3,5 mm, laterally compressed; subtending bracts erect, very long; spikelet bracts in 2 opposite rows in same plane, 2,5−4 mm long, ending in an awn 1−7 mm long; spikelets highly reduced, with a prophyll and a tiny hyaline glume subtending a flower, 1 glume per spikelet; flowers bisexual; nutlet cordate-obovate, 1 mm long, finely puncticulate.

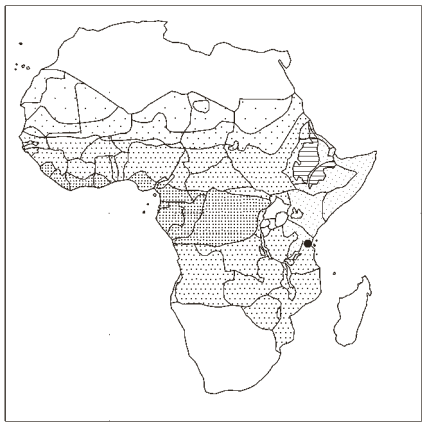
Grassland on temporarily wet sandy soil, ephemerophyte, nearly completely buried in sand.

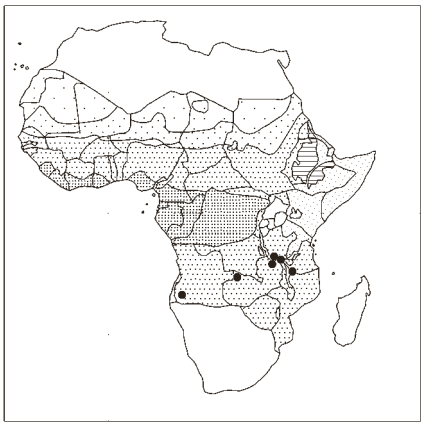
NE Namibia.

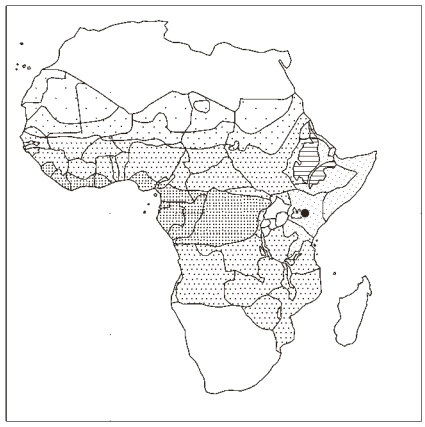

Scleria woodii

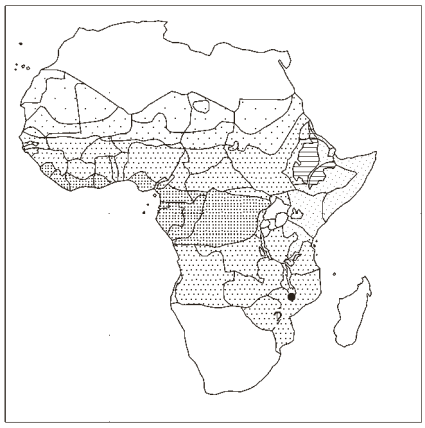

Scleria xerophila

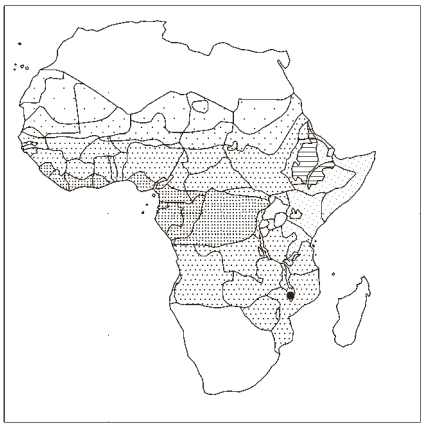

Scleria zambesica

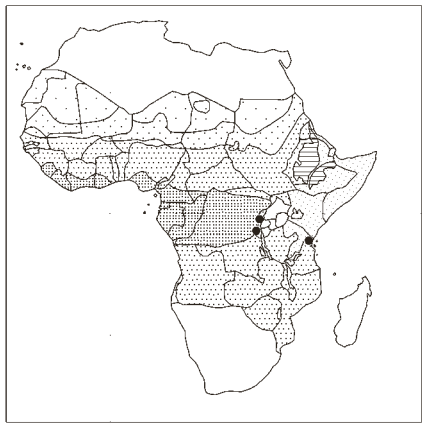

Scleria pseudosorghum
(unplaced name)

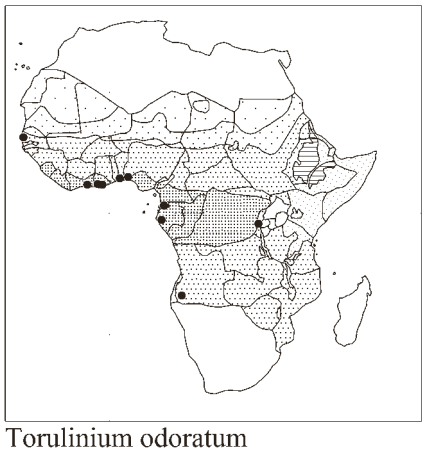

Sphaerocyperus erinaceus

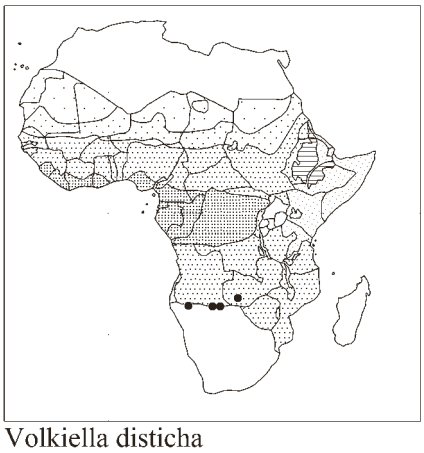

Tetraria cuspidata

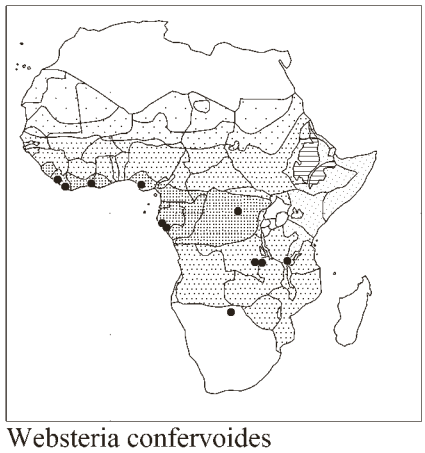

Tetraria mlanjensis


Tetraria natalensis


Tetraria usambarensis


Torulinium odoratum


Volkiella disticha


Websteria confervoides

WEBSTERIA / *1*

Websteria S. H. Wright, "derived from within *Eleocharis*", and "this clade, representing the Eleocharideae, is sister to the Abildgaardieae … New nomenclature is suggested to place the species of … *Websteria* in *Eleocharis*" (Hinchliff & al., o.c.: 709).

Websteria, a monotypic genus, is treated (maintained) by Goetghebeur in K. Kubitzki, ed., the families and genera of vascular plants 4: 166, 1998 (in the tribe *Eleocharideae* Goetghebeur 1985) and by Browning & Goetghebeur, Sedge genera Africa & Madagascar: 87, 2017.

HINCHLIFF, C. E. & al. (2010). The origin of Eleocharis (Cyperaceae) and the status of Websteria, Egleria, and Chillania. *Taxon* 59: 709−719.

Websteria confervoides (Poir.) S. S. Hooper; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 115, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 228, 2011; Mesterházy in Lidia 7/5: 121, 2012 (Liberia); Harris & al. in Pl. Ecol. Evol. 145: 247, 2012. – Icon.: Hooker's Icon. Pl. 14: pl. 1344, 1881; Lowe & Stanfield, Fl. Nigeria: Sedges: 8, 1974; Lisowski & Malaisse, Groupements végétaux des mares et des anses calmes des rivières du plateau des Kundelungu, in J.-J. Symoëns, Exploration hydrobiologique du Bassin du Lac Bangweolo et du Luapula, Résultats scientifiques 18/1: 34, 1989; Haines & Lye, Sedges & rushes E. Afr.: 76, 1996; Cook, Aquat. pl. book, ed. 2: 84, 1996; Goetghebeur in Kubitzki, o.c.: 163, 166 (text) 1998; Cook, Aquat. & wetland pl. south. Afr.: 122, 2004; Fl. Trop. E. Afr., Cyper.: 48, 2010; Hinchliff & al., o.c.: 715; Fl. Gabon 44, Cyper.: 119 (nutlet), 124, 2012 (under *Eleocharis*); Browning & Goetghebeur, o.c.: 87, 2017.

bas.: *Scirpus confervoides* Poir.

syn.: *Baeothryon confervoides* (Poir.) A. Dietr.; *Schoenus confervoides* (Poir.) Willd. ex Kunth; *Dulichium confervoides* (Poir.) Alston; *Scirpus submersus* C. Wright; *Rhynchospora ruppioides* Benth.; *Scirpus ruppioides* Thwaites ex C. Wright 1871, nom. nud.; *Websteria submersa* (C. Wright) Britton, incl. var. *luetzelburgii* Suess., and var. *negrensis* Suess.; ***Eleocharis confervoides*** (Poir.) Steud. 1855 (also attributed to Kunth 1837, T. Koyama 1985, and G. C. Tucker 1987); further synonyms in World Checklist of Selected Plant Families, Cyperaceae, Roy. Bot. Gard., Kew.

Perennial, slender but strong and wiry-stemmed, submerged or floating herb 0,3−1 m long, with an extensive, fine, pseudoverticillate branching pattern, upper parts of stems with nodes each with branches arranged subumbellately, subtended by greyish, pink or dark purple reduced leaves; each of the branches may have new whorls of branches, the branching repeated until nodes of the 4th order but the final are subtending sterile culms or less often a stalked spikelet; branchlets filiform; spikelets borne singly, very narrow, pointed, c. 1 cm × 1,5−2 mm, consisting of 2 glumes enclosing 3 stamens and 1 achene; diaspores (nutlets) yellow-brown, 3-angled, c. 1 mm long, papillate, with persistent and barbed perianth segments, dispersed by animals.

Edge of swamp; shore of shallow pool; submerged or as floating mats in warm, slow-flowing fresh water of ponds and lakes, in 0,9−1,5 m of water; c. 0−2080 m alt.

Botswana; Madagascar; S India, Sri Lanka, Malay Peninsula; tropical & subtropical America from S-SW USA, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 273, 2012 under *Eleocharis*).

Similar to *Eleocharis naumanniana*, especially when sterile.

SYNONYMS:

Websteria submersa (C. Wright) Britton, incl. var. *luetzelburgii* Suess, and var. *negrensis* Suess. = **Websteria confervoides**

(ZULUSTYLIS)

Zulustylis hygrophila (Gordon-Gray) Muasya 2020 = **Abildgaardia hygrophila**

Rhynchospora rubra subsp. *senegalensis* J. Raynal, see p. 309
Aline Raynal-Roques

VII. INDEX TO GENERA

This Index only gives reference to current names of genera used in the text (not on the maps which are in turn placed as closely as possible to the matching descriptions). Synonyms are sometimes cited (printed in *italics*).

However, many synonyms, but perhaps not all genera figure in the Cumulative Index "Enumértion des plantes à fleurs d'Afrique tropicale" present at the end of the fourth volume (1997: pp. 678–712). Readers are invited to consult that index.

Conservatoire
et Jardin
botaniques
Genève

ISBN 978-2-8277-0138-4 9 782827 701384