

New combinations, varieties and synonyms in African Compositae

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Abstract

The following notes were gathered during the writing of the account of the Compositae for the Flora of Ethiopia and while revising *Bidens* and *Coreopsis*. As the publication of the volume containing the Compositae will not be forthcoming in the near future, some new combinations, synonyms and varieties in the tribes Astereae, Cardueae, Heliantheae, Inuleae, Lactuceae and Senecioneae are provided here.

Astereae

1. *Conyza* LESS.

Conyza hypoleuca A. RICH., Tent. Fl. Abyss., vol. 1, p. 391 (1848).

Microglossa elliotii S. MOORE, J. Linn. Soc. Bot. 35: 327 (1902); CUFODONTIS, Enumeratio Plantarum Aethiopiae, sequentia, Bull. Jard. Bot. Nat. Belg. 37, Suppl.: 1084 (1967), **synon. nov.** Type: Kenya, Naivasha, ELLIOT 7034 (BM!, holotype).

Other specimen: Kenya, Masai, ELLIOT 6589 (BM!).

2. *Felicia* CASS.

Felicia abyssinica SCH. Bip. ex A. RICH., Tent. Fl. Abyss., vol. 1, p. 383 (1848).

This is a polymorphic species currently known from the north-eastern parts of Sudan down to Zambia. It is made up of populations that show some variations in the density of the indumentum on various parts of the plant, size of leaves and height of the plant. These variations can be recognized as follows:

1. Peduncle, phyllaries and often also leaves with dense, capitate-glandular hairs intermixed with simple flexuous hairs 1. var. *abyssinica*
- Peduncle, phyllaries and leaves with simple, stiff and bristly hairs, internodes densely pilose, white 2
2. Leaves 5-10 (-25) x 1-2 mm; plant up to 15 cm high 2. var. *schimperi*
- Leaves 10-30 x (1-) 2-3 mm; plant 20-40 cm high 3. var. *neghelliensis*

1. var. *abyssinica*

Felicia abyssinica subsp. *abyssinica* sensu GRAU in Mitt. Bot. Staats. Münch. 9: 195–705 (1973).

This variety is confined to the northern parts of Ethiopia and Eritrea and adjacent parts of Sudan (i.e., Kassala Prov., Red Sea Hills).

Selected specimens: **Eritrea:** Senafe, 19 Aug. 1959, MOONEY 7986 (ETH, K), 11 Sept. 1954, COLVILLE 59 (K); N Sahil, 1986, JONES 107 (K); Akale Guzai, Halai, 11 May 1902, PAPPI (5224) 87 (K); Saganeiti, 21 April 1892, SCHWEINFURTH & RIVA 1738 (K). **Ethiopia:** Tigrai, Urahit, Jan. 1839, SCHIMPER 1763 (K), and 813 (K); Adigrat, 20 Jan. 1963, TEKLE H. HAGOS 167 (ETH, K); no data, PETTIT s.n. (K), QUARTIN-DILLON & PETTIT s.n. (K), G. AWEKE & GILBERT 772 (ETH, K). **Sudan:** Red Sea Hills, Diris Pass, 10 April 1953, JACKSON 2890 (K); Kassala Prov., March 1938, COOK K2 (K).

2. var. *schimperi* (STEUD. & HOCHST. ex JAUB. & SPACH) MESFIN, **comb. nov.**

Felicia schimperi STEUD. & HOCHST. ex JAUB. & SPACH., Illust. Pl. Or. 4: 86, Table 354 (1852). Type: Arabia Felix (= Yemen), Cara, SCHIMPER 858 (?B, holotype, K isotype!)

Felicia abyssinica SCH. BIP. ex A. RICH. subsp. *neghelliensis* GRAU, loc. cit. (1973), quoad specim. ex Ethiop. (p.p.), Yemen et Somalia.

This variety is known from Yemen, eastern and south-central Ethiopia and Somalia. In habit, it resembles var. *abyssinica* but differs from it by the absence of the capitate glandular hairs. From var. *neghelliensis* it differs by its narrower and often smaller leaves and smaller size.

Selected specimens: **Ethiopia:** Shewa, between Awash & Meki rivers, 1898 and 1899, WELLBY s.n. (K, two specimens); 5 km S of Meki, 26 July 1972, M.G. & S.B. GILBERT & TEWOLDE 2476 (ETH, K); Keffa, Jimma, 12 Aug. 1961, BREHME in MOONEY 9088 (ETH, K); Hararge, Diredawa, Dec. 1957, IECAMA A-8 (K); Garamulletta, 5 May 1960, IECAMA H-37 (K); Jijiga, 24 July 1959, SANDFORD in MOONEY 7957 (K).

3. var. *neghelliensis* (CUFOD.) MESFIN, **comb. nov.**

Felicia neghelliensis CUFOD., Nuovo Giorn. Bot. Ital. 50: 104 (1943), Enumeratio Plantarum Aethiopiae, sequentia. - Bull. Jard. Bot. Nat. Belg. 37, Suppl.: 1083 (1967); *F. abyssinica* SCH. BIP. ex A. RICH. subsp. *neghelliensis* (CUFOD.) GRAU, 1973: 404. Type: Ethiopia, [Sidamo], Neghelli, CORRADI 1952, 1957, 1967, 1968, 1999 and 2000 (?FT, syntypes).

CUFODONTIS (1943) cited the above specimens when he described the taxon. In 1967, he substituted "CUFODONTIS 166 (Neghelli, 10 km Malca-Guba versus)" for the above types but gave no explanation.

?*F. hyssopifolia* sensu CUFOD., loc. cit. (1967) non (BERG.) NEES (1822), quoad BURGER 1722 et 3056.

Selected specimens: Ethiopia: Sidamo, 25 m. W of Neghelle, Cure Liban, 21 Sept. 1953, BALLY 9297 (EA); 33 km on Negelle-Filtu road, 20 May 1982, FRIIS et al. 3129 (ETH, K), 35 km on Negelle-Filtu road, 2 Nov. 1972, FRIIS et al. 921 (ETH, K); 16 km NNE of Yavello, 13 May 1976, GILBERT & JEFFORD 4469 (ETH, K); 13 km on Megado-Mega track, 25 May 1986, MESFIN & VOLLESEN 4332 (ETH, K). **Somalia:** Erigavo, 26 Jan. 1945, GLOVER & GILLILAND 657 (K); Tabah Pass, road from Erigavo to Mait, 31 July 1957, NEWBOULD 783 (K); Hargeissa, Oct. 1961, HEMMING 2242 (K); Gah Libah, 3 Nov. 1956, BALLY 11307 (EA). **Kenya:** (K1): NEWBOULD 3529 (K), (K3): BOGDAN 3685 (K), NEWBOULD (3304); (K4): GILBERT 6089 (K), NAPIER 2408 (K).

Cardueae

1. *Carduus* L.

Carduus macracanthus SCH. BIP. EX KASMI

Carduus macracanthus KASMI, Mitt. Bot. Staats. München 5: 164 (1983), **nom. non rite publ.**; *C. macracanthus* SCH. BIP. in SCHWEINF. & ASCHERS., Beitr. Fl. Aethiop.: 283 (1867), in OLIVER & HIERN, Fl. Trop. Afr. 3: 434 (1877), in FRIES, Acta Horti Berg. 8: 35 (1925), nom.nud. Type: Ethiopia, SCHIMPER 51 (G holotype; B, K! P, isotypes).

OLIVER & HIERN (1877) recorded *Carduus macracanthus* SCH. BIP. as a doubtful and unknown species, doubtful because they saw only "a single involucre bract with a pinnatifid spine, lent from the Berlin Herbarium". Recent specimens of the species, collected from high mountains (between 3950 - 4000 m) in Ethiopia, have confirmed its existence and it can be distinguished from close relatives by its wider (2.5-3.5 mm

at base versus less than 2 mm) phyllaries with sharply laciniate (versus entire or hispid) margins and its dense white-woolly pubescence.

Specimens: Ethiopia: W. DE WILDE 9187 (K), HEDBERG 5623 (ETH, K, UPS), MESFIN T. 7837 (ETH).

Heliantheae

1. *Guizotia* CASS.

In a recent cytological study on *Guizotia*, KIFLE DAGNE & HENEEN (1992) and KIFLE DAGNE (1994,1995) showed that *G. schimperi* SCH. BIP. ex WALP. (given in their paper as *G. scabra* subsp. *schimperi*) is closer to *G. abyssinica* (L.f.) CASS. than to *G. scabra* (VIS.) CHIOV. (given as *G. schimperi* subsp. *scabra*). The latter species is also found to be more closely related to *G. villosa* SCH. BIP. ex WALP. than to *G. schimperi*. The study, which included material from wild populations for a number of the species, revealed "... three groups [of species] indicating possible phylogenetic relationships". KIFLE DAGNE (1995: 133) also stated that "on the basis of chromosome morphology, ... the Chelelu population (i.e., *G. schimperi* from Shewa in Ethiopia) seems to be more related to *G. abyssinica* and *G. scabra* subsp. *schimperi*". The individuals representing this population, which were collected from a riverine habitat, were also suggested to be the progenitors of *G. scabra* subsp. *schimperi* (= *G. schimperi*). In the same work, the earlier hypothesis by BAAGOE (1974) i. e., that *G. abyssinica* might have been derived either from an unknown wild progenitor or from *G. scabra* subsp. *schimperi*, was also reiterated. KIFLE DAGNE (1995: 134), who also studied wild populations of typical *G. scabra* (from Ketcha in Bale region, Ethiopia) found that these populations are "... generally similar to those of *G. scabra* subsp. *scabra*."

The present author has also studied the morphology of some wild populations of *G. scabra* and *G. schimperi*, and it appears that the differences between them are concealed by the presence of a large number of individuals with intermediate features. These intermediates are weedy plants and are often encountered in and around cultivated fields. They may be annual or perennial plants with variable foliar and capitular features. When the collections made of such populations represent annual plants, they are often identified, in herbaria, as *G. scabra* subsp. *schimperi*. Often these plants grow with annual crops such as *Eragrostis tef* (ZUCC.) TROTT., *Guizotia abyssinica*, etc., in Ethiopia. When left growing in the fields or at the margins, some of these weedy plants perennate, and, if collected in this state, the specimens are determined as *G. scabra* subsp. *scabra*.

In these taxa, the question is not that of incipient speciation, as believed by BAAGOE (1974), but that of continuous hybridization probably accompanied by backcrosses between the two well defined species, *G. scabra* and *G. schimperi*. Although the studies by KIFLE DAGNE and W. K. HENEEN (loc. cit.) are not conclusive about the extent of hybridization within *Guizotia*, KIFLE DAGNE, in particular (1994:127) wrote, "in view of the rather high level of crossability among the present taxa, it is very probable that introgression can take place between any two of these taxa whenever they happen to grow together."

Consequent to these studies, it becomes necessary to recognize the two taxa as distinct species.

Guizotia scabra (VIS.) CHIOV., Ann. Ist. Bot. Roma 8: 184 (1904).

Guizotia scabra subsp. *scabra* sensu BAAGOE, Bot. Tidsskr. 69: 25 (1974), **synon. nov.** Type: Sudan, Fazokel, Tumad, Kassa, KOTSCHY 501 (FI lecto.; K!, W!).

Guizotia schimperi SCH. BIP. ex WALP., Rep. Bot. Syst. 6: 158 (1846).

Guizotia scabra subsp. *schimperi* (SCH. BIP. ex A. RICH.) BAAGOE, loc. cit. (1974), **synon. nov.** Type: Ethiopia, near Adwa, SCHIMPER 401 (TUB lecto.; BM!, K! W!).

Sigesbeckia somalensis S. MOORE, J. Linn. Soc. Bot. 35: 342 (1902), **synon. nov.** Type: Somalia, Sheik Mahomet, 30 Oct. 1894, DONALDSON-SMITH 226 (BM! holo.).

The achenes and corolla of *S. somalensis* are typical of *G. schimperi*.

2. *Aspilia* THOUARS

Aspilia was recently "formally merged" with *Wedelia* JACQ., by ROBINSON (1992). He did this based on the description of the type genus, *A. thouarsii* A. DC. (1836) from Madagascar, given by HUMBERT (1963).

In a cladistic analysis of morphological features, KARIS (1993) found that *Wedelia* and *Aspilia* are sister taxa. In *Wedelia*, he included only American taxa. Elaiosomes, characteristic of the achene bases of *Wedelia*, *Aspilia* and *Exomiocarpon* LAWALREE, were among the characters used in the analysis. *Exomiocarpon* is an endemic genus to Madagascar diagnosed by 1-5, neuter ray florets and kidney-shaped elaiosomes (BREMER 1994). BREMER (op. cit., p. 572) accepted the inclusion of *Aspilia* in *Wedelia* but retained *Exomiocarpon*. Others working on the flora of the Americas have also accepted this treatment (cf. TURNER 1992). Prior to this, STROTHER (1991), working on the North American species of *Aspilia* and *Wedelia*, and McVAUGH (1984), on the flora of part of Mexico, expressed difficulties in separating the American species of

Aspilia from *Wedelia*. Consequently, STROTHER (op. cit.) included all the American species of *Aspilia* in *Wedelia*. About the African species, he wrote "some, perhaps all, African species named in *Aspilia*, may belong within my circumscription of *Wedelia*". TURNER (op. cit.) transferred the South American species of *Aspilia* to *Wedelia* and regarding the African species, he wrote that the transfer "... should be left to a worker specializing on that region".

On the question of the identity of this two genera, WILD (1965), working on the Flora Zambesiaca area, wrote, "the only genuine species of *Wedelia* occurring in Africa is considered to be *Wedelia trilobata* ..." and kept *Aspilia* as an African/Madagascan genus. Recently, *Wedelia trilobata* (L.) A. HITCH. was removed from *Wedelia* and made the type of *Complaya* STROTHER (1991). Other western hemisphere genera of *Heliantheae* which are represented either by ornamental plants or by various introductions in Africa are *Cosmos* CAV., *Coreopsis* L., *Glossocardia* CASS., *Chrysanthellum* RICH., *Helianthus* L., etc.

Aspilia and *Wedelia* share a number of features, some of which are extremely variable even within a species, e.g., colour of anther appendages. Traditionally *Wedelia* has been distinguished from *Aspilia* by its pistillate and fertile ray florets, obtusely angled achenes, and cup-shaped (coroniform) awnless or short-awned achenes (BENTHAM 1873). This distinction was, however, abandoned by African synantherologists, e.g. ADAMS (1963), WILD (1965). Currently it is believed that there are "solid differences" between *Aspilia* and *Wedelia*, especially in such characters as number of series in the involucre (only 2 in *Wedelia*, more in *Aspilia* with the outer series being foliaceous), anther cylinder (black in *Aspilia*), achene morphology, etc. (N. HIND, G. POPE and H. BEENTJE at Kew, pers. comm.).

The present author agrees with the view that the genera should be kept separate until the type specimen (if extant) is examined or material from the type locality is collected and further studied. Besides, *Aspilia* in Africa has also been confused with another African genus, *Guizotia*. The sexual condition of the ray florets (pistillate versus neuter), which is variable in many genera of the *Compositae*, should not continually be employed as the main criterion of distinction between *Aspilia* and *Wedelia*. Consequently, the following synonymy is established within *Aspilia*.

Aspilia africana (PERS.) ADAMS subsp. *magnifica* (CHIOV.) WILD, *Kirkia* 6: (1966).

Aspilia congoensis S. MOORE, *Journ. Bot.* 58: 45 (1920), **synon. nov.** Type: Zaire, upper Uili, LACOMBLEY 67 (BM holo.).

Aspilia africana is a widespread species in Africa and it exhibits wide variation in foliar and capitular features. Populations from West Africa (*A. africana* subsp.

africana) have smaller capitula and their paleae are often obtuse or acute; however, some material, e. g., JEFFREY 321 from Gabon, has long acuminate paleae, while MORTON 6642 and 8052 (from Ghana) have shortly caudate-acuminate paleae. So far, *A. africana* subsp. *magnifica* is known from Sudan, Ethiopia, Uganda, Zaire and Angola.

3. *Bidens* L.

Bidens kirkii (OLIV. & HIERN) SHERFF, Bot. Gaz. 59: 309 (1915).

Coreopsis curtisii SHERFF, Bot. Gaz. 96: 146 (1934), **synon. nov.** Type: A cultivated plant grown from seeds obtained from Angola by RICHARD C. CURTIS (F, holotype!).

Previously (MESFIN 1993), *C. curtisii* was kept as an imperfectly known species and it was referred, following the description provided by SHERFF (1936), to *B. oligoflora* (KLATT) WILD. The type of *C. curtisii* was recently examined and it clearly belongs to *B. kirkii*.

Inuleae

1. *Blumea* DC.

Blumea dregeanoides SCH. BIP. ex A. RICH., Tent. Fl. Abyss., vol.1, p. 392 (1848). Type: Ethiopia, near Ferrokoba, SCHIMPER 633 (P syn., K! isosyn.), Wogera, Schimper 1297 (P syn., S! isosyn.); Chire, QUARTIN-DILLON s.n. (P syn.); Choa, PETIT s.n. (P syn., K! isosyn.).

Blumea mollis (D. DON) MERR. (1910), **synon. nov.** Type: Nepal, WALLICH s.n. (BM holo).

Lactuceae

1. *Dianthoseris* SCH. BIP. ex A. RICH.

Dianthoseris schimperi SCH. BIP. ex A. RICH., Tent. Fl. Abyss., vol.1, p. 468 (1848).

Nannoseris inopinata CUFOD., Stuttg. Beitr. Natur. 195: 7 (1968), **synon. nov.** Type: Ethiopia, Amba Ras & Buahit, 3600 m, 9 Nov. 1966, SEBALD 1046 (STU, holotype!).

Nannoseris inopinata was differentiated from *D. schimperi* (sub *N. schimperi*) based on leaf size and features of the margins, involucre size and pubescence, receptacle pubescence, ligule-tube ratio of the ligulate florets and the pappus, which was given

as 10 mm long. As provided, it falls within the range of variation of *D. schimperi*. Examination of the typer revealed no other distinctive features either.

Selected specimens: Ehtiopia: Gonder, Semien, Geech, 15 Oct. 1973, HEDBERG & G. AWEKE 5360 (ETH, K, UPS). Mt. Buahit, SCHIMPER 755 (BM, K). Bale, Sanetti, 2 Nov. 1984, FRIIS et al. 3715 (ETH, K, UPS). Gojam, Choke mts., Mt. Birhan, 28 Aug. 1957, EVANS & HILLIER 335 (BM, K). Note: Leaves in HEDBERG & G. AWEKE 5360 are pinnatilobed. The inner pappus are c. 10 mm long.

Senecioneae

1. *Senecio* L.

Senecio schultzii HOCHST. ex A. RICH., Tent. Fl. Abyss., vol. 1, p. 444 (1848).

This species is endemic to high mountains in Ethiopia. Two forms, recognizable only by the degree of pubescence of the leaves and phyllaries, are known from about the same mountain massif in southern Ethiopia. Until a better evidence that suggests otherwise is obtained, these are recognized here as varieties of the same species and they can be differentiated as follows:

Leaves, stems and phyllaries sparsely to densely pubescent 1. var. *schultzii*

Leaves, stems and phyllaries thinly to densely white tomentose to woolly

..... 2. var. *lanatus*

1. var. *schultzii*

Type: Ethiopia, Buahit, SCHIMPER 1278 (P holotype; BM!, LE!, K! isotypes).

This variety is known from afro-alpine meadows and *Erica arborea* scrub at altitudes between 3270 m and 4050 m from Gondo (GD), Gojam (GJ), Wello (WU), Shewa (SU), Arssi (AR), Bale (BA) and Gamo Gofa (GG) regions in Ethiopia.

Selected specimens: Ethiopia: Gonder, Sermien, 19 Oct. 1973, HEDBERG & G. AWEKE 5488 (ETH, K, UPS). Gojam, Mt. Birhan, 21 Aug. 1957, EVANS & HILLIER 556 (BM, K). Shewa, Ankober, 26 June 1971, ASH 1017 (K). Arsi, Mt. Chilalo, 21 Dec. 1953, MOONEY 5199 (ETH, K); Mt. Cacca, 25 Dec. 1953, MOONEY 5286 (ETH, K). Bale, 31 km on Goba-Dello Mena Road, FRIIS et al. 3401 (ETH, K). Gamo Gofa, Gughe highlands, Mt. Yola, 15 Dec. 1948, SCOTT 138 (K).

2. var. *lanatus* OTIENO & MESFIN, **var. nov.**, a var. *schultzii* foliis et phyllariis albido tomentosis differt. Typus: Ethiopia, Bale, Batu, 4150 m, 17 Dec. 1959, MOONEY 8332 (ETH, holotype; K isotype).

S. schultzi var. A sensu OTIENO & MESFIN, Comp. Newsl. 20/21: 24 (1992).

This variety is similar to var. *schultzi* except for the dense or matted white or silvery hairs on the leaves and often also on the peduncles and phyllaries. It is so far known only from Afro-alpine meadows in the Bale Mountains at altitudes between 3900 m and 4375 m.

Selected specimens: Ethiopia: Bale, Tullu Deemtu, 1 Nov. 1973, HEDBERG 5616 (ETH, K, UPS); 31 km on Goba-Dello Menna road, 24 Oct. 1984, FRIIS et al. 3409 and 3412 (ETH, K, UPS); Sannetti plateau and Mount Batu, 8 Nov. 1982, ANDERBERG 1695 (ETH); 29 Sept. 1982, PUFF, ENSERMU, DAWE & EDWARDS 820929-1/7 (ETH); Tullu Deemtu, 8 June 1986, MESFIN T. 4378 and 4406 (ETH). Note: MOONEY 8322A was collected from Bale, Sanetti plateau, at 4150 m, probably the same location as MOONEY 8332, but it belongs to var. *schultzi*.

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