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**Saklyswysigings /
Changes to Pocket List**

***Commiphora* in
Kaokoland**

**Sustainable use of
mopane & terminalia**

**How tree books have
failed amateurs**

Voortrekkermonument

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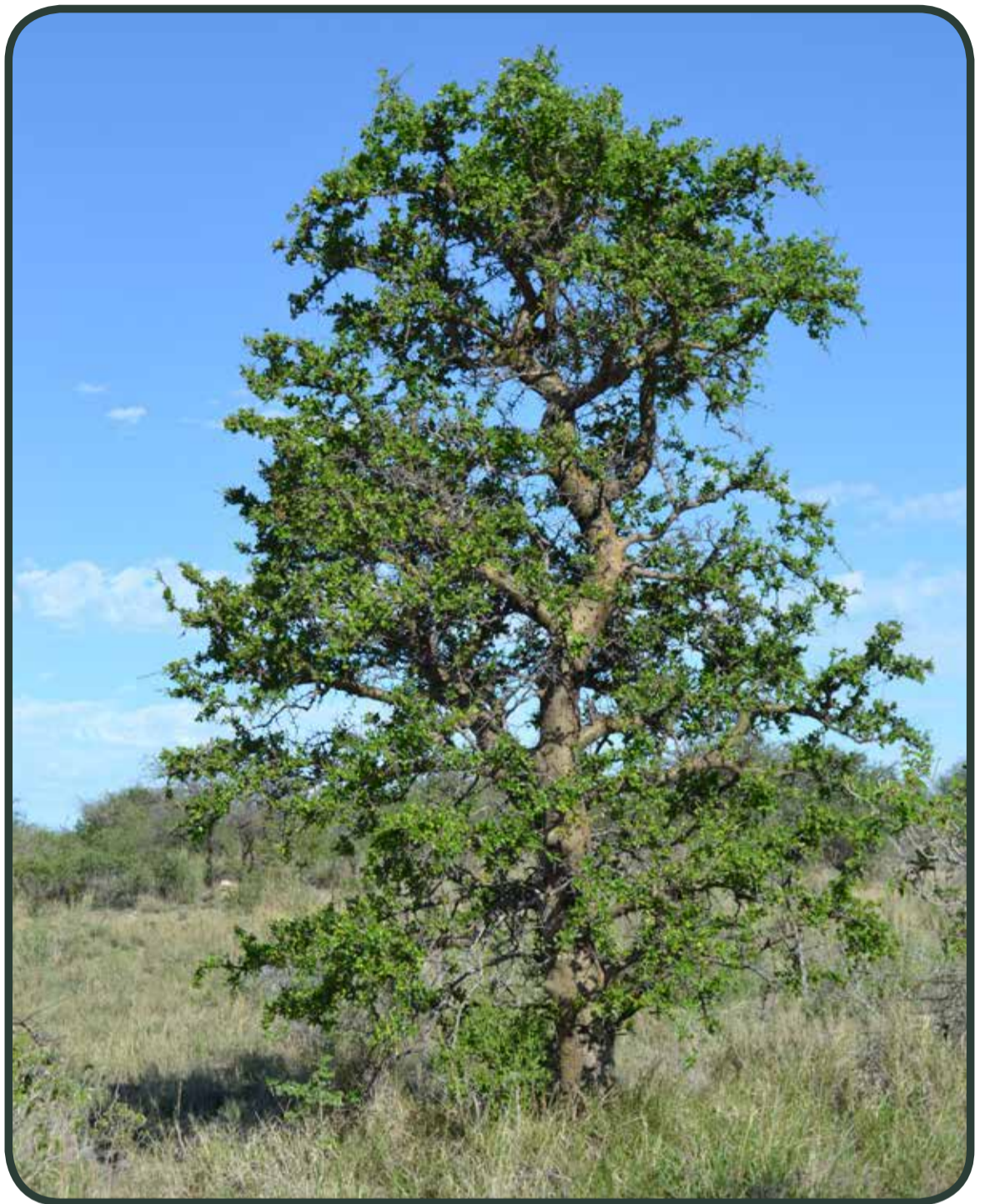
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Commiphora glandulosa
groot-gewone kanniedood
tall common corkwood
omukange – Herero / Otjiherero





OUR FUTURE IS DEPENDENT ON HOW WE REACT NOW

Written while pondering the likelihood of an asteroid hitting Earth

Make no mistake, the world has definitely changed, and maybe forever. In a year of ZOOM and Microsoft Teams burnout, social distancing, work from home, mask and vaccine profiteering and virtual workouts, no one escaped the impact of the pandemic. Even after the COVID-19 pandemic is over, the world will most probably not revert to what it was before. But life goes on and we as humans are the most adaptable species on earth, mainly due to our higher intelligence compared with other species. In the five million years since early hominids emerged from Africa, the Earth's climate has changed dramatically. Over cycles of hundreds and thousands of years forests gave way to deserts and woodlands encroaching on existing savannas are living proof of the ever changing world we live in.

Onder gewone omstandighede is die menslike voetspoor en impak op die omgewing baie groot. Ek is nog altyd van menning dat die aarde sy eie ekwilibrium kan herstel wat versteur word deur die mens se toedoen. Dit sou egter beteken dat die mens op een of ander manier die kans ontnem moet word om wel 'n impak op die aarde te hê, wat dan ook as gevolg van die Covid Pandemie gebeur het. Baie mense en bevolkings het egter onberekenbare ekonomiese skade gely, honderde duisende mense het gesterf en nog baie meer is besmet. Die onmiddellike waarneembare resultate waarvan sommige ooglopend is, word weerspieël in die wêreldwye afname in verminderde verkeersopeenhopings, helderder en skoner lug, skoner waterweë en 'n omgewing waarin die verhouding tussen die mens en die natuur tot 'n groot mate verbeter het.

Alhoewel sommige van hierdie impakte as voordelig vir die omgewing beskou kan word, is negatiewe gevolge ook besig om te voorskyn te kom, insluitend die sneebaleffek van armoede, bedreigde voedselsekureit, versteurde geestesgesondheidstoestande, 'n hoër toleransie vir rampe en die invloed op biodiversiteit.

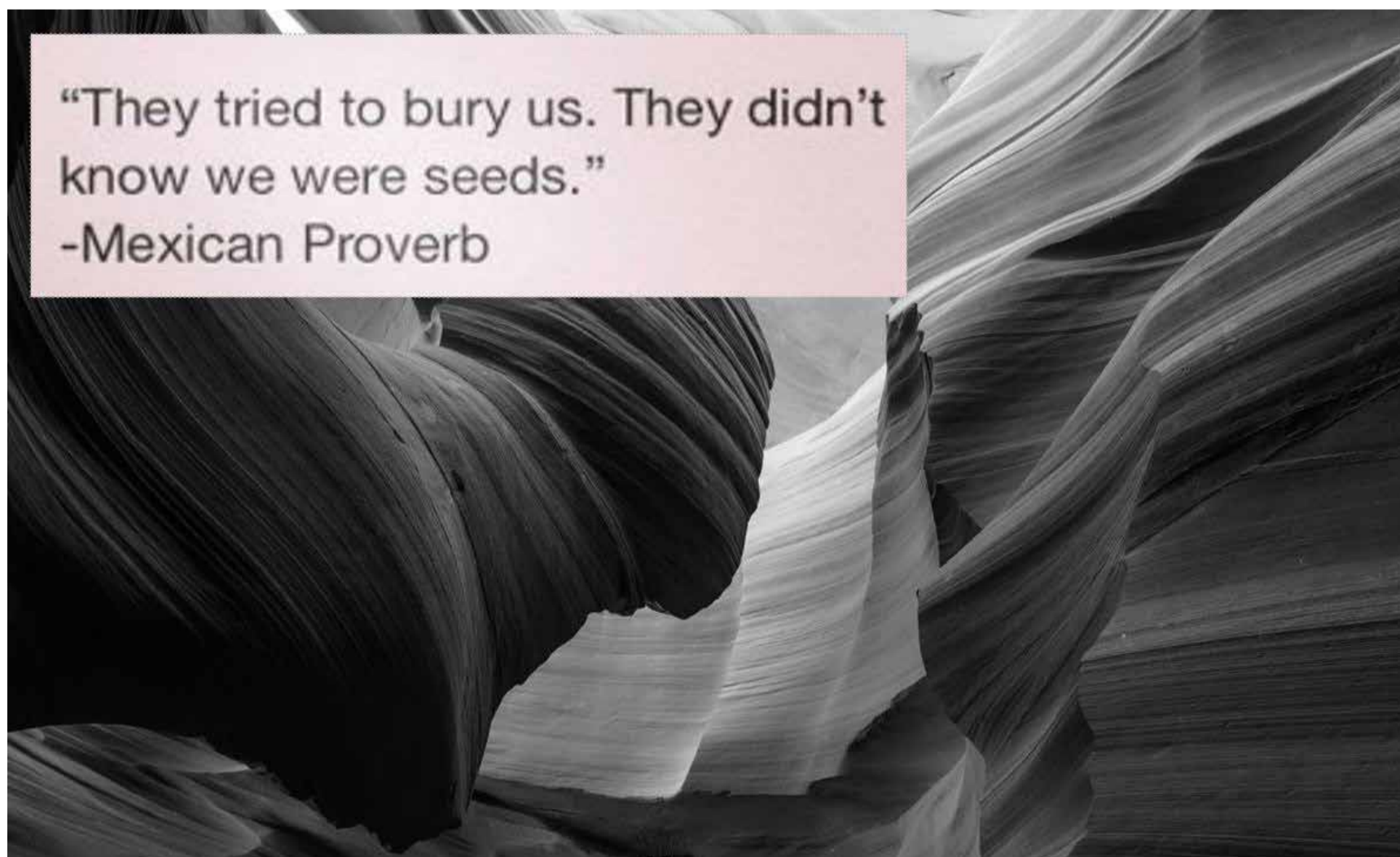
Dit het ook aan die mens die geleentheid gebied om te verstaan hoe die Aarde se stelsel werk en watter kritieke rol ons daarin speel. Sommige reaksies is direk, terwyl ander sal voortspruit uit interaksies tussen mense, ekosisteme en die klimaat. Die impak van die sosio-ekonomiese ontwrigting sal dus waarskynlik ook oor tydskale verskil: alhoewel die direkte impak van die vermindering in menslike mobiliteit die sterkste aan bande gelê was, kan baie van die mees blywende gevolge wat 'n ekonomiese resessie tot gevolg gehad het, en gepaardgaande daarmee die verandering in struktuur van die ekonomie en / of menslike gedrag nog vir dekades voortduur.

I think ecosystems in nature function similarly to the human body: when nature is robust and healthy, it stimulates diverse and healthy populations. If, disturbed and intruded by humans, contact with wildlife populations is eminent and the possibly of spreading of animal-borne diseases are more likely. People who have lost their employment due to the pandemic may return to rural life where other rules for survival apply, inevitably putting more pressure on the natural environment and its resources. The big irony is that Human capacity to interact with our environment has put us back on a trajectory of climate instability. This has led to an unprecedented urge to transform human society and economies and in the process transform our relationship between people and nature to address the major issues of our planet to maintain the earth and ecosystems. So, human health and economic health are intimately linked to the health of our planet — saving nature is about saving ourselves.

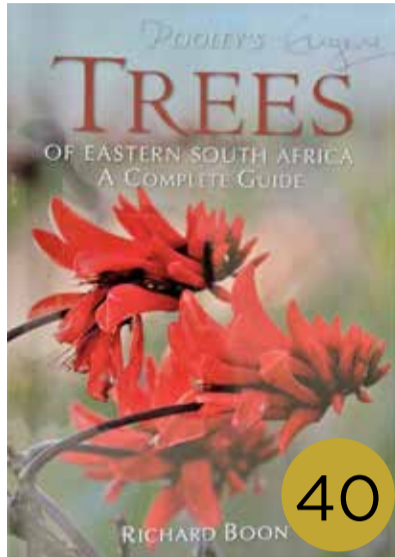
Cecilia Francis

Boomgroete / Best tree wishes,

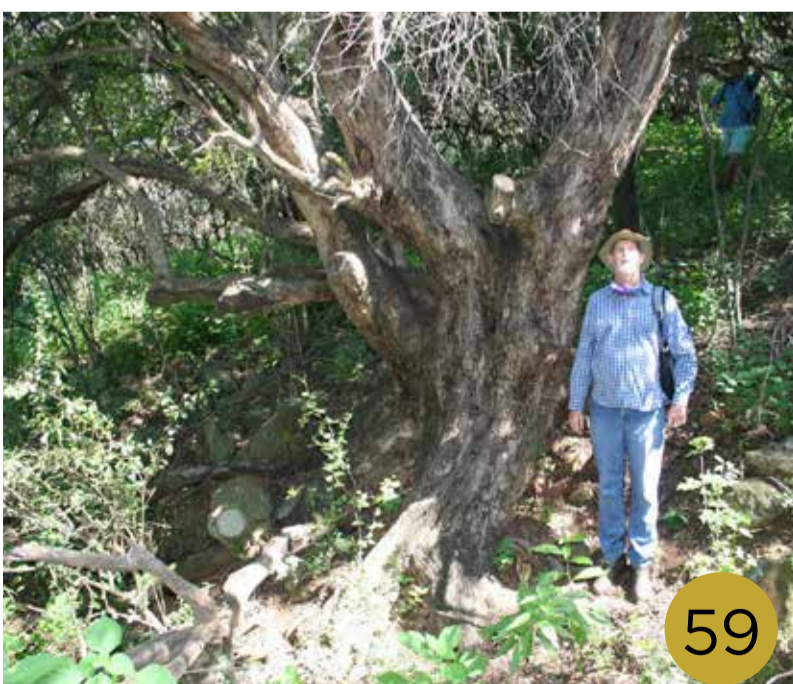
“They tried to bury us. They didn't know we were seeds.”
-Mexican Proverb



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2014 SAKLYS VAN SUIDER-AFRIKAANSE BOME (VYFDE UITGAWE)
2014 POCKET LIST OF SOUTHERN AFRICAN TREES
(FIFTH EDITION)

Wysigings en uitbreidings aan die Saklys sedert publikasie in 2014
Changes and additions to the Pocket List since its publication in 2014

Hartwig von Dürckheim

Verteenwoordiger van die Boomnamekomitee

Representative of the Tree Name Committee

Naamsveranderinge aan wetenskaplike name en oorplasings tussen genera

Changes to scientific names and transfers between genera

Die onderstaande wysigings aan die wetenskaplike name van plantspesies wat boomstatus geniet en in die Dendrologiese Vereniging se 2014 Saklys opgeneem is, het plaasgevind. Hierdie is nie noodwendig 'n volledige lys van alle sulke naamveranderinge wat sedert 2014 plaasgevind het nie.

The following changes to the scientific names of plant species which enjoy tree status and have been recorded in the 2014 Pocket of the Dendrological Society, have occurred. This is not necessarily a comprehensive list of all such changes to the names of trees that may have taken place since 2014.

Cyathea capensis var. *capensis*, FSA2 word / becomes

Alsophila capensis subsp. *capensis* **Cyatheaceae**

FSA2

Afr • bosboomvaring
Eng • forest treefern

Cyathea dregei, FSA1 word / becomes

Alsophila dregei **Cyatheaceae**

FSA1

Afr • grasveldboomvaring
Eng • grassland treefern

Thamnocalamus tessellatus, FSA21.5 word / becomes

Bergbambos tessellata **Poaceae**

FSA21.5

Afr • drakensbergbamboes
Eng • Drakensberg bamboo

Verwysing/Reference: Chris M. A. Stapleton in *PhytoKeys* 25: 87–103, 2013.

Opmerkings: Hierdie plant, inheems aan die hoë Drakensberge, is in 'n genus van sy eie geplaas.

Die genusnaam *Thamnocalamus* is steeds van toepassing op 'n groep bamboesspesies in Asië.

Remarks: This plant is indigenous to the Drakensberg mountains and has been placed into a genus of its own. The genus name *Thamnocalamus* is applicable to a group of Asian bamboos.

Swartzia madagascarienses, FSA217 word / becomes

Bobgunnia madagascariensis **Fabaceae**

FSA217

Afr • slangboom
Eng • snakebean

Verwysing/Reference: Torke, B.M. & Schaal, B.A. Molecular phylogenetics of the species-rich neotropical genus *Swartzia* (Leguminosae, Papilionoideae) and related genera of the swartzioïd clade. *American Journal of Botany*, 95(2), pp. 215–228, 2008.

Brunia albiflora, FSA141.3 word / becomes

Berzelia albiflora **Bruniaceae**

FSA141.3

Afr • vleisneebos
Eng • marsh snowbush

Raspalia trigyna, FSA141.1 word / becomes

Brunia trigyna **Bruniaceae**

FSA141.1

Afr • pondospookbos
Eng • Pondo ghostbush

Lebeckia macrantha, FSA225.6 word / becomes

Calobota cuspidosa **Fabaceae**

FSA225.6

Afr • griekwa-ertjiebos
Eng • Griqua peabush

Boatwright, J.S., Tilney, P.M. & Van Wyk, B.-E. The generic concept of *Lebeckia* (Crotalariaeae, Fabaceae): reinstatement of the genus *Calobota* and the new genus *Wiborgiella*. *South African Journal of Botany* 75: 546–556, 2009.



Lebeckia linearifolia FSA225.5 word / becomes

Calobota linearifolia **Fabaceae**

FSA225.5

Afr • blou-ertjiebos
Eng • blue peabush

Boatwright, J.S., Tilney, P.M. & Van Wyk, B.-E. The generic concept of *Lebeckia* (Crotalariaeae, Fabaceae): reinstatement of the genus *Calobota* and the new genus *Wiborgiella*. *South African Journal of Botany* 75: 546–556, 2009.

Casearia sp. nov., FSA 512.1 word / becomes

Casearia austroafricana **Flacourtiaceae**

FSA512.1

Afr • suidelike bosswaardblaar
Eng • southern forest swordleaf

Verwysing/Reference: Abraham E. van Wyk, Richard G.C. Boon & Elizabeth Retief in *Phytotaxa* 383 (3): 273–282, 2018.

Caesalpinia bracteata, FSA214.1 word / becomes

Gelrebia bracteata **Fabaceae**

FSA214.1

Afr • gariiepronkstert
Eng • Gariiep plumefflower

Verwysing/Reference: Gagnon, E., Bruneau, A., Hughes, C.E., de Queiroz, L.P. & Lewis, G.P. A new generic system for the pantropical *Caesalpinia* group (Leguminosae). *PhytoKeys* 71: 1–160, 2016.

Caesalpinia merxmullerana, FSA214.5 word / becomes

Gelrebia merxmullerana **Fabaceae**

FSA214.5

Afr • namapronkstert
Eng • Nama plumefflower

Verwysing/Reference: Gagnon, E., Bruneau, A., Hughes, C.E., de Queiroz, L.P. & Lewis, G.P. A new generic system for the pantropical *Caesalpinia* group (Leguminosae).

PhytoKeys 71: 1–160, 2016.

Caesalpinia rostrata, FSA214.6 word / becomes

Gelrebia rostrata **Fabaceae**

FSA214.6

Afr • tuitpeulpronkstert
Eng • beak-pod plumefflower

Verwysing/Reference: Gagnon, E., Bruneau, A., Hughes, C.E., de Queiroz, L.P. & Lewis, G.P. A new generic system for the pantropical *Caesalpinia* group (Leguminosae). *PhytoKeys* 71: 1–160, 2016.

Caesalpinia rubra, FSA214.3 word / becomes

Gelrebia rubra **Fabaceae**

FSA214.3

Afr • rooipronkstert
Eng • red plumefflower

Verwysing/Reference: Gagnon, E., Bruneau, A., Hughes, C.E., de Queiroz, L.P. & Lewis, G.P. A new generic system for the pantropical *Caesalpinia* group (Leguminosae). *PhytoKeys* 71: 1–160, 2016.

Caesalpinia pearsonii, FSA214.2 word / becomes

Hererolandia pearsonii **Fabaceae**

FSA214.2

Afr • namibpronkstert
Eng • Namib plumefflower

Verwysing/Reference: Gagnon, E., Bruneau, A., Hughes, C.E., de Queiroz, L.P. & Lewis, G.P. A new generic system for the pantropical *Caesalpinia* group (Leguminosae). *PhytoKeys* 71: 1–160, 2016.

Duvernoia aconitiflora, FSA681.2 word / becomes

Justicia aconitiflora **Acanthaceae**

FSA681.2

Afr • geelpistoolbos
Eng • lemon pistolbush

Duvernoia adhatodoides, FSA681 word / becomes

Justicia adhatodoides **Acanthaceae**

FSA681

Afr • pistoolbos
Eng • pistolbush

Friesodielsia obovata, FSA108 word / becomes

Monanthotaxis obovata **Annonaceae**

FSA108

Afr • rivierdwababessie
Eng • northern dwababerry (Z),
river dwababerry (SA)

Berchemia discolor, FSA449 word / becomes

Phyllogeiton discolor **Rhamnaceae**

FSA449

Afr • bruinivoor
Eng • birdplum (N,Z),
brown ivory (ZA)

Verwysing/Reference: Huang & al. in *Taxon* 70 (3), June 2021: 515–525.

Berchemia sp. nov., FSA450.1 word / becomes

***Phyllogeiton* sp. nov.** **Rhamnaceae**

FSA450.1

Afr • sandivoor
Eng • sand ivory

Verwysing/Reference: Huang & al. in *Taxon* 70 (3), June 2021: 515–525.

Berchemia zeyheri, FSA450 word / becomes

Phyllogeiton zeyheri **Rhamnaceae**

FSA450

Afr • rooi-ivoor
Eng • red ivory

Verwysing/Reference: Huang & al. in *Taxon* 70 (3), June 2021: 515–525.

Senegalia cinerea, FSA165 word / becomes

Senegalia fleckii **Fabaceae**

FSA165

Afr • bladdoring
Eng • blade thorn (SA, Z),
sandveld acacia (N)

Stoeberia utilis, FSA103.5 word / becomes

Stoeberia utilis subsp. **utilis** **Aizoaceae**

FSA103.5

Afr • witvy
Eng • white-fig

Trema orientalis, FSA42 word / becomes

Trema orientale **Celtidaceae**

FSA42

Afr • hophout
Eng • pigeonwood

Opmerking: Regstelling van die naamval van die spesifieke naam.

Remark: Correction of the grammatical case of the specific name.

Vachellia montana, FSA172.3 word / becomes

Vachellia theronii **Fabaceae**

FSA172.3

Afr • slapbergsoetdoring
Eng • slender mountain sweet thorn

Veranderinge aan generiese volksname

Changes to generic common names

Die volgende verandering aan die generiese volksnaam het plaasgevind.

A change to the generic common name has been effected as follows.

Stoeberia **Aizoaceae**

rooivybosse / red-figs word / becomes
boomvygies / tree mesembs

Nuwe boomspesies vir die FSA-gebied

New tree species for the FSA region

Hier volg 'n lys van die plante waaraan boomstatus deur die Dendrologiese Vereniging toegeken is sedert die publikasie van die Saklys van Suider-Afrikaanse Inheemse Bome (Vyfde uitgawe) in 2014.

Hereunder is the list of plants to which tree status has been awarded by the Dendrological Society since the publication of the Pocket List of Southern African Indigenous Trees (Fifth edition) in 2014.

Combretum eugeneanum **Combretaceae**

FSA764

Afr • maputalandrankboswilg
Eng • Maputaland climbing bushwillow

Verwysing/Reference: Richard G.C. Boon, Marie Jordaan & Abraham E. van Wyk

in *Phytotaxa* 434 (1): 001–012, 2020.

Clerodendrum eriophyllum, FSA666.5 word / becomes

Volkameria eriophylla **Lamiaceae**

FSA666.5

Afr • harige tontelhout
Eng • hairy tinderwood

Verwysing/Reference: World Flora Online

Clerodendrum glabrum, FSA667 word / becomes

Volkameria glabra **Lamiaceae**

FSA667

Afr • tontelhout
Eng • smooth tinderwood (N), tinderwood (SA)

Verwysing/Reference: SANBI SA Plant Checklist

Widdringtonia cedarbergensis, FSA19 word / becomes

Widdringtonia wallichii **Cupressaceae**

FSA19

Afr • clanwilliamseder
Eng • Clanwilliam cedar

Opmerking: 'n Geval waar 'n geldige ouer naam "herontdek" is /

Remark: A case where a valid older name has been "rediscovered".





Erythrococca kaokoensis

Euphorbiaceae

FSA759

Afr • kaoko-rooibessie
Eng • Kaoko redberry

Verwysing / Reference: Wessel Swanepoel in *Phytotaxa* 392 (1): 054–060, 2019.

Gymnosporia swazica

Celastraceae

FSA749

Afr • swazipendoring
Eng • Swazi spikethorn

Verwysing/Reference: Marie Jordaan & Abraham E. van Wyk in *Phytotaxa* 192 (4): 296–300, 2015.

Hymenodictyon kaokoensis

Rubiaceae

FSA765

Afr • kaokobrandbos
Eng • Kaoko firebush

Verwysing / Reference: Wessel Swanepoel & Ernst J. van Jaarsveld in *Phytotaxa* 451 (4): 257–266, 2020.

Maerua sebrabergensis

Capparaceae

FSA751

Afr • sebrabergwitbos
Eng • Zebra Mountain spiderbush

Verwysing / Reference: Wessel Swanepoel in *Phytotaxa* 207 (1): 123–128, 2015.

Memecylon australissimum

Melastomataceae

FSA761

Afr • mbashe-roosappel
Eng • Mbashe rose-apple

Verwysing / Reference: Robert Douglas Stone, Imercia Gracious Mona, David Styles, John Burrows & Syd Ramdhani in *Phytotaxa* 418 (3): 237–257, 2019.

Opmerkings: Beperk tot 'n klein gebied langs Transkeise kus.

Remark: Restricted to a limited area on the coast of the Transkei.

Memecylon kosiense

Melastomataceae

FSA762

Afr • kosibaairoosappel
Eng • Kosi Bay rose-apple

Verwysing / Reference: Robert Douglas Stone, Imercia Gracious Mona, David Styles, John Burrows & Syd Ramdhani in *Phytotaxa* 418 (3): 237–257, 2019.

Opmerking: Beperk tot Maputaland. / Remark: Restricted to Maputaland.

Memecylon soutpansbergense

Melastomataceae

FSA763

Afr • soutpansbergroosappel
Eng • Soutpansberg rose-apple

Verwysing / Reference: Robert Douglas Stone, Imercia Gracious Mona, David Styles, John Burrows & Syd Ramdhani in *Phytotaxa* 418 (3): 237–257, 2019.

Opmerking: Beperk tot die Soutpansberge. / Remark: Restricted to the Soutpansberg.

Monanthotaxis maputensis

Annonaceae

FSA758

Afr • maputalanddwababessie
Eng • Maputaland dwababerry

Verwysing / Reference: Paul H. Hoekstra, Jan J. Wieringa, Lars W. Chatrou in *PhytoKeys* 69: 71–103, 2016.

Ochna maguirei

Ochnaceae

FSA766

Afr • kurkbasrooihout
Eng • corky-barked plane

Verwysing / Reference: K. Balkwill in *South African Journal of Botany*, Volume 133, September 2020, Pages 298–306.

Prionium serratum

Thurniaceae

FSA768

Afr • palmiet
Eng • palmiet

Gesag: Tot boomstatus verhef deur die Dendrologiese Vereniging.

Authority: Elevated to tree status by the Dendrological Society.

Psoralea diturnerae

Fabaceae

FSA750

Afr • outeniekwafonteinbos
Eng • Outeniqua fountainbush

Verwysing / Reference: Abubakar Bello et al. in *PhytoKeys* 44:97–107, 2015.

Psychotria suber

Rubiaceae

FSA769

Afr • kurkvoëlbesie
Eng • corky birdberry

Verwysing / Reference: van Jaarsveld, E.J., Venter, S., & Visagie, M. 2021.

Psychotria suber (Rubiaceae) (Plate 23745). *Flowering Plants of Africa* 67: 142–149.

Putterlickia neglecta

Celastraceae

FSA754

Afr • noordelike valspendoring
Eng • northern false-spikethorn

Verwysing / Reference: Marie Jordaan, Richard G.C. Boon & Abraham E. van Wyk in *Phytotaxa* 208 (3): 217–224, 2015.

Senegalia loetteri

Fabaceae

FSA755

Afr • serpentyndoring
Eng • serpentine thorn

Verwysing / Reference: Norbert Hahn in *Phytotaxa* 119 (1): 51–54, 2013.

Opmerking: Voorheen gesien as *S. chariessa* wat in Zimbabwe voorkom.

Remark: Previously thought to have been *S. chariessa* which occurs in Zimbabwe.

Senegalia montis-salinarum**Fabaceae**

FSA753

Afr • soutpansbergdoring
Eng • Soutpansberg thornVerwysing / Reference: Norbert Hahn in *Phytotaxa* 244 (2): 174–180, 2016.**Stoeberia giftbergensis****Aizoaceae**

FSA 756

Afr • gifbergboomvygie
Eng • Gifberg tree mesembVerwysing / Reference: Ernst J. van Jaarsveld *Stoeberia giftbergensis*(L.Bolus) van Jaarsv. in *Aloe* 52(1): 9, 2016.**Stoeberia utilis** subsp. *lerouxiae***Aizoaceae**

FSA 757

Afr • namakwaboombvygie
Eng • Namaqua tree mesembVerwysing / Reference: Ernst J. van Jaarsveld *Stoeberia utilis* (L.Bolus)Van Jaarsv. subsp. *lerouxiae* Van Jaarsv. in *Aloe* 43(1): 20, 2006.**Syzygium kuneneense****Myrtaceae**

FSA767

Afr • kunenewaterbessie**Eng** • Kunene waterberry

Verwysing / Reference: Wessel Swanepoel, Vera de Cauwer & Abraham E. van Wyk in

Phytotaxa 491 (4): 281–290, 2021.**Vachellia sieberiana** var. *sieberiana***Fabaceae**

FSA186.9

Afr • langpeuldoring
Eng • longpod thornVerwysing / Reference: Marthinus Steyn in *Dendron* No. 48, November 2016 p18–22.**Inskrywings wat uit die boomlys vir die FSA-gebied verwyder word****Entries removed from the FSA list of trees****Adansonia kilima**

FSA744

Afr • swartkremetart
Eng • black baobabOpmerking: Word tans beskou as 'n sinoniem van *Adansonia digitata*Remark: Currently viewed as a synonym of *Adansonia digitata***Erkennings/Acknowledgements**

Hierdie artikel is saamgestel met behulp van inligting en insigte wat Prof. Braam van Wyk vriendelikerwyse beskikbaar gestel het. Die Dendrologiese Vereniging gee graag dankbare erkenning aan Prof. Braam van Wyk vir sy leidende rol met die werksaamhede van die boomnamekomitee, vir die onbaatsugtige deel van sy uitgebreide kennis oor plantkunde, vir sy deskundige advies en sy goedgesindheid teenoor die Vereniging. Ook 'n groot woord van dank aan Dr. Erika van den Berg vir haar wyse bydraes tot die boomnamekomitee.

This update to the 2014 edition of the Pocket List of South African Indigenous Trees is based on information and understanding kindly provided by Prof. Braam van Wyk. The Dendrological Society wishes to gratefully acknowledge Prof. van Wyk's leading role in the activities of the tree name committee, for freely sharing his extensive knowledge of botany, for his expert advice and his goodwill towards our Society. We further wish to extend our appreciation to Dr. Erika van den Berg for her sagacious contributions to the activities of the tree name committee.



THE LONGPOD THORN OR FALSE PAPERBARK THORN

Marthinus Steyn[©]

e-mail soutsteyn@absamail.co.za

This quite attractive tree with its impressive giant pods, is botanically known as *Acacia sieberiana* var. *sieberiana*, or according to the latest accepted classification, as *Vachellia sieberiana* var. *sieberiana*. In this contribution historical perspectives make it difficult to exclude the designation *Acacia*. The traditional treatment of our tree as a member of a broadly defined *Acacia* is therefore retained for the purpose of this article. The aim of this contribution is to confirm the wider presence of the longpod thorn in southern Africa (Steyn 2007), and the need for it to be taken it up in the list of trees native to the *Flora of Southern Africa* (FSA) region.

FROM A HISTORICAL PERSPECTIVE

Discussions concerning the taxonomic status of *Acacia sieberiana* have prevailed sporadically over the years. One might start at the time when there was some confusion about the relationship between *Acacia sieberiana* and *Acacia rehmanniana*. *Acacia rehmanniana* was described as early as 1898 (Keay & Brenan 1950). Roberty in 1948 had the notion that there could be a taxon called *Acacia sieberiana* var. *rehmanniana* which was illegal, as he regarded it as a synonym for *Acacia sieberiana* var. *villosa*, a West African species which was described earlier (1927) and therefore enjoyed priority as the correct name (Keay and Brenan 1950).

Burt Davy described *Acacia sieberiana* var. *woodii* as a taxon in 1922 (Keay & Brenan 1950). Subsequently, four varieties of *Acacia sieberiana* have been recognised, namely var. *villosa*, var. *woodii*, var. *sieberiana* and var. *vermoesenii*. *A. sieberiana* var. *villosa* is considered West African, the other three varieties occur in East and West Africa and further south. *A. sieberiana* var. *sieberiana* is mentioned by Coe & Beentje (1991) with regard to the *Acacia* species of Kenya. Both var. *sieberiana* and var. *woodii* occur in Kenya although distribution patterns for the two varieties are not given.

Brenan (1959) suggested the following identification key to the varieties of *Acacia sieberiana* occurring in East Africa and further south:

Young branchlets glabrous or nearly so; branches of crown usually ascending.....var. *sieberiana*

Young branchlets ± hairy, usually densely so; branches of crown usually widely-spreading:

Indumentum of branchlets usually neither markedly golden or villous.....var. *vermoesenii* Indumentum of branchlets normally villous and markedly golden, especially when youngvar. *woodii*

Acacia sieberiana var. *vermoesenii* was originally collected in the Congo (DRC) by F. Vermoesen. Its very similar growth form with that of var. *woodii* and very slight difference in indumentum has resulted in the re-evaluation of its taxonomic status. Brenan (1959) even made the suggestion that var. *vermoesenii* and var. *woodii* could be the same taxon in that they differ to such an extent from var. *sieberiana* that they might be considered a separate species, namely *Acacia nefasia*. Subsequently var. *vermoesenii* was synonymised with var. *woodii* by Ross (1977), a decision that has been widely accepted. It can therefore be removed from the southern African equation.

This quite attractive tree with its impressive giant pods, is botanically known as *Acacia sieberiana* var. *sieberiana*, or according to the latest accepted classification, as *Vachellia sieberiana* var. *sieberiana*.

















FROM A SOUTH AFRICAN PERSPECTIVE

The paperbark thorn, *Acacia sieberiana* var. *woodii*, is well-known to South African tree enthusiasts. The longpod thorn or false paperbark thorn, *Acacia sieberiana* var. *sieberiana*, may prove to be noteworthy as it occurs in the countries adjacent to South Africa. Hutchinson & Dalziel (1958) refer to it as follows: 'A tree up to 70 ft. high, usually with a rather short, thick bole and wide, spreading, more or less rounded crown; bark pale greenish-yellow with small grey-brown exfoliating scales; spines long, straight, white; flowers cream or white; fruit brown.'

The two varieties of *A. sieberiana*, namely. var. *woodii* and var. *sieberiana*, differ so significantly that even an amateur could distinguish the one from the other. However, historically the two have often been confused. Some see them as 'forms' of the same variety, others make no distinction between the two, while some negate the occurrence of *Acacia sieberiana* var. *sieberiana* in southern Africa.

The table below will help to compare the two varieties. Accompanying photographs support the data.

DIFFERENCES	VAR. WOODII	VAR. SIEBERIANA
Crown	Widely spreading 	Ascending, rounded 
Branchlets	Villous and markedly golden. 	Glabrous or nearly so. 
Bark of stem	Pale grey to buff, papery and flaking, becoming less flaky with age. 	Brownish, uneven, fragmented, not papery. 
Branches	Bark structure persists. Papery. 	Bark comes off in chunks to reveal a very striking yellowish layer. 
Leaves	Pinnae average 23, leaflets 30. Leaflets about 5.0 mm long, 1.0 mm wide mm. Rachis and rachilla hairy. 	Pinnae average 14, leaflets 30. Leaflets about 5.5 mm long, 1.2 mm wide. Rachis with very few hairs. 
Pods	Hairy when young, becoming less hairy towards maturity. Up to 150 mm long. 	Glabrous, very large, up to 250 mm long. 
Inflorescences	Cream coloured, fluffy balls. Involucel present. 	Cream coloured, fluffy balls. Involucel absent (apical). 





South Africa

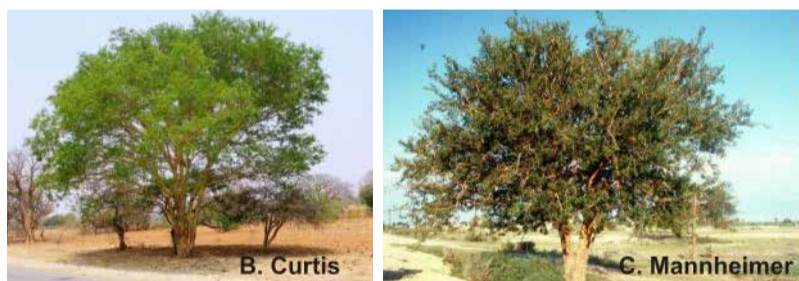
Acacia sieberiana var. *sieberiana* has not yet been recorded in South Africa. The only known and documented variety is *A. sieberiana* var. *woodii* (Smit 1999).

Zimbabwe

Timberlake *et al.* (1999) stated that both 'forms' of *Acacia sieberiana* have been recorded in Zimbabwe and that the 'round-topped form with the more yellow bark on the branches' occurs at lower altitudes along large rivers and occasionally in the central watershed. A note is added that 'All southern African populations of *A. sieberiana* have been classified as var. *woodii* (Burt Davy) Keay & Brenan'. *Acacia sieberiana* var. *sieberiana* was photographed by the author in 2007 as per accompanying photographs from a number of specimens that occur on the Beit Bridge – Masvingo road, beyond Ngundu Halt (195 km from the Beit Bridge side). The Flora of Zimbabwe website positively recorded two recent identifications in 2013 (Malilangwe Wildlife Reserve) and in 2014 (Dingangombe near Hwange). The presence of *Vachellia sieberiana* var. *sieberiana* has now been firmly established in Zimbabwe.

Namibië

Acacia sieberiana var. *sieberiana* has not been recognised in Namibië in the past. Palmer & Pitman (1972) referred to the taxon *Acacia sieberiana* (without reference to varieties) as 'with a rounded but usually with a flat spreaded crown.' No mention is made of var. *sieberiana* in Carr (1976), Craven (1999), Germishuizen & Meyer (2003), Curtis & Mannheimer (2005) and Van Wyk *et al.* (2011). Van Wyk & Van Wyk (1997) show *Acacia sieberiana* as a taxon, its distribution covering Namibië, the description clearly favouring var. *woodii*, further stating: 'All material from southern Africa belongs to var. *woodii*.'



A number of herbarium specimens of *Acacia sieberiana* collected in Namibië were assigned to var. *woodii*, despite the fact that they clearly show features of var. *sieberiana*, namely inflorescences without involucels, very long pods, yellowish branches and relatively few pinnae. The logical conclusion is that all *Acacia sieberiana* trees were uncritically assumed to be *Acacia sieberiana* var. *woodii*. Accompanying photos of *Acacia sieberiana* kindly provided by C. Mannheimer and B. Curtis, show the typical ascending, rounded crown of *Acacia sieberiana* var. *sieberiana*. They state that the *Acacia sieberiana* that they came across have the yellow bark and the generally rounded rather than flat crown. The present author has also come across similar trees in east-Caprivi. The important point is that *Acacia sieberiana* var. *sieberiana* does occur in Namibië.

Mozambique

In a list of *Acacia* species for Mozambique compiled by the Wageningen Agricultural University in the Netherlands (De Koning 1993), *Acacia sieberiana* is listed as a taxon without reference to any variety.

Coates Palgrave (2002), makes mention of a specimen of *Acacia sieberiana* var. *sieberiana* that was recorded near Beira in Mozambique. Its occurrence in the Gorongosa National Park is mentioned in the Flora of Mozambique website.

Botswana

Setshego & Venter (2003), in their checklist of Botswana trees, list only *Acacia sieberiana* var. *woodii*. Roodt (1998) deals with *Acacia sieberiana* as a species without referring to varieties. She, however states: 'the large pod (more than 20 cm long) distinguishes it from other acacias'. Timberlake (1980) writes about *Acacia sieberiana* var. *woodii*: 'A distinctive tree with its yellowish underbark and massive pods'. Both Roodt and Timberlake mention properties that are diagnostic of *Acacia sieberiana* var. *sieberiana*. A number of herbarium specimens by kind courtesy of the National Herbarium (PRE), SANBI, Pretoria, labelled *Acacia sieberiana* var. *woodii*, all indicate var. *sieberiana* features, namely inflorescences without involucels and long pods approaching 200 mm. All this point to the presence of *Acacia sieberiana* var. *sieberiana* in Botswana.

Based on the contribution by Marthinus Steyn, *Vachellia sieberiana* var. *sieberiana* has now been taken up in the Dendrological Society of South Africa's list of trees native to the Flora of Southern Africa Region, with the number FSA186.9.

Vachellia sieberiana* (DC.) Kyal. & Boatwr. var. *sieberiana

[= *Acacia sieberiana* DC. var. *sieberiana*]

FSA186.9

English:	longpod thorn , false paperbark thorn
Afrikaans:	langpeuldoring
*Herero:	omuhengehenge, omunyere, omuryangava, orupunguya
*Lozi:	mukate, mutubatuba
*Manyo:	muhengeva
*Mbukushu:	mughombe
*Sena:	n'ghunga
*Tswana:	more-o-mosetlha
*Wambo:	ehaluveya, muhengeva, omeyele, omuye

*Names in these languages were usually attributed to *Vachellia sieberiana* var. *woodii* (e.g. by Van Wyk *et al.* 2011), but they most probably apply to *V. sieberiana* var. *sieberiana*, as the latter is the exclusive or prevailing variety in those parts of Namibië and Botswana where these languages are spoken. The application of common names hitherto attributed to *V. sieberiana* var. *woodii* in other regional languages spoken in Zimbabwe and Mozambique, should be treated with caution.

CONCLUSIONS

For many years the *sieberiana* variety of *Acacia sieberiana* has escaped recognition in southern Africa. *Acacia sieberiana* is often referred to as a taxon with the implication that it is var. *woodii*. Others simply refer to 'forms' of *Acacia sieberiana*, or negate the occurrence of var. *sieberiana* in southern Africa. The breakthrough came in 2002 with its recognition in Mozambique by Meg Coates Palgrave. In 2007 its presence in Zimbabwe was recorded and photographed by the author (Steyn 2007) and its occurrence by deduction and personal observation in Botswana and in Namibië (mainly the present contribution). The obvious confusion in Botswana and Namibië concerning the different varieties of *Acacia sieberiana* makes one to suspect that all trees in these two countries may well be var. *sieberiana* and that var. *woodii* does not occur there!

Perhaps specimens of *Acacia sieberiana* var. *sieberiana* lurks somewhere near the Limpopo River in the northeastern corner of South Africa, waiting to be discovered.

When called the 'false paperbark thorn' one almost feels that this degrading designation is not appropriate! *Acacia sieberiana* var. *sieberiana* is as distinct as any other *Acacia* species. Apparently, in the world of the trees there appears to be discrimination—not by trees amongst themselves, but by the humans moving amongst them! Next time when travelling across South Africa's borders watch out for the real—not the false—longpod thorn!

Watch out for the paperbark thorn—it is also very real! A prick on the hand by a spine is often inflammatory after extraction because short hairs are rubbed off and stay behind (personal experience).

Watch out for the paperbark thorn — it is also very real! A prick on the hand by a spine is often inflammatory after extraction because short hairs are rubbed off and stay behind (personal experience).

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This article was originally published in *Dendron* No. 48, November 2016 p18–22. The Dendrological Society has since the publication of the Pocket List of Southern African Indigenous Trees (Fifth edition) in 2014, awarded tree status to ***Vachellia sieberiana*** var. ***sieberiana*** (Ed)

Vachellia sieberiana var. ***sieberiana*** **Fabaceae**

FSA186.9

Afr • langpeuldoring
Eng • longpod thorn

Verwysing / Reference: Marthinus Steyn in *Dendron* No. 48, November 2016 p18–22.

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deur Francois du Randt

Kaokoland is 'n unieke landstreek in die noordoostelike hoek van Namibië (of die destydse Suidwes-Afrika). Dit is geleë noord van die Hoanibrivier en suid van die Kunenerivier. Die gebied word begrens deur die Atlantiese Oseaan aan die westekant (die Skedelkus) en die sentrale hoogland plato van Ovamboland en Etosha Nasionale Park aan die oostekant.

Kaokoland vorm 'n ekologiese eenheid met Damaraland, wat suid van Kaokoland geleë is. Die totale gebied lê noord van Swakopmund en sluit die volgende belangrike sentra in, nl. Uis, Khorixas (die administratiewe sentrum van Damaraland), Sesfontein, Ruacana en Opuwo (die administratiewe sentrum van Kaokoland).

Die Kaokoland - Damaraland ekologiese eenheid bestaan uit diverse landskappe en bioklimatiese streke wat parallel tot mekaar geransik is van wes na oos, as volg:

- 1) Die Namib woestyn kusgebied (bekend as die Skedelkus) met sy koue Benguella seestroom, sowel as die Namib woestyn self.
- 2) Die Pro-Namib met sy gruisvlaktes, rotseilande en koppies — ook bekend as die sogenaamde *inselberge*.
- 3) Die Kaokoland eskarpement en die hoë bergreekse, soos die Otjihipaberge, die Baynesberge, en die eskarpement rondom die Gomatum Gorge.
- 4) Die Oostelike Hoogland (wat 1000 - 1300 m. bokant seevlak geleë is) bestaande uit die sandveld plato en die sentrale dreineringskom van die Ovahimba hoogland, die Hoarusib opvangsgebied rondom Opuwo en Kaoko Otavi, en die Hoanib opvangsgebied noordoos van Sesfontein.
- 5) Die riviervalleie: slegs die Kunenerivier is standhoudend en loop van oos na wes in die Atlantiese Oseaan.

Die Namib word kortliks verdeel in die rooi en wit sandduine van die ware Namibwoestyn, en die aangrensende gruisvlaktes van die Pro-Namib. Net noord van Swakopmund strek die sandduine 20 km vanaf die kus na die binneland, maar verder noordwaarts strek dit tot 60 km na die binneland. Die gemiddelde reënval is tussen 0 - 20 mm per annum en die vegetasie is hoofsaaklik endemies tot hierdie gebied.

Die Pro-Namib se plat woestynvlaktes ondersteun heelwat meer en baie interessante plant- spesies. Die jaarlikse reënval is 30 - 100 mm en behalwe die rotseilande en koppies, kry ons selfs ook hoër losstaande berge, soos die Brandberg en Spitzkoppe van Damaraland. Behalwe die *Commiphora* bome is die Pro-Namib ook die tuiste van die wêreld se enigste lewende fossiel, nl. *Welwitschia mirabilis*.

Die bergreekse en eskarpement van Kaokoland is baie indrukwekkend en ontoeganklik, selfs vir vierwielgedrewe voertuie. Die reënval wissel van 100 - 150 mm per jaar. Die eskarpement lê ongeveer 60 - 90 km vanaf die kusstrook en strek oor'n afstand van 130 km tussen die Kunene- en Hoanibriviere. Die



Welwitschia mirabilis

eskarpe is uitsonderlik rof, steil en baie indrukwekkend. Die Otjihipa eskarpe is 1 500 m in hoogte vanaf die vloer van die Marienfluss. Suid van die Hoanibrivier is die eskarpe minder prominent. Daar is verskeie mikrohabitate in die eskarpement en aangrensende berge met diverse plantgemeenskappe. Daar is meer plantspesies in die noorde as in die suide, hoofsaaklik weens die tropiese klimaat. Bo en behalwe die pragtige *Commiphora* spesies is hier ook heelwat endemiese plante, wat slegs hier voorkom, soos *Aloe mendesii*, *Aloe dewinteri*, *Rhigozum virgatum*, *Kirkia dewinteri*, *Euphorbia kaokoensis*, *Euphorbia eduardoi*, *Senegalia robynsiana* en *Senegalia mellifera* subsp. *mellifera* en *Senegalia montis-usti*.

Die sentrale dreineringskom het 'n reënval van 150 - 250 mm per jaar en die Oostelike Hoogland plato se reënval is tot 350 mm per annum.

Daar is verskeie plant indikatore wat gebruik word om verskeie vegetasietipes mee te beskryf, soos byvoorbeeld:

- *Adenolobus garipensis* - groei altyd in die gruisvlaktes van die Pro-Namib.
- *Kirkia acuminata* - groei altyd op rotseilande.
- *Terminalia sericea* - groei altyd in sanderige grond.
- *Colophospermum mopane* (mopanie) - groei altyd in die oostelike, hoër reënvalstreke van Kaokoland.
- *Commiphora angolensis* - groei slegs oos van die 200 mm reënvallyn.
- *Commiphora anacardiifolia* - groei slegs op die grens van die Pro-Namib, en veral op rotseilande.
- Vier *Commiphora* spesies groei slegs wes van die 150 mm reënvallyn, naamlik: *C. wildii*, *C. oblanceolata*, *C. giessii* en *C. virgata*.



Die *Commiphora* bome behoort tot die Burseraceae, of Mirre-plantfamilie. In Suidelike Afrika is daar slegs een genus in hierdie interessante familie, naamlik *Commiphora*. Dit is die Kanniedood-bome (Engels: Corkwood Trees)

Kortliks word die *Commiphora* genus beskryf as bome of struik, wat dikwels doringagtig is, en wat gekenmerk word deur 'n tipiese bas, wat papieragtig of in repe afskilfer, of wat baie glad is. Die meeste spesies produseer 'n aromatisiese harpuis of gom. *Commiphora* kom vanaf die Griekse woorde *commi*, wat beteken 'gom', en *phoros*, wat beteken 'om te dra'. Daar is 30 spesies van *Commiphora* in Namibië, waarvan vyf onlangs beskrywe is. Ek konsentreer net op die *Commiphora* spesies in Kaokoland en Damaraland. Die Duitse naam "balsamstrauch" of "balsambaum" verwys na die harpuis-eksudaat of gom.

Die volgende *Commiphora* spesies kom voor in Kaokoland:

(Die FSA nommer is vooraf genoem)

270	<i>Commiphora africana</i> var. <i>africana</i>	gifkanniedood / hairy corkwood
270	<i>Commiphora africana</i> var. <i>rubriflora</i>	
271	<i>Commiphora anacardiifolia</i>	grootblaarkanniedood*
272	<i>Commiphora angolensis</i>	sandkanniedood
274	<i>Commiphora crenato-serrata</i>	damarakanniedood*
274.2	<i>Commiphora dinteri</i>	namibkanniedood
274.1	<i>Commiphora discolor</i>	reepbaskanniedood*
275.5	<i>Commiphora giessii</i>	bruinstamkanniedood
285.1	<i>Commiphora glandulosa</i>	groot-gewone kanniedood
276	<i>Commiphora glaucescens</i>	bloublaarkanniedood
277.1	<i>Commiphora kaokoensis</i>	kaokokanniedood*
277.5	<i>Commiphora kraeuseliana</i>	fynblaarkanniedood*
277.7	<i>Commiphora kuneneana</i>	kunenekanniedood*
280	<i>Commiphora mollis</i>	fluweelkanniedood
282	<i>Commiphora multijuga</i>	persstamkanniedood*
284.1	<i>Commiphora oblanceolata</i>	swakopmundkanniedood
284.5	<i>Commiphora otjhipana</i>	otjhipakanniedood
285	<i>Commiphora pyracanthoides</i>	gewone kanniedood
286	<i>Commiphora saxicola</i>	rotskanniedood
288	<i>Commiphora steynii</i>	ringbaskanniedood*
289	<i>Commiphora tenuipetiolata</i>	witstamkanniedood
290	<i>Commiphora virgata</i>	slapkanniedood
290.1	<i>Commiphora wildii</i>	eikeblaarkanniedood





Sleutel:

- Endemies tot Kaokoland en Damaraland, m.a.w. hierdie bome kom nêrens anders in die wêreld voor as net in Kaokoland of Damaraland nie.

Euphorbia guerichiana lyk baie soos 'n *Commiphora* omdat dit ook afskilferende bas het, maar dit verskil deurdat dit melkerige, nie-taaierige lateks bevat. Natuurlik verskil die blomme. Die trifoliolaat *Commiphora*'s moet ook onderskei word van *Searsia*, maar weereens verskil die blomme en vrugte.

BLAARSLEUTEL VIR IDENTIFIKASIE VAN *Commiphora* spesies van Namibië (volgens "Trees & Shrubs of Namibië" deur Le Roux et al):

1 a. Blare pinnaat, met baie dun, lynvormige blaartjies	C. KRAEUSELIANA
b. Blare pinnaat, basis van blaartjies aaneenlopend met gevlerkte rachis en petiole, lyk soos 'n diep gelobde enkelvoudige eik blaar	C. WILDII
c. Blare nie soos bogenoemde nie	2
2 a. Enkelvoudige blare, soms trifoliolaat met twee baie kleiner laterale blaartjies	3
b. Blare trifoliolaat, of pinnaat	10
3 a. Blaarrand is gaaf (entire leaf margin)	4
b. Blaarrand gekartelde (not entire)	5
4 a. Groot blare, tot 130 x 80 mm, of groter, meestal sittend (sessile), dik-tekstuur, donkergroen, grof harig, met prominente ingedrukte bearing; bas geel-bruin, skilfer af in groot stukke	C. ANACARDIIFOLIA
b. Medium-grootte blare, tot 100 x 60 mm (kleiner in res van Namibië) nie dik-tekstuur nie, blougroen, meestal glad of effens harig, wasagtig, duidelike bearing, maar nie ingedruk nie, blaarrand golwend (undulate); bas koper-kleurig tot rooi-bruin, skilfer af in klein stukke	C. GLAUCESENS
5 a. Plant met geen dorings nie; bas skilfer nie af nie	6
b. Plant met stomp tot skerp dorings; bas kan afskilfer, nie noodwendig nie	7
6 a. Klein blare, tot 15 x 14 mm, feitlik rond; plant beperk tot Suid-Namibië	C. NAMAENSIS
b. Groter blare, tot 27 x 25 mm, verskillende blaarvorms, kom voor vanaf Swakopmund tot Kunenerivier	C. DINTERI
c. Nog groter blare, tot 58 x 32 mm, ellipties tot obovaat, slegs in Kaokoveld	C. KAOKOENSIS
7 a. Bas geel-wit, skilfer af in lang reepe; blare donkergroen en blink aan bo-kant, baie ligter onderkant, slegs in klein area van noordelike Kaokoveld	C. DISCOLOR
b. Nie soos bogenoem nie	8
8 a. Bas grys-groen tot prominent groen, skilfer af in geel, papieragtige stroke; groen blare, duidelik serraat (serrate)	9
b. Bas bleek, skilfer soms af in kort, smal, onbeduidende stroke (selde), donkerbruin en blink takies; blare blou-groen, blaarrand fyn getand (serrate) of gawe rand (entire)	C. STEYNII
9 a. Gewoonlik 'n enkelstammige boom, kalyx met onbeduidende, klieragtige haartjies, net sigbaar met handlens	C. GLANDULOSA
b. Gewoonlik 'n veelstammige struik, kalyx sonder klieragtige haartjies	C. PYRACANTHOIDES
10 a. Al die blare is trifoliolaat (soms 'n enkelvoudige blaar tussen-in)	11
b. Blare trifoliolaat en pinnaat op dieselfde plant	20
c. Al die blare pinnaat	22
11 a. Klein takkies doring-agtig (spine-tipped), fluweelige blare, blaarrand golwend (scalloped); bas grys-groen, skilfer af in geel, papieragtige stroke	C. AFRICANA
b. Klein takkies nie doring-agtig nie (not spine-tipped), blaartjies haarloos	12
12 a. Blaartjies smal en langwerpig (elongate)	13
b. Blaartjies nie soos bogenoem nie	15
13 a. Blaartjies met gawe rand (entire); blaartjies onreëlmatig gelobd, lyk soos 'n "stag's antler"; slegs in Oranjerivier en laer Visrivier-areas	C. CERVIFOLIA
b. Blaartjies met getande rand (serrate), mag baie fyn wees	14

14 a. Blaartjie rande baie fyn getand; blaartjies smal oblanceolaat, sentraal tot noord Namib & Kunenevallei	C. OBLANCEOLATA
b. Blaartjie rande onreelmatig en grof getand (dentate); blaartjies baie smal en langwerpig (elongate), slegs in Oranjerivier vallei	C. GRACILIFRONDOSA
15 a. Blaartjie rande getand (serrate) of golwend (scalloped); stam dikwels opgeswel, bas skilfer nie af nie	16
b. Blaartjie rande gaaf (entire); stam nie opgeswel nie; bas mag afgeskilfer, soms nie	18
16 a. Blare gewoonlik trifoliolaat, maar enkelvoudige blare kom ook voor; terminale blaartjie is oblanceolaat, tot 36 x 13 mm, slegs in Oranjeriervallei	C. GARIEPENSIS
b. Blare omtrent altyd trifoliolaat, enkelvoudige blare baie selde aanwesig; blaartjies klein, breed ovaat tot amper rond	17
17 a. Blaartjie rande getand (serrate), blaartjies meestal obovaat; pseudoariel 4-lobbig, slegs in noordelike en sentrale Namib, westelike Khomas Hochland & Tsarisberge	C. DINTERI
b. Blaartjie rande feitlik gaaf (entire) of min golwend (scalloped), blaartjies feitlik rond, pseudoariel afwesig, slegs in suide van Namibië	C. CAPENSIS
18 a. Groot blare, 65-150 mm; blaartjies ovaat tot amper rond, apeks gepunt; boom tot 10 m hoog, slegs in Caprivi	C. MOSSAMBICENSIS
b. Blare klein, 10-70 mm; blaartjies smal ovaat, apeks rond; struik tot struikagtige boom met dun takke, slegs vanaf Kuisebrivier noord-weswaarts	19
19 a. Bas geel-wit tot silweragtig, skilfer af in lang, papieragtige stroke; plant kan naby grond vertak, maar kan ook 'n enkel, kort stam vertoon	C. VIRGATA
b. Bas rooi-bruin tot amper swart, skilfer nie af nie; veelstammig vanaf grondvlak, noord-weswaarts vanaf Sesfontein	C. GIESSII
20 a. Boom met varieerbare bas, blare gewoonlik trifoliolaat, soms pinnaat, groot, 65-150 mm; blaartjies ovaat tot amper rond, apeks gepunt, slegs in Caprivi	C. MOSSAMBICENSIS
b. Boom of struik; bas grys tot geel-wit, skilfer af in geel, papieragtige stroke	21
21 a. Petiole lank en slank; gewoonlik 'n boom; onderbas is blougroen	C. TENUIPETIOLATA
b. Petiole nie slank nie; gewoonlik 'n struik; onderbas is groen, groei gewoonlik in groepe (van dieselfde spesie) (groves), jong takkies donsagtig	C. ANGOLENSIS
22 a. Blaartjie rande gaaf (entire)	23
b. Blaartjie rande duidelik of onduidelik getand (serrate)	24
23 a. Blaartjies ellipties, harig; petiolule feitlik afwesig; bas bruin tot grys-groen tot silver, skilfer meestal af in dik, houtagtige stukke (discs), soms knobberig of hoekig	C. MOLLIS
b. Blaartjies diamand-vormig, verloop na 'n slanke apeks, glad; petiolules lank en slank; bas pers tot rooibruin, skilfer gewoonlik nie af nie, glad, swart en fissuurd in ouer bome	C. MULTIJUGA
24 a. Blaartjie rande liggies of fyn getand (serrate)	25
b. Blaartjie rande duidelik getand (distinctly serrate)	26
25 a. Blaartjies met fluwelige oppervlakte; stam duidelik "fluted", gladde bas; beperk tot Impalila Eiland	C. KARIBENSIS
b. Blaartjies oppervlakte met growwe hare; stam "not fluted", growwe bas, kom voor in die res van Caprivi, nie op Impalila Eiland nie	C. EDULIS
26 a. Blaartjies gewoonlik rond, soms gevou langs hoofaar; petiolules 1-5 mm lank, geen groot, klieragtige haartjies; gewoonlik 'n lae struik, selde 'n klein boompie	C. SAXICOLA
b. Blaartjies ovaat tot lanceolaat, gespits na apeks; petiolules tot 20 mm lank, met lang, klieragtige haartjies; 'n groot boom, tot 10 m hoog	C. CRENATO-SERRATA
c. Blaartjies ellipties tot ovaat, soms rond, gespits tot apeks; petiolules 2-23 mm lank, met kort, klieragtige haartjies (glandular hairs); gewoonlik 'n boom tot 8 m hoog	C. KUNENEANA

Spesies in **vet gedrukte** kom nie in Kaokoland voor nie.



Die individuele *Commiphora* spesies:

Commiphora africana (gifkanniedood / hairy corkwood)

Hierdie struik tot klein boompie, 2 - 5 m in hoogte, gewoonlik **veel-stammig**, groei veral tussen rotse in droeë bosveld savanna. Dit kom voor in die berge van noord Kaokoland, sowel as noord Namibië, noord Botswana, Zimbabwe, Mosambiek, Limpopo, Mpumalanga en noord KwaZulu-Natal (RSA). Die boom het heelwat magiese-medisinale gebruike.

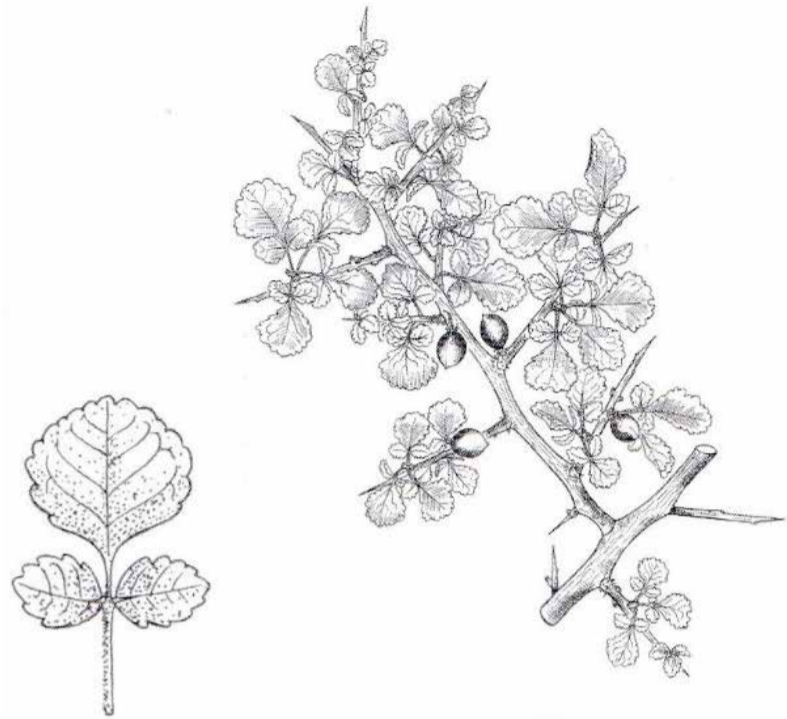
Die bas is **donkergrys tot groen-grys** in kleur, en **skilfer af in geel, papieragtige stukke om die groen onderbas tentoon te stel**. 'n Blekerige gom word vrygestel as 'n takkie afgebreek word. Die takkies is doringagtig gepunt (**spine-tipped**). Die blare is **trifoliolaat** en die proksimale pinnae se lengte is meer as die helfte van dié van die terminale pinna. Die terminale pinna is meer as 20 mm in lengte. (tot 80 x 50 mm in grootte) Die boonste en onderste blaaroppervlaktes is **fyn fluweelig**. Die pinnae is obovaat of ellipties in vorm en beide die pinna apeks en basis is breed gespits. Die blaarrand is **golwend** (scalloped).

Die blaarstingel of petiool is tot 4.5 cm in lengte. Die klein blommetjies verskyn in Oktober en is groen tot rooi in kleur. Hulle is in aksillêre groepe geranskik. Die vrugte verskyn tussen November en Maart, is sferies in vorm, 12 mm in deursnit en is pienk-rooi as hulle ryp is.

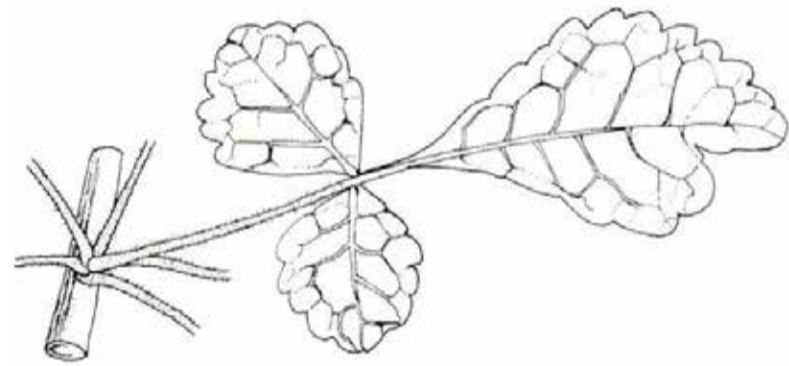


Commiphora africana (afgeneem in die Pumbe sandveld)

Twee variante kom voor, naamlik var. *africana* en var. *rubriflora*



Commiphora africana var. *africana*

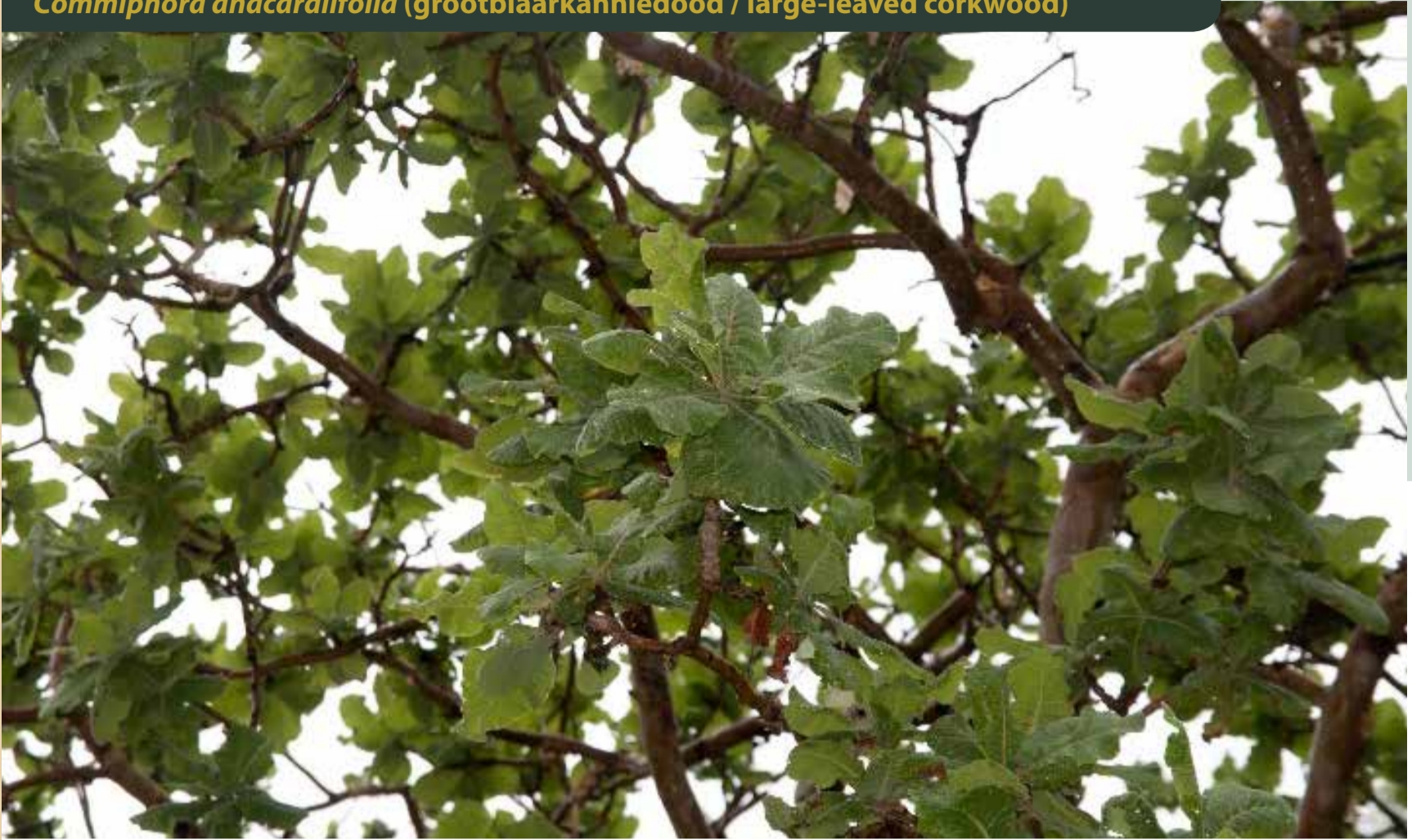


Commiphora africana var. *rubriflora*

Die var. *africana* is bekend in Kaokoland as omboo, omukange, omukuyu of ongareya. Die var. *rubriflora* is meer harig, voorheen ook bekend as *Commiphora pilosa*. Laasgenoemde het rooi blomme, soos aangedui deur sy wetenskaplike naam.



Commiphora anacardiifolia (grootblaarkanniedood / large-leaved corkwood)



Hierdie medium grootte boom, tot 10 m in hoogte, het 'n dik **enkelstam** en groei in rotseilande op die rand van die Namib woestyn. Dit is slegs endemies in Kaokoland en Damaraland.



Commiphora anacardiifolia (afgeneem in Kaokoland)

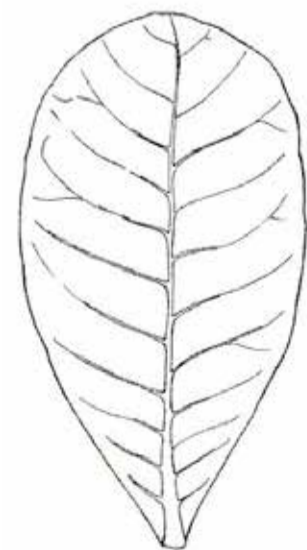
Die bas is **geelbruin en skilfer af in papieragtige stroke**. Geen dorings kom voor nie. Die blare is **enkelvoudig** en is geranskik naby die punte van die takke. Die blare is **baie groot**, tot 120 mm in lengte, en is rond tot obovaat, dik, **leeragtig en grof**. Dit is **blougroen in kleur en is bleker op die onderste oppervlakte**. 'n **Duidelike bearing** kom voor.

Die blaarapeks is rond en die blaarbasis is gespits. Die **blaarrand is gaaf**. 'n Kort petiool kom voor, maar die blare is meestal **sittend**. Die klein blommetjies is geel in kleur en kom voor op lang, dun stingels. Hulle verskyn in November. Die sferiese vruggies verskyn in Mei en is 10 mm in deursnit. Die vruggies se apeks is gepunt.

Die plaaslike naam vir hierdie boom is omutenge.



Commiphora anacardiifolia





***Commiphora angolensis* (sandkanniedood / sand corkwood)**

Die Sandkanniedood is 'n **klein** boompie, tot 6 m in hoogte, wat op diep Kalahari sand groei. Dit is meer dikwels 'n **struik**. Dit kom voor in die sentrale berge van Kaokoland en is altyd oos van die 200 mm reënval lyn. Dit kom ook voor in Angola, Zimbabwe, Noordwes en Limpopo provinsies van Suid-Afrika. Die plante verkies om **in groepe** ("groves") bymekaar te groei.

Die bas is **geel-groen** tot okkerneut bruin in kleur en **skilfer af in silwerwit tot geel papieragtige stroke om die groen onderbas ten toon te stel**. **Geen dorings** kom voor nie. Die blare is **trifoliolaat of saamgesteld** met 2 - 4 paar pinnae, sowel as 'n terminale pinna. Daar is altyd minder as 6 paar pinnae. Die pinnae is langwerpig, tot 60 x 23 mm in grootte, en die blare en takkies is bedek met **fluweelige haartjies**. Elke pinna se apeks en basis is breed gespits. Die blaarrand is golwend tot fyn getand. Die tandjies is baie stomp.



Die blare van *Commiphora angolensis*

Die **petiolules is baie dik en kort**, en die blaarpetiool is tot 5 cm lank. Klein geel blommetjies verskyn in groepe op slanke steeltjies, tot 8 cm in lengte, gedurende Oktober en November. Die vrugte is ovaal tot sferies in grootte en is 10 mm in deursnit. Die vrugte is pienk in kleur as hulle ryp word in Februarie en Maart.



Die stam van *Commiphora angolensis*

Commiphora angolensis kan verwar word met *Commiphora africana* (dorings) en *Commiphora tenuipetiolata* (gewoonlik 'n boom met 'n enkel stam, en verkies bergagtige terrein). Beide het geel, afskilferende bas.



Commiphora angolensis (afgeneem naby Epupa watervalle, Kaokoland)

Die boom groei net in diep sand, daarom die volksnaam 'sandkanniedood' of "sandbalsambaum" in Namibië. Die Himba-Herero naam is omongorwa, omuhangorwa of omukange.



Commiphora in Kaokoland

Commiphora crenato-serrata (damarakanniedood / Damara corkwood)

Hierdie endemiese boom is 3- 10 m in hoogte en groei tussen rotse of in rotsskeure op die Boonste Beesvlakte van Kaokoland. Die plant is geassosieerd met *Albizia brevifolia* en *Moringa ovalifolia*.



Commiphora crenato-serrata

Die bas is grys tot bruin, en is **glad**. Geen dorings kom voor nie. Die boom het **saamgestelde blare** met ses paar teenoorstaande pinnae plus 'n terminale pinna, gegroep op **die punte van die takke**. Die pinnae is **smal langwerpig**, 50 - 90 mm in lengte, en 25 - 40 mm in breedte. Die pinnae is fluweelig as hulle jonk is, maar **verloor hulle haartjies as hulle ouer word**. Die pinnae het 'n dun tekstuur en die onderste oppervlaktes is ligter in kleur.

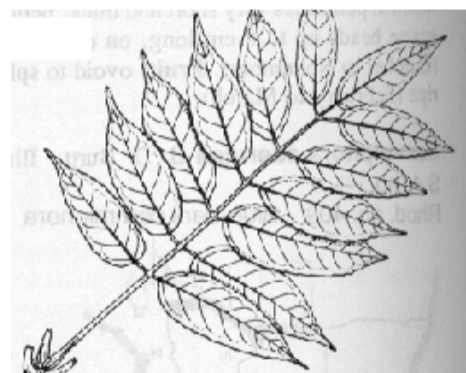
Elke **pinna se apeks is smal gespits** (tot attenuaat) en die basis is vierkantig of gelob. Die pinnae se **blaarrand is baie fyn getand**. Die petiolules is dun en is **15-20 mm in lengte**, met lang, klieragtige haartjies. Die petiool is tot 7 cm in lengte.



Die stam van *Commiphora crenato-serrata*

Klein, geel, aksillêre blomme verskyn in November tot Desember. Die vruggies is bruingroen tot donker goudgroen in kleur, is fluweelig, en is 15 x 7 mm in grootte. Elke vruggie het 'n apeks met 'n lang punt. Die vruggies verskyn vanaf Desember tot Januarie.

Die boom word somtyds verwar met *Kirkia acuminata* (donker bas, sittende pinnae en geen eksudaat nie).



Die blare van *Commiphora crenato-serrata*





Commiphora dinteri (namibkanniedood / Namib corkwood)

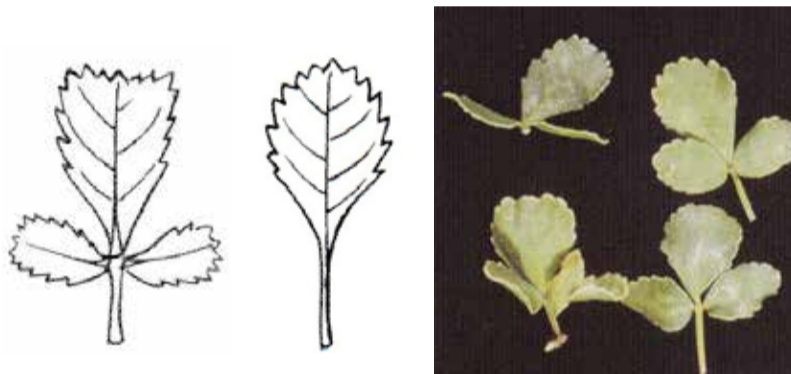
Kom voor in Kaokoland en die noordelike en sentrale Namib gruisvlaktes, die westelike Khomas Hochland en die Tsarisberge.



Dit het 'n **dik, geswolle, prostraat stam**, wat naby die grond vertak. Die bas is **wit-grys tot grys-bruin, glad tot geriffeld met swart stroke**. Die boom het **trifoliolaat blare**, en soms met

enkele enkelvoudige blare. Die **blaartjies is klein en meestal obovaat**. Die terminale blaartjie is **obovaat**. Die blaartjie rande is **diep gekarteld (serrate)**.

Die ovaal vrugte het 'n rooi, 4-lobbige, pseudoariel.



Die blare van *Commiphora dinteri*

Commiphora dinteri lyk soos *Commiphora capensis* (pseudoariel is afwesig; en die boom groei net in die suide van Namibië). Dit kan ook verwar word met *Commiphora gariensis* (groeï slegs in die suidoostelike hoek van Namibië, by die Oranjerivier). Die Himba naam van *C. dinteri* is omumbungu, wat beteken, die "boom van die hyena", weens die slegte reuk van die boom.

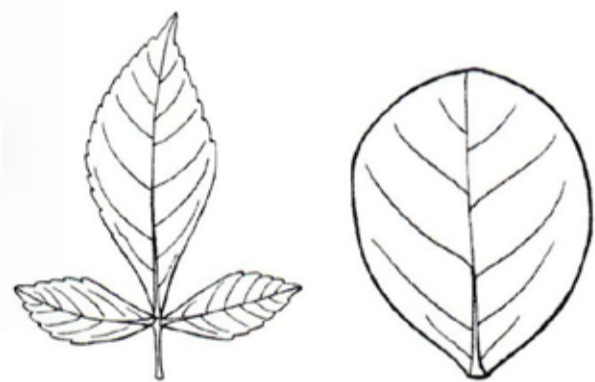
Commiphora discolor (reepbaskanniedood / stringy-barked corkwood)

Commiphora discolor is 'n klein boompie, tot 9 m in hoogte. Dit is endemies in rotsagtige, bergareas van noord Kaokoland en suid-Angola. Die plaaslike naam is omurere.

Die bas is **geel-wit**, glad en **skilfer af soos papier in lang repe**. Die takkies is **doringagtig gepunt** en is óf reguit, tot 40 cm in lengte, óf dwerg, laterale takkies, 2,5 cm in lengte. Die blare is gewoonlik **enkelvoudig**, soms trifoliolaat (met twee baie kleiner laterale blaartjies), en is saam geransik op die punte van die dwergtakkies. Die blare is **blink en haarloos, donkergroen bo en het 'n ligter groen onderste oppervlakte**. Beide die apeks en basis is gespits en die **blaarrand is getand**. Geen petiolules kom voor nie. Die petiool is tot 13 mm in lengte.

Die blomme is donkerpers en verskyn gedurende September en Oktober op die punte van die dwerg takkies. Die vrugte is sferies, 10 mm in deursnit, vlesig en verkleur pers as hulle ryp is. (Desember)

Commiphora discolor word soms verwar met *Commiphora glandulosa* (waar die bas in blokke afskilfer en groen onderbas tentoonstel).



Commiphora discolor

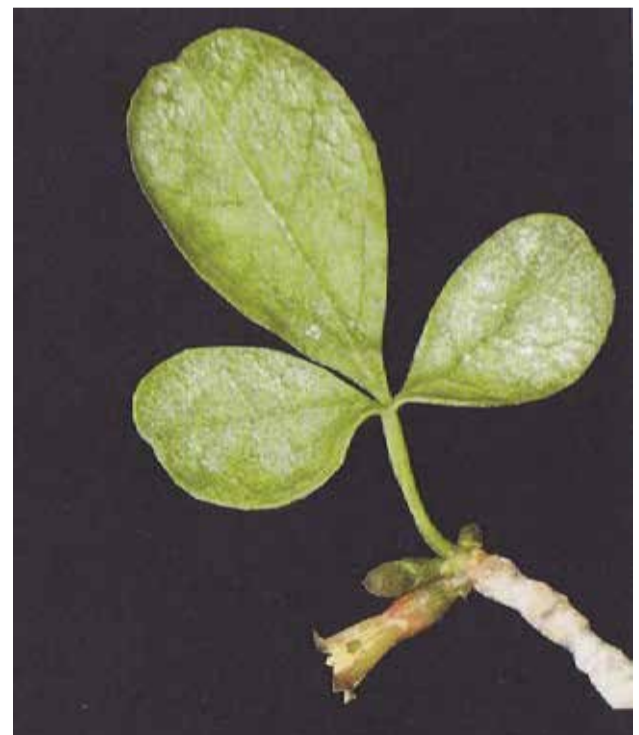
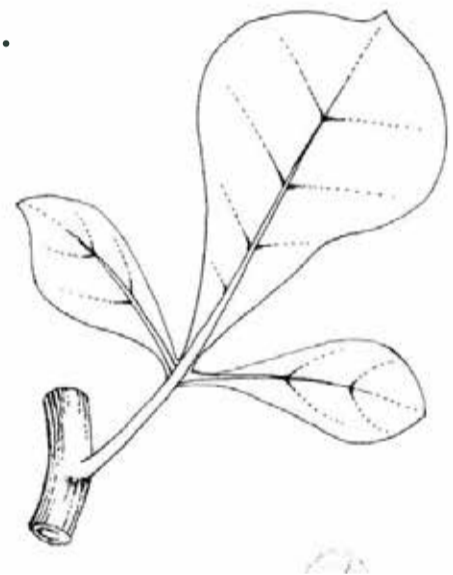
Commiphora giessii (bruinstamkanniedood / brown-stemmed corkwood)



Hierdie struikboompie, tot 3 m in hoogte, is veelstammig, en het lang, slap rooi-bruin takke.

Hierdie struikboompie, tot 3 m in hoogte, is **veelstammig**, en het lang, **slap rooi-bruin takke**. Dit is endemies tot berghange en valleie noordweswaarts vanaf Sesfontein. Die bas is **glad, blink, rooi-bruin tot swart** in ouer stamme, en **skilfer gewoonlik nie af nie**. Klein takkies is nie doringagtig nie. Die blare is **trifoliolaat** met elliptiese tot **klein, smal obovaat blaartjies**. Beide blaartjie oppervlakte is bleekgroen en **haarloos**. Die blaartjie rande is **gaaf**.

Commiphora giessii kan verwar word met *C. virgata* (maar laasgenoemde se bas skilfer af in geelwit tot silwer papieragtige stroke). Die Khoi naam is |oab of |nas.



Commiphora giessii





Commiphora in Kaokoland

Commiphora glandulosa (groot-gewone kanniedood / tall common corkwood)

Hierdie boom was altyd bekend as *Commiphora pyracanthoides* subsp. *glandulosa*, en lyk baie soortgelyk aan *Commiphora pyracanthoides*, wat 'n korter groeivorm het, meestal veelstammig.

Die blomme van *Commiphora glandulosa* het 'n kaliks (calyx) met klein tot lang klieragtige haartjies (**glandular hair**), meestal net sigbaar met 'n handlens. Dit het 'n wydverspreide voorkoms.



Commiphora glandulosa is 'n **enkelstammige boom** met **grys tot geel-groen bas, wat afskilfer in geel, papieragtige stroke (blokke) om die groen onderbas te vertoon**. Die klein takkies eindig in **dorings**. Die blare is **enkelvoudig**, soms trifoliolaat. Beide blaar oppervlaktes is **blinkgroen**. Die blaarrandjies is meestal gekartel (serrate).

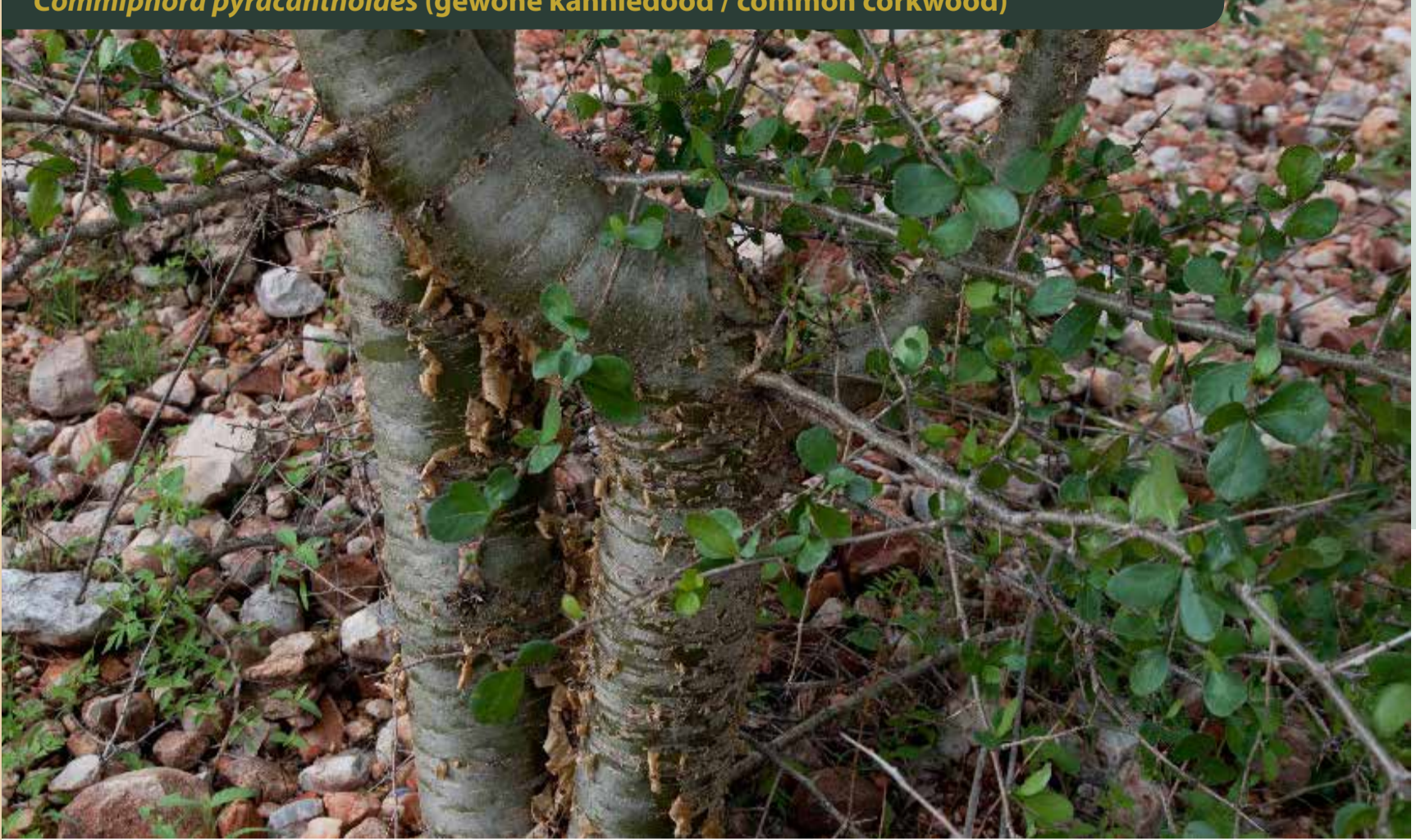


Die plaaslike volksnaam in Kaokoland is omukange, of omboo.



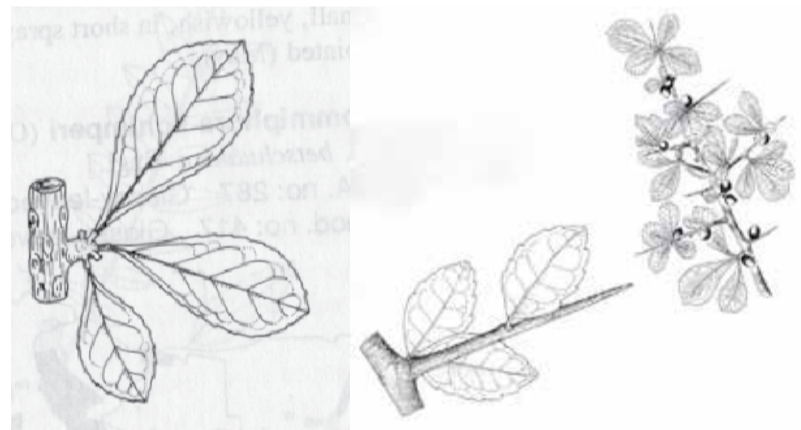
Commiphora glandulosa

Commiphora pyracanthoides (gewone kanniedood / common corkwood)



Voorheen bekend as *C. pyracanthoides* subsp. *pyracanthoides* (gewone kanniedood). Baie algemeen oor Suidelike Afrika. Dit groei algemeen in Kaokoland. Dit verkies 'n droeë bosveld.

C. pyracanthoides is gewoonlik 'n laaggroeiende **struik**, 1 - 3 m in hoogte, met **veelvuldige stamme**. Die bas is **grysgroen, geel of rooi in kleur, en skilfer af** in papieragtige stroke om die groen onderbas tentoon te stel. Kort, laterale takke kom voor. Die **takke eindig in dorings**.



Commiphora pyracanthoides

Enkelvoudige blare kom voor op die punte van die kort, doringagtige takkies, en is **blinkgroen**, smal obovaat, tot 75 x 32 mm in grootte. Die blare is soms trifoliolaat, maar het dan twee baie kleiner laterale blaartjies. Die boonste oppervlakte is vars, heldergroen in kleur, en die onderste oppervlakte is ligter groen in kleur. Die geel syare is duidelik sigbaar op die boonste blaar oppervlakte. Die blare is haarloos en die **blaarrand is getand**. Geen petiole kom voor nie.

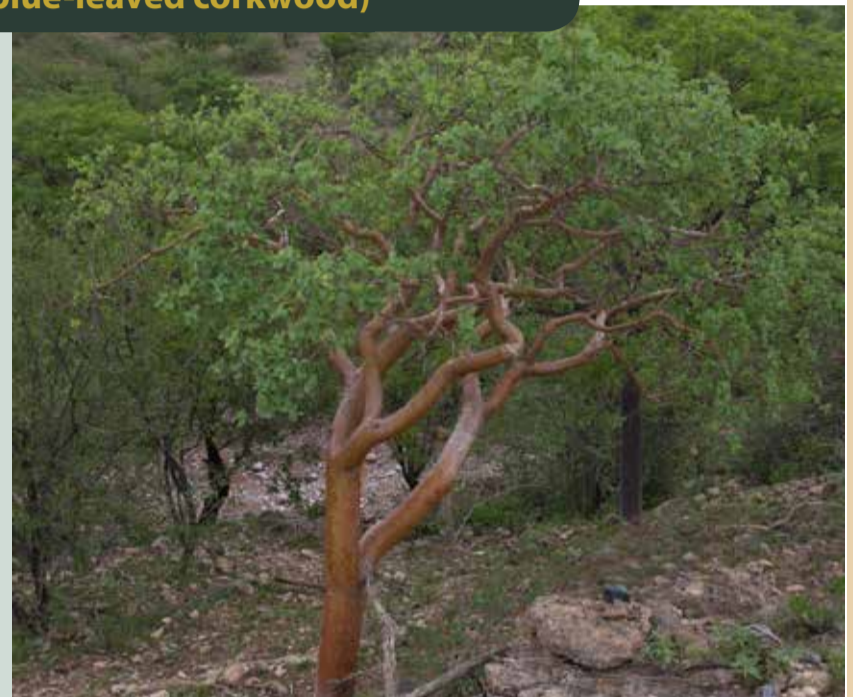
Die klein, pienk-rooi blommetjies verskyn in groepies voor die blare (September tot Oktober). Die kalyx het geen klieragtige haartjies nie. Die vruggies is ovaalvormig, haarloos en tot 10 mm in lengte.





Commiphora glaucescens (bloublaarkanniedood / blue-leaved corkwood)

Hierdie boompie is tot 8 m in hoogte, enkel- en dik-stammig, asook spreidend. Dit kom verspreid voor op die Ovahimba hoogland van Kaokoland, sowel as in sentrale Namibië, op rotskoppies of teen berghellings.



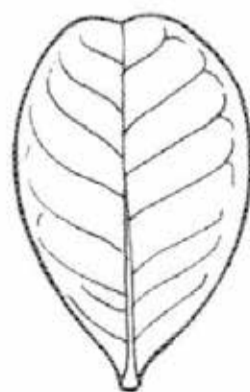
Commiphora glaucescens se koperkleurige bas

Die bas is glad met **goue tot rooi afskilferende, papieragtige bas**. Die rigiede takke het geen dorings nie. **Enkelvoudige blare**, geranskik op die punte van dwerg takkies, kom voor. Die blare is ovaat tot obovaat, meestal **breed ellipties**, 25 - 50 mm x 13 -

30 mm in grootte. Die blare is selde groter as 50 x 20 mm. Die boonste blaaroppervlakte is **blougroen** (vandaar die spesifieke naam) en die onderste oppervlakte is ligter groen. Die blare is haarloos tot fluweelig. Die blaarapeks is breed gespits tot rond, en selfs gekeep, terwyl die blaarbasis gespits is. Die **blaarrand is gaaf** en undulaat. Die petiool is kort.

Klein, pienk-wit blomme verskyn in aksillêre trosse vanaf November tot Februarie. Die vruggies volg na die blomtyd en is sferies, 10 mm in deursnit, en fluweelig.

In Kaokoland word *Commiphora glaucescens* se blare baie groot en kan die boom soms verwar word met *Commiphora anacardiifolia*. Die blougroen blare en die koperkleurige bas is egter diagnosties.

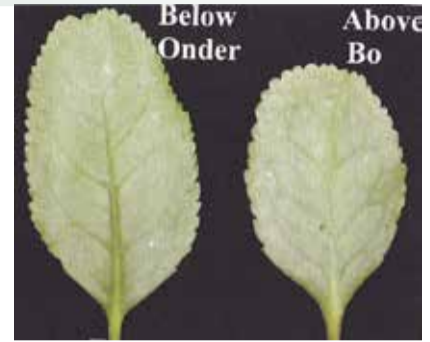


Commiphora in Kaokoland

Commiphora kaokoensis (kaokokanniedood / Kaoko corkwood)

Hierdie klein boompie met sy dik, geswolle stam, wat naby die grond vertak, kom voor tussen die Ugab en die Hoanibrivier opvangsgebiede in Kaokoveld.

Sy bas is bleekgrys tot rooi of geel kleurig, grof of glad met swart kolle. Die takke is haarloos. Die blare is **enkelvoudig**, in klossies op kort terminale takkies, tot 58 x 32 mm in grootte, feitlik sittend, obovaat of **breed obovaat tot breed ellipties**, olyfgroen in kleur. Die blaarrand is gaaf, of **fyn getand**. **Geen dorings** kom voor nie, en die bas skilfer nie af nie.



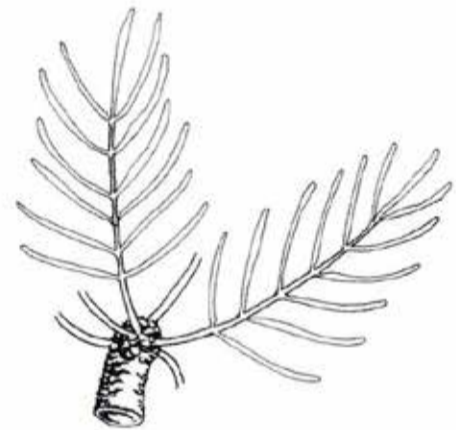
Die blare van *Commiphora kaokoensis*

Commiphora krauseliana (fynblaarkanniedood / feather-leaved corkwood)

Hierdie veelstammige, kort boompie, word selde hoër as 2 m in hoogte. Dit groei op rots koppies en teen rotshellings aangrensend aan die Namib woestyn. Hierdie kanniedood is endemies tot Kaokoland.

Die bas is **rooi tot geelbruin, wat geel tot oranje afskilfer** in papieragtige stroke by die basis. Die sytakke is kort en styf en geen dorings kom voor nie. As die takke gebreek word, laat dit 'n onaangename reuk vry. Die **saamgestelde blare** (imparipinnaat) word op kort, dwerg laterale takke gedra. Die blaar bestaan uit 6 - 8 paar pinnae plus 'n terminale pinna. Elke pinna is **baie smal, draadagtig tot lynvormig**, tot 19 mm in lengte. Die blare is haarloos.

Klein, geel blommetjies word op slanke stingels gedra. Die vrugte is sferies en is 20 mm in deursnit. Hierdie *Commiphora* dra die grootste vrugte van al Namibië se kanniedood spesies.



Die blare van *Commiphora krauseliana*

Sy Khoi naam is |ana.





Commiphora mollis (fluweelkanniedood / velvet corkwood)

C. mollis is 'n mediumgrootte boompie wat baie algemeen voorkom in die bosveld van die Noordwes, Limpopo, Mpumalanga, Zimbabwe en noordoos-Botswana.

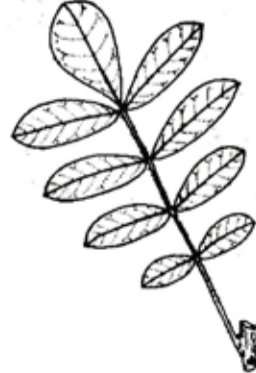
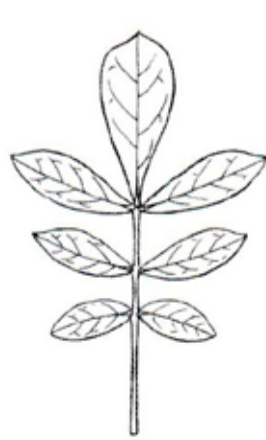
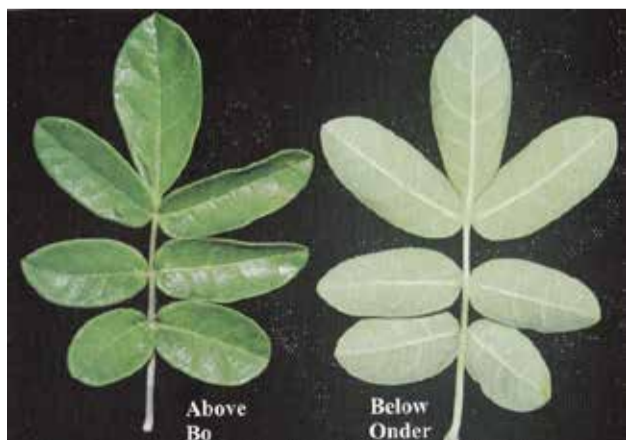
Dit groei ook **algemeen** op die koppies van die Ovahimba hoogland. Dit groei maklik van stiggies. Dit het 'n **enkel stam met 'n ronde, spreidende kroon**.

Die **bas is baie varierend** van donkergroen tot grys en word silweragtig as dit aan die son blootgestel word. Die bas is gerimpeld, of glad. Die bas **skilfer af in geel, papieragtige stroke**, om die groen onderbas bloot te stel. Die bas het soms **knobberige verdikkings**, soms **hoekig**. Die takkies is soms doringagtig, en **fluweelig**. Die blare is kenmerkend **imparipinnaat** en bestaan uit 2 - 6 paar pinnae plus 'n terminale pinna. Die blare is soms trifoliolaat. Die rachis is **tot 50 mm lank** met 'n **digte, roesrooi bedekking**. Die proksimale paar pinnae is dikwels baie kleiner as die res van die pinnae. Die pinnae is ellipties, 60 x 30 mm in grootte, grysgroen in kleur, met 'n bleker onderste oppervlakte. Die pinnae word bedek met **digte, kort, sagte fluweelige haartjies**. Die blaarrand is gaaf.

Die blomme verskyn Oktober tot November in aksillêre groepe en is klein, geel tot pienk in kleur. Die vrugte is sferies, 10 mm in deursnit, groen tot bruin in kleur en word dof-rooi in die Herfs. Die vrugte is bedek met sagte haartjies.



Commiphora mollis (afgeneem by Medike, Soutpansberg)



Commiphora mollis



Commiphora multijuga



Commiphora multijuga (persstamkanniedood / purple-stemmed corkwood)

Hierdie pragtige boompie, tot 4 m in hoogte, is endemies in Kaokoland. Dit groei veral teen die westelike hange van die Baynesberge en op die koppies van die Ovahimba hoogland.

Dit groei ook **algemeen** op die koppies van die Ovahimba hoogland. Dit groei maklik van stiggies. Dit het 'n **enkel stam met 'n ronde, spreidende kroon**.

Die **bas is baie variërend** van donkergroen tot grys en word silweragtig as dit aan die son blootgestel word. Die bas is gerimpeld, of glad. Die bas **skilfer af in geel, papieragtige stroke**, om die groen onderbas bloot te stel. Die bas het soms **knobberige verdikkings**, soms **hoekig**. Die takkies is soms doringagtig, en **fluweelig**. Die blare is kenmerkend **imparipinnaat** en bestaan uit 2 - 6 paar pinnae plus 'n terminale pinna. Die blare is soms trifoliolaat. Die rachis is **tot 50 mm lank** met 'n **digte, roesrooi bedekking**. Die proksimale paar pinnae is dikwels baie kleiner as die res van die pinnae. Die pinnae is ellipties, 60 x 30 mm in grootte, grys-groen in kleur, met 'n bleker onderste oppervlakte. Die pinnae word bedek met **digte, kort, sagte fluweelige haartjies**. Die blaarrand is gaaf.



Commiphora multijuga

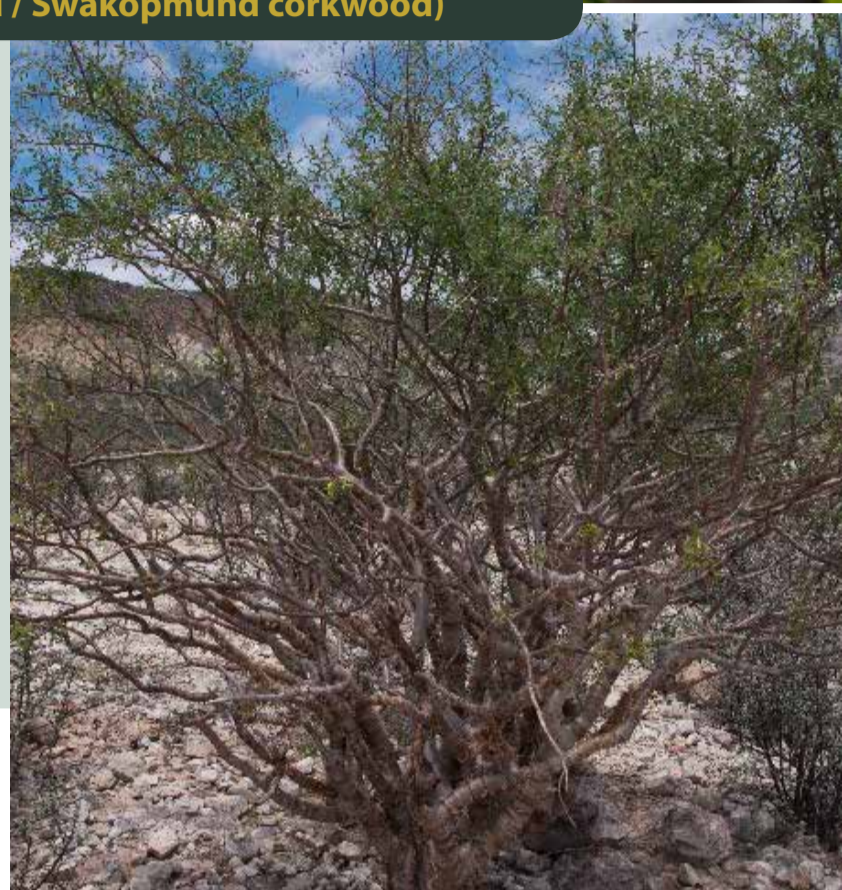
Die blomme verskyn Oktober tot November in aksillêre groepe en is klein, geel tot pienk in kleur. Die vrugte is sferies, 10 mm in deursnit, groen tot bruin in kleur en word dof-rooi in die Herfs. Die vrugte is bedek met sagte haartjies.





***Commiphora oblancoolata* (swakopmundkanniedood / Swakopmund corkwood)**

Hierdie **dikstammige boompie**, tot 3 m in hoogte, groei op droeë rotskoppies van Kaokoland en Damaraland. Dit is absoluut endemies en lyk baie soos *Commiphora gracilifrons*, die kareekanniedood, in die suide van Namibië.



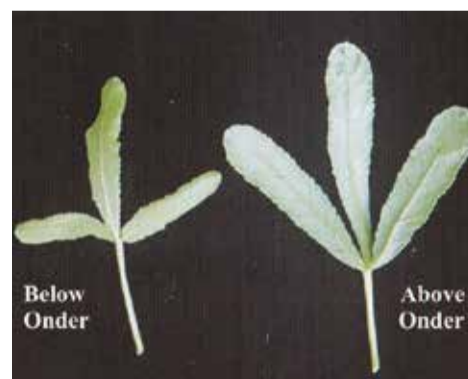
Commiphora oblancoolata

Die bas is **rooibruin tot geelbruin in kleur**, vertoon **glad en skilfer ook nie af nie**. **Geen dorings** kom voor nie. Die blare is **trifoliolaat**, karee-agtig. Die pinnae is **baie smal**, 10 - 67 mm in lengte en 5 mm in breedte, **oblancoolaat**.



Die blaarrand is **onreëlmatig getand**, dog baie fyn. Die petiool is slank en is nie gevlerk nie. Die blaartjies is **haarloos**. Domatia kom voor. Die blomme is klein, geel tot groen in kleur, en verskyn in kort, aksillêre groepe in Oktober. Die vrugte is afgeplat, 10 mm in deursnit, en is skerp gespits. Die vrugte is groen met 'n rooi skynsel en verskyn in Januarie tot Februarie.

C. oblancoolata is endemies in Kaokoland en Damaraland en is baie skaars. Dit groei slegs wes van die 150 mm reënvallyn. *C. gracilifrons*, daarenteen, groei slegs langs die Oranjerivier, tussen Augrabies en Noordoewer.



Commiphora in Kaokoland

Commiphora saxicola (rotskanniedood / rock corkwood)

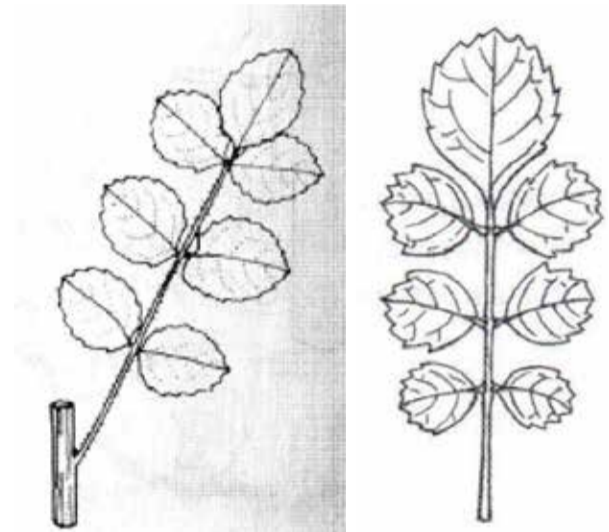
Die rotshange van die Pro-Namib en die westelike hellings van die eskarpement van Kaokoland is die ideale habitat van hierdie **laaggroeiende struik**, wat tot 4 m in hoogte word. Dit is dikwels geassosieerd met *Welwitschia mirabilis* plante en kom ook voor in die sentrale gedeeltes van Namibië en Damaraland.

Die **stam is dik en geswolle**, geelgroen tot **grys** in kleur, **baie glad** en fyn gespikkeld. Dit **skilfer nie af nie**. Geen dorings kom voor nie. Die blare is **saamgesteld** (imparipinnaat) met 3 - 6 paar pinnae plus 'n terminale pinna. Die pinnae is obovaat tot **rond**, 30 x 20 mm in grootte, is **blinkgroen in kleur** en haarloos. Die blaar is **opwaarts gevou langs die hoofaar**, en het 'n **dowwe, wasagtige voorkoms** aan die bokant. Die apeks is gespits en die basis is rond. Die blaarrand is golwend, **duidelik fyn getand**, of selfs diep **dentaat**.

Baie kort petiolules kom voor, 1-5 mm in lengte. Die petiool is lank en slank.

Baie klein, geel blommetjies verskyn in Januarie en word in Mei opgevolg deur langwerpige vruggies, 10 x 5 mm in deursnit. Die apeks van die vruggies is gepunt. Die vruggies is eetbaar.

Die Khoi naam is ||gai.



Commiphora saxicola

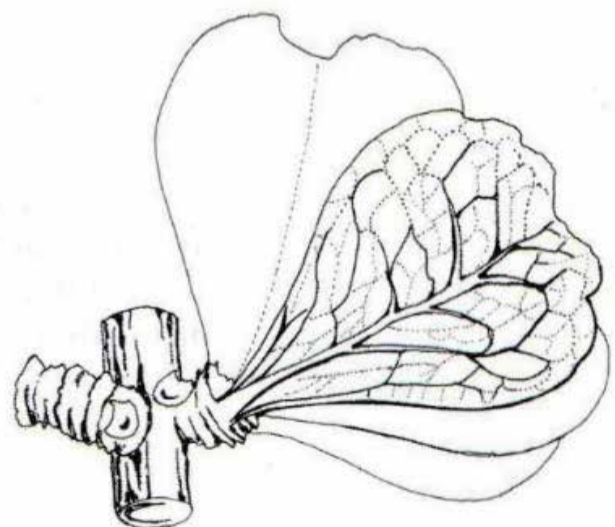
Commiphora steynii (ringbaskanniedood / ring-barked corkwood)

Hierdie spesie is maar onlangs beskryf en is endemies tot Kaokoveld. Dit kom voor noord van Palmwag, al langs die eskarpement tot by Ruacana en die Kunenerivier.

Hierdie spesie is moontlik voorheen verkeerd geïdentifiseer as *Commiphora viminea*, of voorheen *Commiphora merkeri*. Dit verskil van *C. viminea* deurdat sy bas nie beduidend, of geensins, afskilfer nie. Dit het ook geen vragagtige projeksies op sy stam nie.

Die bas lyk bleek, asgrys tot wit, met smal, transverse verlengde lentikels, vandaar die naam 'ringbas', en die verwarring met *Commiphora viminea* (voorheen *C. merkeri*). Die takke word blink rooi tot bruin, maar selfs maroon tot swart-grys. Die blare is enkelvoudig, soms trifoliolaat, gekloster en spiraal geranskik. Die blare is obovaat, tot feitlik rond, blougroen in kleur en fyn getand, soms met 'n gawe rand.

Die boom kan dorings aan hê, maar nie noodwendig nie. Die dorings is skerp, of stomp. Die eksudaat is non-aromaties. Die eksudaat van *Commiphora viminea* is aromaties. Die volksnaam is omunangwi.



Commiphora steynii



Commiphora tenuipetiolata (witstamkanniedood / white-stemmed corkwood)

Hierdie klein boompie, met 'n enkel stam, word tot 12 m in hoogte en groei in die Pro-Namib en op koppies van Kaokoland, sowel as elders in noord Namibië en die Limpopo provinsie van Suid-Afrika, en aangrensende Zimbabwe. Dit kom ook voor in Sekhukhuneland.

Die stam is, soos die naam aandui, **kenmerkend silwerwit tot geel**, en die stam **skilfer af in papieragtige stroke** om die **blou-groen onderbas** tentoon te stel. Geen dorings kom voor nie, maar die jong takke het **stomp punte**. Die takke en blare is **haarloos**.

Die **blare is trifoliolaat** (soms is daar egter twee paar pinnae plus 'n terminale pinna) en is baie **kenmerkend**: die pinnae is klein en ellipties, en is meer as 20 mm in lengte. Die terminale pinna is tot 40 x 25 mm in grootte. Die laterale pinnae is kleiner.

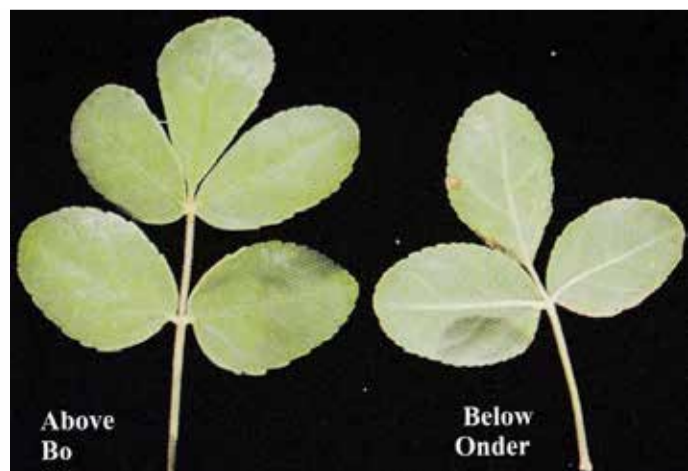
Elke pinna se apeks is gespits, die basis is rond en die blaarrand is gaaf, of het min tandjies. Die blaartjies is **haarloos of donsagtig**. Die bome met donserige blare is meer in die noorde van Namibië, terwyl die met haarlose blare meer in die suide voorkom. Die **petiool is lank en slank**. Dit word tot 50 mm in lengte.

Klein, groen blommetjies verskyn in los groepe voordat die jong blare tevoorskyn treë (Desember tot Januarie). Die vruggies volg in Februarie tot April en is sferies in vorm, 12 mm in deursnit.

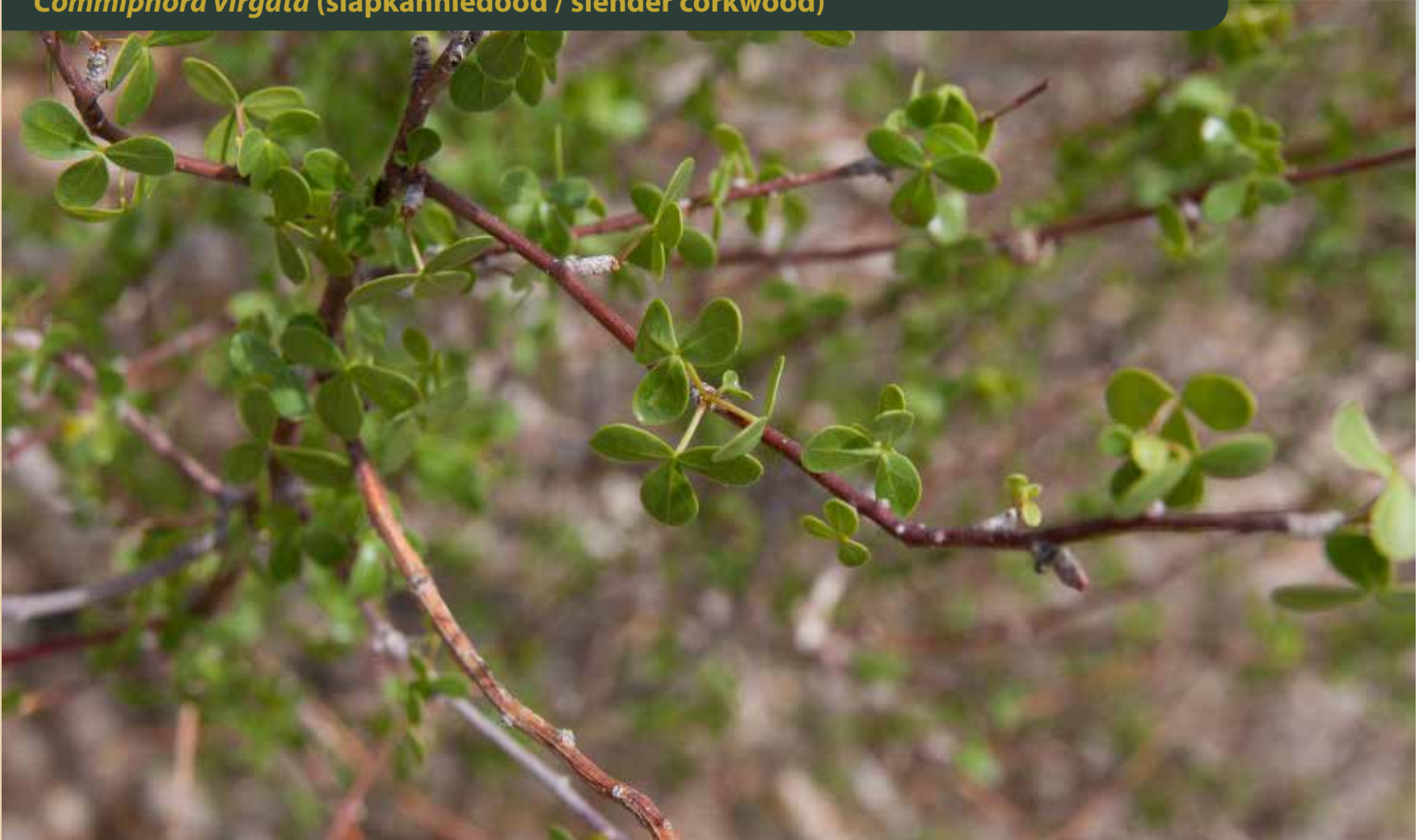
Die Khoi naam is |uri|huus, of |ũ.



Commiphora tenuipetiolata (afgeneem in Kaokoland)



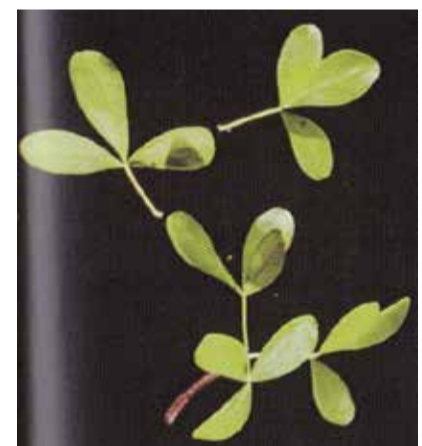
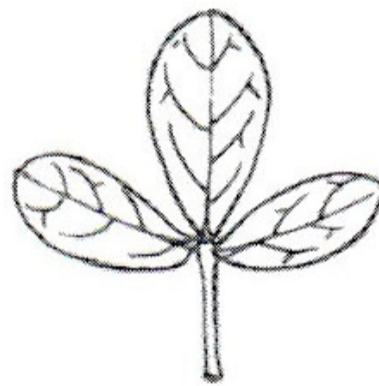
Commiphora virgata (slapkanniedood / slender corkwood)



Hierdie klein boompie, 2 - 3 m in hoogte, is **baie vertak**. Dit vertak gewoonlik naby die grond en kan 'n kort, enkel stam vertoon.

Dit vertak gewoonlik naby die grond en kan 'n kort, enkel stam vertoon. Die **bas is grys, silweragtig tot geel-wit in kleur en skilfer af in lang horisontale stroke**. Die **takke is slank, slap en hangend**. Ouer takke is rooi-bruin in kleur. **Geen dorings** kom voor nie.

Die blare is saam gegroeper op die punte van dwerg takke. Die blare is **trifoliolaat** en die pinnae is obovaat tot rond. Die **pinnae is klein** en die terminale pinna is slegs 10 - 20 mm in lengte. Die laterale pinnae is kleiner. Die blare is **haarloos**. Die apeks van elke



pinna is rond en die basis is gespits. Die **blaarrand is gaaf** en effens golwend. Die petiool is redelik kort.

Die blomme is klein en geel-groen, en verskyn in groepe op die slap takke vanaf Oktober tot November, nog voordat die blare verskyn. Die vruggies verskyn in Februarie tot April en is ovaal in grootte, 10 mm in deursnit, en rooi as hulle ryp is.

C. virgata is endemies in Kaokoland en Damaraland en groei op rotskoppies van die Pro Namib en die berge van die eskarp. Dit kan verwar word met *Commiphora giessii*, maar laasgenoemde het rooi-bruin bas, wat nie afskilfer nie (behalwe in ouer plante). Dit is veelstammig vanaf grondvlak.

Die Herero volksnaam is omumbara.



Commiphora virgata



***Commiphora wildii* (eikeblaarkanniedood / oak-leaved corkwood)**

Hierdie hoogs interessante struik, tot klein boompie, word selde hoër as 2 meter. Dit groei op klipperige plekke langs die woestyn (Pro Namib). Dit is absoluut endemies tot Kaokoland en Damaraland. Dit het 'n dik, geswolle stam, wat naby die grond vertak.

Die bas is **grysgroen tot bruin in kleur, meestal glad**, en skilfer soms af in klein stroke. Die laterale takke is kort en daar is geen dorings teenwoordig nie. Die **blare is kenmerkend en lyk amper soos 'n eikeblaar**, vandaar die Afrikaanse naam. Daar is 2 - 4 paar pinnae plus 'n terminale pinna, maar die blaar lyk meer soos 'n diep gelobde enkelvoudige eike blaar, 20 - 40 mm in lengte. **Die rachis en petiole is gevlerk**. Die pinnae se apeks is rond tot breed gespits en die blaarrand is gaaf. Die laterale pinnae is baie asimmetries. Die blaar is bedek met kort, fyn, grys haartjies.

Baie klein blommetjies, 3 mm in deursnit, geel in kleur, enkel of in pare, kom voor op slanke, aksillêre steeltjies, 2 cm in lengte (Desember tot Januarie). Die vruggies is 10 mm lank en verskyn ook op slanke steeltjies, 4 cm in lengte. Die vruggies is ovaal in vorm, en is oranje tot ligrooi as hulle ryp is.

Die Herero naam vir hierdie boompie is omumbiri.



Die pragtige blare van *Commiphora wildii*



Die pragtige blare van *Commiphora wildii*



Commiphora wildii in Kaokoland

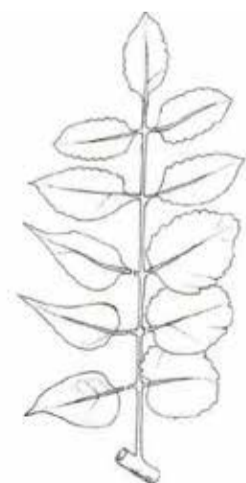


Commiphora wildii



Commiphora otjhipana (otjhipakanniedood) kom ook voor in Kaokoveld, maar is nog nie in die sleutel, of nuutste boeke, opgeneem nie. Dieselfde geld vir *Commiphora kuneneana* (kunenekanniedood) — dit is wel in die sleutel opgeneem, maar nie beskryf in die nuutste boeke nie.

Twee bome wat voorheen verkeerdlik in Kaokoland geïdentifiseer is, en nie daar voorkom nie, is *Commiphora viminea* (Zebrabaskanniedood) en *Commiphora marlothii* (Papierbaskanniedood). Ek bespreek hulle graag in meer besonderhede.



Commiphora kuneneana



Commiphora viminea (sebrabaskanniedood / zebra-barked corkwood)

Hierdie klein boompie, voorheen bekend as *Commiphora merkeri*, word tot 6 m in hoogte en is dikwels geassosieerd met mopanie bosveld. Dit kom nie in Kaokoland voor nie.

Dit kom nie in Kaokoland voor nie. Dit blyk eerder *Commiphora steynii* te wees. Dit kom voor in suid Zimbabwe en Limpopo Provinsie van Suid-Afrika, as ook in die Zambezivallei. Dit groei veral in berge.

Die bas is grys tot groengeel in kleur en dit toon duidelike swart, horisontale bande, vandaar die volksnaam "Zebrabaskanniedood". Enkelvoudige blare is geranskik in rosette op die punte van dwerg takkies. Die takkies is doringagtig. Die blare is obovaat, tot 45 x 25 mm in grootte, blougroen in kleur en is haarloos. Die apeks is rond en die basis is gespits. Die blaarrand is golwend. Die petiool is baie kort. Soms is die blare trifoliolaat, maar dan is die proksimale pinna minder as die helfte in lengte van die terminale pinna. Die eksudaat is aromaties.



Commiphora marlothii (papierbaskanniedood / paper-barked corkwood)

Hierdie goed gevormde boom, tot 13 m in hoogte, kom veral voor in Mpumalanga en Limpopo Provinsie van Suid-Afrika en in Zimbabwe se bosveld.

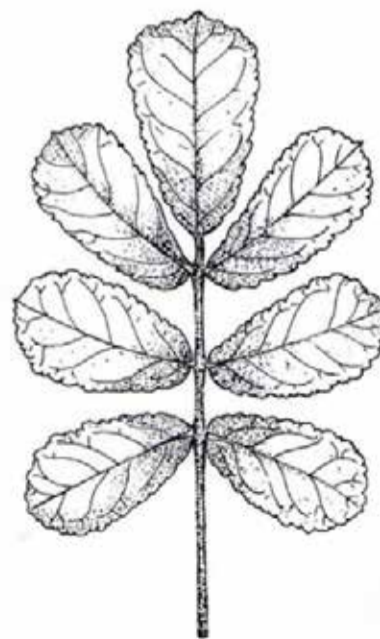
Dit is rondom 1996 verkeerdlik uitgeken in die noordelike, sentrale gedeelte van Kaokoland deur 'n groep dendroloë vanaf Suid-Afrika, op die roete na Epupa watervalle, maar dit was verwar met *Commiphora angolensis*. Dit kan ook verwar word met *Commiphora kuneneana*.

Commiphora marlothii se bas is groen en skilfer af in groot, geel papieragtige stroke. Die blare is saamgesteld en bestaan uit 3 - 4 pare teenoorstaande pinnae plus 'n terminale pinna. Daar is altyd

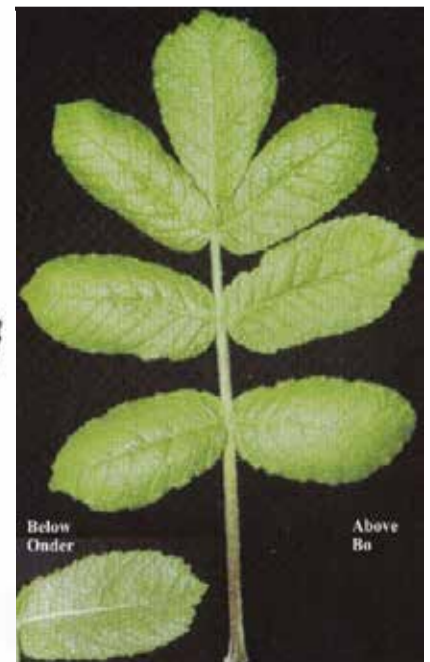
minder as ses pare pinnae. Die pinnae is langwerpig tot obovaat, 30 - 75 mm x 20 - 40 mm in grootte. Die pinnae is vars groen in kleur, sag en fyn fluweelig, veral op die onderste oppervlakte. Die basis van elke pinna is gespits tot assimetries rond. Die blaarrand is fyn getand en die petiolules is kort en dik. Die petiool self is tot 10 cm in lengte. Die blomme verskyn in die Lente (Oktober tot November) en is klein en geelkleurig. Hulle verskyn in aksillêre groepe op stingels van 4 cm in lengte. Die vrugte is ellipties met 'n klein, skerp punt, en is groen tot bruinrooi in kleur. Hulle verskyn vanaf November tot Maart.



Commiphora marlothii (afgeneem in Medike, Soutpansberg)



Commiphora marlothii





Commiphora viminea (sebrabaskanniedood / zebra-barked corkwood)

Hierdie klein boompie, voorheen bekend as *Commiphora merkeri*, word tot 6 m in hoogte en is dikwels geassosieerd met mopanie bosveld. Dit kom nie in Kaokoland voor nie.

Dit kom nie in Kaokoland voor nie. Dit blyk eerder *Commiphora steynii* te wees. Dit kom voor in suid Zimbabwe en Limpopo Provinsie van Suid-Afrika, as ook in die Zambezivallei. Dit groei veral in berge.

Die bas is grys tot groengeel in kleur en dit toon duidelike swart, horisontale bande, vandaar die volksnaam "Zebrabaskanniedood". Enkelvoudige blare is geranskik in rosette op die punte van dwerg takkies. Die takkies is doringagtig. Die blare is obovaat, tot 45 x 25 mm in grootte, blougroen in kleur en is haarloos. Die apeks is rond en die basis is gespits. Die blaarrand is golwend. Die petiool is baie kort. Soms is die blare trifoliolaat, maar dan is die proksimale pinna minder as die helfte in lengte van die terminale pinna. Die eksudaat is aromaties.



Commiphora marlothii (papierbaskanniedood / paper-barked corkwood)

Hierdie goed gevormde boom, tot 13 m in hoogte, kom veral voor in Mpumalanga en Limpopo Provinsie van Suid-Afrika en in Zimbabwe se bosveld.

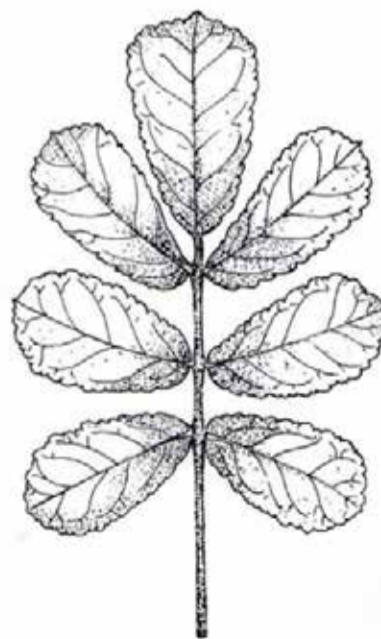
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Commiphora marlothii se bas is groen en skilfer af in groot, geel papieragtige stroke. Die blare is saamgesteld en bestaan uit 3 - 4 pare teenoorstaande pinnae plus 'n terminale pinna. Daar is altyd

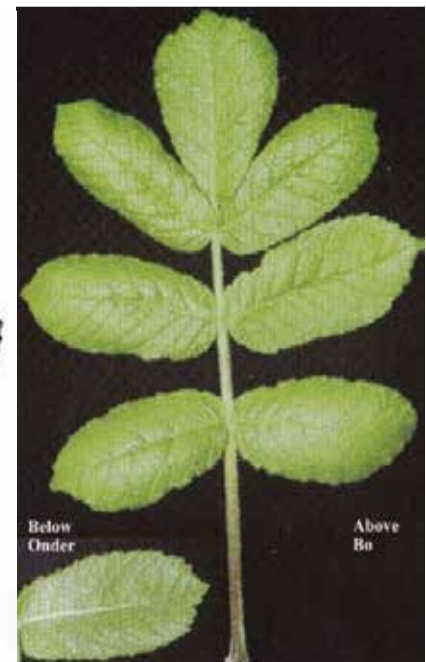
minder as ses pare pinnae. Die pinnae is langwerpig tot obovaat, 30 - 75 mm x 20 - 40 mm in grootte. Die pinnae is vars groen in kleur, sag en fyn fluweelig, veral op die onderste oppervlakte. Die basis van elke pinna is gespits tot assimetries rond. Die blaarrand is fyn getand en die petiolules is kort en dik. Die petiool self is tot 10 cm in lengte. Die blomme verskyn in die Lente (Oktober tot November) en is klein en geelkleurig. Hulle verskyn in aksillêre groepe op stingels van 4 cm in lengte. Die vrugte is ellipties met 'n klein, skerp punt, en is groen tot bruinrooi in kleur. Hulle verskyn vanaf November tot Maart.



Commiphora marlothii (afgeneem in Medike, Soutpansberg)



Commiphora marlothii



Kaokoland is opreg die tuiste van baie seldsame en interessante plante. Die *Commiphora*-genus is baie kenmerkend in hierdie habitat. Solank as die wildernisstatus van Kaokoland bewaar bly, sal hierdie plante met ons wees!

Ter opsomming noem ek nog enkele fassinerende kanniedood bome van Namibië, en elders in Suider-Afrika. In die suide van Namibië is 'n paar endemiese bome, wat in bogenoemde sleutel opgeneem is, naamlik *Commiphora cervifolia*, *Commiphora gracilifronsosa*, *Commiphora gariensis*, *Commiphora namaensis* en *Commiphora capensis*. Laasgenoemde twee spesies kom meer wyd verspreid voor in suid-Namibië.



Commiphora edulis subsp. *edulis* (afgeneem in die Nwambiya sandveld, Park Naçional do Limpopo, Mosambiek)

Die Caprivi het ook enkele *Commiphora* spesies, naamlik *Commiphora mossambicensis*, *Commiphora karibensis*, *Commiphora caerulea* en *Commiphora edulis*. Hierdie spesies kom ook voor in Zimbabwe, die Zambezivallei en verder noordwaarts. *Commiphora caerulea* is nie opgeneem in die *Commiphora* boomsleutel

van Le Roux et al se "Trees & Shrubs of Namibië" nie. *Commiphora edulis* is ook prominent rondom die Limpoporivier en noordelike Nwambiya sandveld.



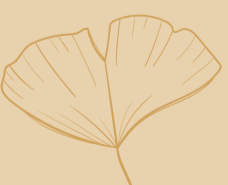
Commiphora edulis subsp. *edulis*



Commiphora harveyi in die Goba Fronteira heuwels, Mosambiek



Die stam van *Commiphora neglecta* in Zululand (KZN)





Commiphora schimperi (afgeneem in die Pumbe sandveld, Mosambiek)

Nog 'n paar *Commiphora* spesies elders in Suidelike Afrika is *Commiphora harveyi* (KwaZulu-Natal en Mpumalanga), *Commiphora neglecta* (KwaZulu-Natal sandveld en Mpumalanga), *Commiphora schimperi* (verre ooste in Caprivi, Zambezivallei, Zimbabwe, Mosambiek, Limpopo, Mpumalanga en KwaZulu-Natal), *Commiphora schlechteri* (Mosambiek kus en Kosibaaai), *Commiphora serrata* (sentraal Mosambiek), *Commiphora eminii* subsp. *zimmermannii* (noordwes Mosambiek), *Commiphora woodii* (die woude van KwaZulu-Natal en Oos-Kaap Transkei) en *Commiphora zanzibarica* (Mpumalanga, Limpopo, Mosambiek, Zimbabwe en verder noord).

'n Paar raar spesies groei ook in Mosambiek, soos *Commiphora ugogensis* (Zambezivallei en verder noord), *Commiphora caerulea* (Tete area en Cahorra Bassadam), *Commiphora fulvotomentosa*



Commiphora schlechteri (afgeneem by Macaneta-kusoord, Mosambiek)

(noord Mosambiek en Cabo Delgado provinsie), *Commiphora madagascariensis* (sentraal Mosambiek en Cabo Delgado), *Commiphora mombassensis*, *Commiphora pedunculata* en *Commiphora pteleifolia* (al drie raar spesies in die Cabo Delgado provinsie se droeë sandwoude, in Mosambiek).

Die Cabo Delgado provinsie loop geweldig deur onder Isis ekstremiste en terroristiese bedrywighede, soveel so dat niemand meer die area kan besoek nie. Hierdie provinsie bevat van die rykste en skaarste bome en plante in Mosambiek (en suidelike Afrika), veral die droeë sandwoude, en 'n mens wonder wat van die bewaring van hierdie bome sal oorbly. Dit is 'n groot jammerte dat die mens van hierdie planeet vergeet het van die natuurwonders wat eintlik die mens aan die lewe hou!

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THE AMATEURS OF TODAY

By Eugene Moll, Dept. Biodiversity and Conservation Biology,
UWC and at euegenmoll74@gmail.com

Over the decades it has become clear to me that we, the Tree Book authors of the past, have basically failed the majority of amateur tree enthusiasts to enable them to ID trees easily and accurately.

I arrived at this very sobering conclusion after some 60 years of working diligently with students and the interested general public, watching them struggle to ID many trees in the field. This all became much more apparent when I was asked to team up with Ted Woods (ex-banker and excellent photographer) on a book with the working title of "Keys to Kruger's Trees" – when Ted kept asking me why, for example, I could simply ID a marula at a glance? What EXACTLY was it that he should photograph to capture the essence of a marula to secure a 100% ID for all? Ted's persistence, and penetrating questions, forced me to review my whole tree JIZZ process that I had accumulated over a life-time. In having to interrogate my tree JIZZ ability, backed up with my experiences with a range of people wanting to know how to ID trees, I started to better understand why amateurs find ID so difficult. Basically, I put this down to the fact that plant ID books are written by subject authorities for others who already know many of the species, or at least general!

Stepping back for a moment I need to put my own tree ID journey into context, because much of what I am going to say and illustrated later in this article is critical of our existing literature. Literature that in many ways is excellent, but literature that also is not always helpful to amateurs. Thus, this article is designed to deliver a constructively critical review - in the hope that future tree book authors, and publishers, will reassess ways and means of greatly improving the tree ID outcomes.

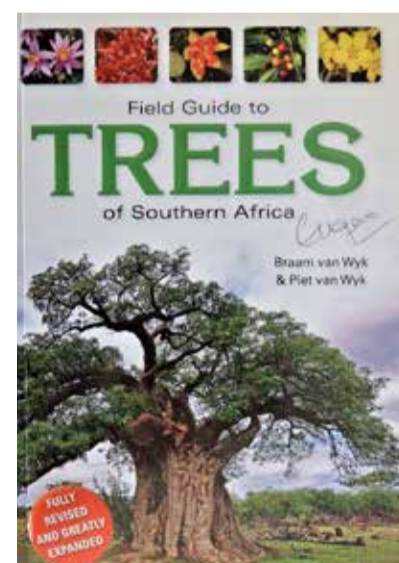
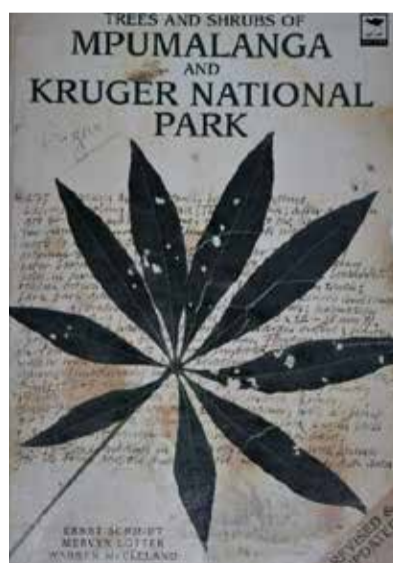
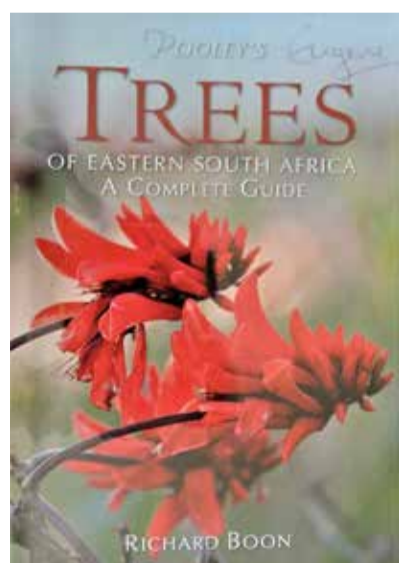
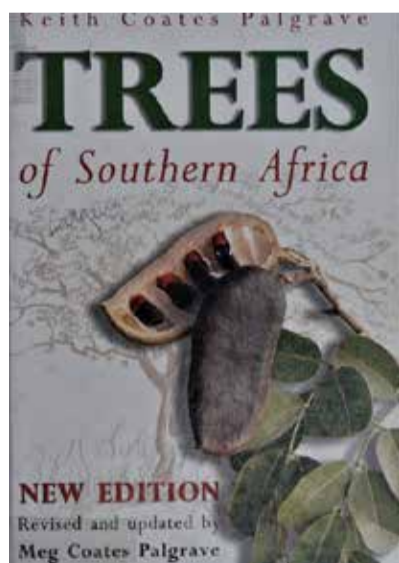
Over the years I have tried my best to assist amateurs and students alike in all my publication endeavours. First, I spent many years compiling leaf keys (Forest Trees of Natal [1967], Trees of Natal [1981 & 1992] and Trees of the Cape Peninsula [1981]), writing a couple of minor tree books (the latest in 2011), publishing dozens of articles on trees and botany in general, and even completing the massive task of editing the first edition Coates Palgrave's "Trees of Southern Africa" (1977) - when I spent the best part of two years working on the final product and making huge alterations to the first draft.

When I reflect back on my early days with the then Wildlife Society (now WESSA), the old Tree Society, and later BotSoc, and the many university students I had the great pleasure of interacting with, the limited success I have had was not greatly assisted by any of my books - but rather was achieved by the enthusiasm and the passion I shared with those of a similar ilk (much of the success was working with people in the field on a one-to-one basis). Thus, the key to my success at university was fieldwork – walking in the bush! No books can replace seeing, touching, smelling and sometimes tasting trees "in the bush".

However, I am also aware that we cannot grow an army of citizen scientists by one-to-one interaction, we need other means of communication and learning that will grow the numbers much more quickly. Many people are more than capable of learning from books (and today from the internet), and there are a few excellent non-botanical tree-people who have acquired incredible knowledge. But three things trouble me right now:

1. I don't see enough young people, representative of the SA diaspora, "getting into botany".
2. Why have we failed when we have so many seemingly excellent books? And certainly, an amazing tree flora.
3. Increasingly I am aware that some of the knowledge gained and being passed on is not accurate.

The best way to illustrate these concerns is, I believe, to use examples taken from four of what I consider to be the best tree books available. In doing this I have chosen six common and widespread species included in all four selected tree books, and hope to demonstrate conclusively how their successful field ID can be greatly improved with a little innovation.



My best four tree books. From left to right are: Coates Palgrave where I played a major editorial role in the first edition (1977), and for me this is still the most comprehensive reference; Boon's revision of Pooley is excellent for eastern SA; Schmidt, Lötter and McClelland's Mpumalanga & Kruger's trees (my Lowveld "Bible"); and last but by no means least van Wyk & van Wyk that is arguably the most popular book with the amateurs because trees are listed "artificially" i.e. by leaf characteristics thus enhancing ID.

Before looking at the examples, and my suggested improvements for simplification, I think it is important to outline the issues with the existing books:

1. Traditional keys are very complex and after repeated and tediously repetitive attempts users cannot be 100% certain of the final ID.
2. Mostly books use botanical jargon to be “scientifically correct” and this is confusing to the non-botanists.
3. All books, excluding Coates Palgrave, use photographs, many of which (in my mind) have no real focus on key diagnostic features – thus many pix are pretty, but superfluous!
4. Not all tree species are necessarily included in every book, which is essentially a minor point, but significant in certain cases.

Some additional concerns I have are:

1. There is no standardised list of SA common names (that in my mind may well assist with the seemingly frequent taxonomic changes e.g. *Rhus*, *Acacia*, etc.)
2. Some books certainly need to be peer-reviewed as I do find errors – this is surely the publisher’s responsibility.

Additionally, the identification of trees is fraught with complications because we use mostly vegetative morphological features that are notoriously difficult to describe as they can be variable, not just between trees of the same species but also on the same tree. The reason for this variability is well explained in van Wyk & van Wyk “How to Identify Trees” where they emphasise that plants are modular organisms. Another complication is that we are blessed with many hundreds of trees, shrubs and climbers (which have National Tree numbers), with some occurring over a wide range of environmental conditions that favour the expression of different morphological characteristics. One of the best examples being *Olea europaea* subsp. *africana* that can have leaves that are all 60-80 mm long while in some other trees all the leaves are tiny (<20 mm - a bonsai dream). In many bushveld trees there are morphologically different leaves on primary and/or secondary shoots that most authors ignore. Finally many trees exhibit different characteristics as they age: the bark of *Senegalia nigrescens* may have many knobbly prickles and smoothish bark when young, while in old trees the bark can be thick and ropey (minus the prickles). See two examples below.



Thus, what I am saying is that the task of tree book authors is mostly not easy because of how variable trees are morphologically. However, with a different approach and emphasis I submit that it is possible to make their certain identification more precise.

Thankfully for us there are a good number of trees that are readily identified, such as: palms, baobabs, the genus *Aloe*, and *Euphorbia*, and species like *Galpinia transvaalica* that is the only tree where the leaf mid-vein ends in a knob-like gland that is absolutely diagnostic. Another feature of trees is that we are able to divide the many species into smaller groups - using such characteristics as leaf arrangement, size and shape, and whether they are simple or compound. Van Wyk & van Wyk have used this most effectively and hence, from my involvement with people in-the-field, van Wyk is often the preferred guide. However, some of these so-called artificial groups still have a large number of species, such as leaves simple, alternate, margins entire - that have to be subdivided into smaller groups – and this is difficult. My suggestions for improvements still require work getting to the end-points, but if these end-points are radically improved then I submit ID issues will be greatly enhanced too.

The six species I am going to use as examples for how the end-points can be simplified to improve certainty of identification are: *Rhamnus prinoides*, a widely distributed, essentially forest marginal shrub; *Vachellia karroo*, possibly the most common, widespread and variable tree in SA; *Gymnosporia buxifolia*, another widespread and variable shrubby small tree often difficult to ID with certainty; *Kiggelaria africana*, a forest pioneer species that has the most variable of leaves of any SA tree; *Ficus petersii*, because it is one of the most widely cultivated and hence widely dispersed trees; and *Combretum apiculatum*, because it is common and widespread in many bushveld types and can be confused with others in the genus.

For each species I have summarized the end-point descriptions in the four chosen tree books in the same sequence – first Coates Palgrave, then Boon, Schmidt et al., Van wyk & van Wyk, and finally my “improved” end-point suggestion labelled NOVEL DEMO.

Hopefully readers of this article will agree that I have chosen good examples? So here goes



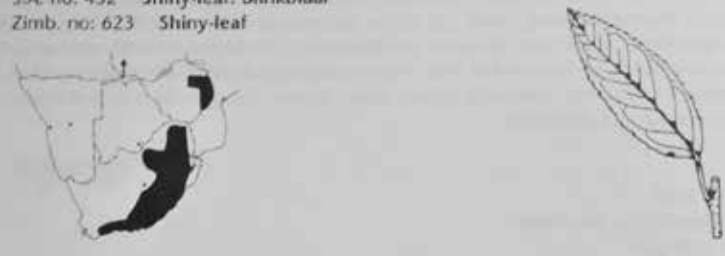
1. *Rhamnus prinoides*

NOTE: For each insert the box, with the blue outline (left in this insert), is a brief summary of the book's end-point text and illustrations. This is all you need to read as the rest of the illustration is to simply give you an idea of what is in the book.

Coates Palgrave:

~200 word generalised description, a map & leaf outline

Rhamnus prinoides L'Hér.
S.A. no: 452 Shiny-leaf. Blinkblaar
Zimb. no: 623 Shiny-leaf



Illustr. 176

A shrub, sometimes with a tendency to scramble, or a small tree which may reach 7 m in height; wide-spread and locally common at medium to high altitudes, along watercourses, in riverine forest and at the margins of evergreen forest. **Bark:** grey to brown, smooth with conspicuous lenticels, becoming dark brown with age, stems often bearing big and little leaves. **Leaves:** spirally arranged, elliptic to oblong-elliptic, 3-10 x 1,5-4 cm, very glossy dark green above, dull green below, often curling backwards as though the margin is too tight, midrib indented above with domatia, appearing as if the lateral veins are pinched into the midrib like a tuck, hairless, net-veining very distinct when held up to the light; apex rather narrowly tapering; base tapering to rounded; margin finely toothed or scalloped around the upper two-thirds; petiole 3-10 mm long. **Flowers:** greenish, small, inconspicuous, on slender stalks; in sparse, axillary groups or clusters of 2-10 (Oct.-Dec.). **Fruit:** ovoid to almost circular, about 5 mm in diameter, shiny red becoming dark red to black, edible, on slender stalks (Dec.-Jun.).


The wood is white, hard and heavy, but usually not large enough to make anything but small articles. A decoction of the decorticated root is taken as a blood purifier and to treat pneumonia; the leaves are applied as a liniment to simple sprains. Parts of the plant are widely favoured as a protective charm

Boon:

Rhamnus prinoides


RHAMNACEAE

Rhamnus - (Classical Gk name of various spiny shrubs) Shrubs or small trees. Leaves alternate or opposite, entire or toothed. Flowers usually bisexual, in axillary clusters. Fruit fleshy or dry drupe. ±125 spp. cosmop. 1 in s Afr.



Rhamnus prinoides - Glossy-leaf. blinkblaar (A); umnyenye (Z.X); umlindi, ulotile, ulunyenye, umamfobe (X); inyenyee (S); (*prinoides* - Gk *prinos* = a Holm Oak, like a Holm Oak) 452


Scrambling tree to 8m. Usually on moist forest margins & stream banks. Also in drier scrub. Mostly at higher altitude. WC to Ethiopia. **STEM** Bark smooth, grey-brown. Young stems with lenticels. **LVS** Spiralled, ovate to elliptic, 10-100 x 15-40mm, pointed, (tip ±hair-like), very shiny, dark green, midrib sunken, hair pockets in vein axils, finely serrate. Stalk to 10(-15)mm. **FL** Small, yellowish-green, on slender stalks. Nov-May(-Jul). **FR** Red to purplish-black, fleshy, edible, ±round, to ±6mm diam, on a long stalk. Jan-Aug. **GEN** Flowers attract insects. Birds eat fruit. Foodplant of Forest-king *Charaxes zephyrus* butterfly. Wood hard, whitish-yellow. Used medicinally & magically, e.g. for skin complaints & respiratory infections & as protection against lightning & evil spirits. Hedge plant, grown from seed. Frost resistant.



~150 word description, six "GREEN", a map & leaf outline + two generalised pix

Schmidt et al.:


Rhamnus prinoides



452 **Rhamnus prinoides** L'Hér. (= *R. celibifolus*, *R. pauciflorus*) Shiny-leaf, Dogwood, Blinkblaar (A), Inyenye (Sw) (*Rhamnus*: a tuft of branches; *prinoides*: from *prinos*, the Greek name for holly (*Ilex*), which has glossy leaves like *Rhamnus*)

Shrub or small tree to 4 m; on forest margins, in grassland and along stream banks at medium and high altitudes. **Main stem:** young branchlets pale brown, usually covered with lenticels; bark dark brown. **Leaves:** alternate; simple; ovate to elliptic (30-100 x 15-40 mm); apex tapering, base tapering to rounded, margin serrated and rolled under; colour very glossy green above, dull below; venation prominent and hairy pockets present in the vein axils below, otherwise hairless; petiole to 10 mm. **Flowers:** in clusters in the leaf axils; on stalks to 7 mm; green; ± 3 mm in diam. (Oct-Jan). **Fruit:** red to purple round drupe; ± 5 mm in diam.; on a slender fruit stalk (Nov-June).

Distribution: widespread throughout Africa; from the Western Cape, KwaZulu-Natal, eastern Zimbabwe to Ethiopia, and to Angola. **General:** Plants are used as a protective charm against lightning, as a good luck charm for hunters, to protect the user against evil spirits, and medicinally to treat pneumonia. Leaves are used to enhance the narcotic effects of alcohol. It is an attractive garden subject that is easily grown from seed.



~200 word description, four BOLD, a map & leaf outline, & pix showing upper & lower leaf-surfaces



Rhamnus prinoides

<100 words, ~15 BOLD, a map & stylized leaf arrangement & two generalized pix (fls & frts)


GROUP 9 Wild-plane group

1 *Rhamnus prinoides* | glossyleaf (SA); shinyleaf (Z); blinkblaar


SPRING-SUMMER | Scrambling shrub or small tree; occurring in forest margins, scrub forest and grassland, usually along stream banks. Leaves elliptic to oblong-elliptic, very glossy dark green above, paler green below, hairless; net-veining very distinct when held against the light, forming small rectangular areolae, usually with hair-tuft domatia in axils of principal lateral veins. Flowers in axillary groups, inconspicuous, greenish. Fruit a drupe, roundish, up to 8 mm in diameter, reddish to purple-black.

The root and leaves are used medicinally. A decorative garden plant, fairly frost-resistant. Larval food plant for the butterfly *Charmes xiphotes*.


R. usaddo, a rare bushveld species from rocky outcrops and termitaria in Zimbabwe, has smaller leaves (12-25 × 7-15 mm) and some of its branches are often spine-tipped.



SA452; 2572




1 *R. prinoides*: flowers




1 *R. prinoides*: fruit

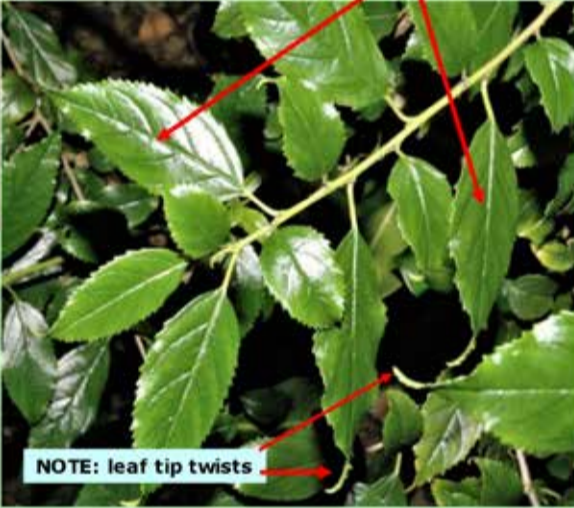
Rhamnus prinoides – novel demo

Shrub in forest marginal situations, with **remarkably glossy, finely serrated** alternate leaves, paler below and with pockets in axils of the veins; that are **DEEPLY SUNK**.



Leaf surface, upper (NOTE tiny bumps) & lower (NOTE tiny, hairy pockets).





NOTE: leaf tip twists

~40 words, ~6 BOLD, map, photo with inset showing pockets below & paler colour. **Arrows focussing on diagnostic features.**

To ID *R. prinoides* with certainty all the critical information is summarized above in two photographs; with lines drawing your attention to key diagnostic features AND minimal simple text.

NOTE: The distribution map has not been completed (and in the examples to follow there is also no distributions shown).

2. *Acacia karroo* (now *Vachellia karroo*)

Coates Palgrave:

Acacia karroo

Acacia karroo Hayne
S.A. no: 172 Sweet Thorn, Soetdoring
Zimb. no: 208 Sweet Thorn
A tree with a dense, rounded crown, often branching close to the ground and looking multi-stemmed, up to 15 m in height but mostly 3-5 m, sometimes shrub-like on deep clay soils; occurring west and south of the Drakensberg, in a wide range of climatic conditions from temperate to almost desert-like.

Illust. 60

~450 word description, a map & a leaf and leaflet sketch as well as a pod sketch.

No diagnostic features highlighted!

Additional Interesting notes.



Boon:

Acacia karroo

~150 word description, ~19 "GREEN", a map and leaf/pod sketch + five pix showing no diagnostic details of the morphology.

With additional notes on taxonomic complexities, etc.

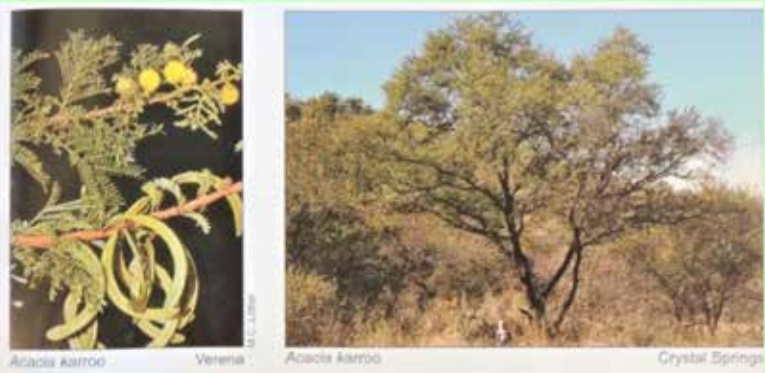


Schmidt et al.:

Acacia karroo

172 *Acacia karroo* Hayne Sweet Thorn, Soetdoring (A), siNga, Sitwetwe (Sw), Mookana, Mooka (NS), Munga (Ts), Muunga-ludzi (V). (*karroo*: from the Karoo)
Evergreen shrub or rounded tree, to 20 m; in a variety of habitats on different soil types. **Main stem:** dark brown or black, seldom rough on old trees; young branches hairless (except for Sekhukhuneland form). **Thorns:** in straight pairs. **Leaves:** often clustered on woody cushions; twice-compound; 2-6 pairs of pinnae, 5-15 pairs of leaflets, leaflets usually dark green (3.5-8 x 1-2 mm); leaflet apex rounded; usually hairless; petiole gland usually present, glands yellow- to reddish-brown; **petiole channeled above**, 5-18 mm long. **Flowers:** in bright yellow balls (Oct-Feb); calyx warty. **Fruit:** pale brown pods, straight to sickle-shaped, 50-105 x 5-7 mm, constricted between seeds, usually hairless. **Distribution:** the most common and widespread *Acacia* in South Africa; occurring in all nine provinces and northwards into Angola, Zambia and Malawi. **General:** Seeds roasted as a coffee substitute. Gum used in traditional medicine. *A. karroo* is a complex of often quite different forms. These forms are briefly mentioned below, and one form is given recognition as a full species (*A. natalia*).

~150 words, ~nine BOLD. Some ~diagnostic! A map & leaf outline with leaflet & thorn sketches. Generalised photos.



How tree book authors have failed





Acacia karroo

~150 words, ~16 BOLD, map & stylized leaf arrangement (~diagnostic?).
Five pix with little specific detail.

GROUP 42 Sweet thorn group

1 *Acacia karroo* (= *Vachellia karroo*) | sweet thorn; soetdoring

SPRING-SUMMER | Shrub to medium-sized tree, variable in shape but typically with a somewhat rounded crown; occurring in bushveld and grassland. Bark in mature trees coarse, blackish grey to black, with longitudinal fissures. Spines slender, white, often more prominent on young trees. Leaves with 3-5 pairs of pinnae, typically hairless; leaflets 3-20 pairs per pinna, apices rounded; petiolar gland usually present, additional glands often present at base of pinna pairs. Flowers in globose heads, bright yellow, borne at branch ends. Pods flat, brown, smooth, slightly constricted between seeds, sickle-shaped, dehiscent. A rather heterogeneous species with many different forms.

The tree is browsed by game. Bark used in tanning, yields a strong rope, produces an edible gum and is used in traditional medicine, as is the root. Seeds roasted and used as coffee substitute. The wood is hard and heavy, but prone to borer attack. Trees often proliferate in overgrazed areas, or when wild fires are suppressed. Inflorescences often transformed into conspicuous roundish galls by a rust fungus, *Ranzania murrainiana*. In turn, the caterpillars of at least 24 moth species are associated with these galls, a few of which feed only on these structures. ♀ 496

A. kaniwa (sandy coastal soils, Moputland; see p. 588) has greyish white bark with reddish longitudinal fissures and the inflorescences tend to be clustered on short branches among leaves rather than at branch ends. The pods are prominently constricted between the seeds. Often confused with *A. natalitia* (p. 588), which has leaves with 6-12 pinna pairs. Hybridizes with *A. tenuispina*, a multi-stemmed rhizomatous shrublet, which forms dense thickets on black turf soils, particularly on the Springbok Flats north of Priesba. Its shoots, leaves and pods are slimy, sticky, and covered with glands.

Acacia karroo - novel demo

Deciduous bushveld shrub or tree with alternate, **bipinnately compound primary & secondary leaves**; straight, white, paired thorns; yellow pom-pom flowers and curved pods **slightly constricted between seeds** that open when ripe.

~50 words, ~12 BOLD, map, photos with inset & arrows drawing attention to specific details. No bark as NOT diagnostic!

Primary leaves with ENFs. **Secondary leaves** in bunches & no ENFs. Pom-pom, bright yellow flowers. Ripe fruits and seeds - note galled flower terminally.

To ID *V. karroo* with certainty all the critical information is summarized above in six photographs; with lines and circles drawing your attention to key diagnostic features AND minimal simple text.

NOTE: EFN = extra-floral nectaries.

3. *Gymnosporia buxifolia*

Coates Palgrave:

Gymnosporia buxifolia

~190 words, generalized description, a map, some sketches of fruits, leaves and ?

Gymnosporia buxifolia (L.) Sisyziol.
[previously part of the *Maytenus heterophylla* complex]
S.A. no. 399 - Common Spikethorn, Gewone Pendoring
Zimb. no. 564 - Common Spikethorn

An evergreen shrub or small tree, usually 2-3 m in height but reaching 7-9 m at times; occurring in dry areas, along roads, forest fringes or thornveld; often a pioneer. **Bark:** light brown when young, becoming darker and flaking to very dark, rough, corky and fissured with age; young branches green becoming light brown, very often with insect galls which appear as swellings on the stem; spines sharp, slender to robust, 3-4 cm long or up to 10 cm. **Leaves:** in clusters on dwarf spur-branchlets, very occasionally on the greenish spines, or spirally arranged on new growth, obovate or narrowly obovate-lanceolate, usually 2.5-4.5 x 1-2.5 cm, sometimes up to 8 cm long, dull green, frequently paler green below, midrib indented above, lateral veins visible on both surfaces; apex rounded, notched; base tapering; margin finely and irregularly toothed around the upper half only; petiole 2-5 mm long. **Flowers:** whitish, 2-7 mm in diameter, in many-flowered heads up to 4 cm long, clustered on dwarf spur-branchlets, among the leaves, or occasionally on the spines; strongly scented (mainly Sept.-Apr., but flowering times differ in various areas). **Fruit:** a 3-lobed capsule, thinly leathery to semi-fleshy, smooth, more or less spherical, about 10 mm in diameter, greenish yellow becoming white-grey-brown when dry, wrinkled, tough (Jul.-Apr., but at almost all times of the year). **Seeds:** 1-4, reddish brown, glossy, with a thin yellow aril covering the lower half.

This is part of the former *Maytenus heterophylla* (Eckl. & Zeyh.) N. Robson complex and is similar to *G. maranguensis*, a more tropical species; the differences are discussed under that species. It is also similar to *Gymnosporia heterophylla* (Eckl. & Zeyh.) Loes., a shrub up to 1.5 m in height, often with an underground stem, occurring in rocky places in grassland associated with forest, from Grahamstown through the Eastern Cape into KwaZulu-Natal, Swaziland, Mpumalanga and the Limpopo Province; branchlets angular even when mature, sometimes with insect galls which appear as swellings on the stem; spines up to 4 cm, slender, angular near the tip; leaves very variable in size, smaller towards the ends of the branches, obovate, elliptic-lanceolate, stiffly leathery, dull green, net-veining distinct on the undersurface, margin with minute teeth that turn black, petiole no more than 2 mm long. *Gymnosporia buxifolia* differs in that it is mainly a small tree, often growing in disturbed areas such as roadsides or forest margins, and has round branches and thinly leathery leaves that are usually the same size on a plant.

Boon:

Gymnosporia buxifolia

~150 word description, ~15 "GREEN", map & outline of leaves. Four pix (one a close-up of the fruits).

Gymnosporia buxifolia [= *Maytenus heterophylla* in part] - Common Spikethorn: gewone pendoring (A); ingqwangane (Z); umqagoba (X); sibilangu lesimnyama (S); (*buxifolia* - leaves like a Common Box *Buxus sempervirens*) 399

Variable shrub or tree to 3(-7)m. **Pioneer** on forest margins, in wooded grassland & disturbed places. Widespread in s Afr. **STEM** Mature bark deeply fissured & corky. Crown spreading, terminal branches drooping. Branchlets slightly angular or flattened, soon become round, green when young. Brachyblasts short, often thickened with insect galls, hairless. Spines slender to robust, to 100mm, (with flowers or leaves). **LVS** Clustered or alternate, variable but obovate, 25-45(-80) x 8-20(-25)mm, apex rounded, base wedge-shaped, dull greyish-green, fairly thin, margin with unequal teeth in upper half, midrib sunken above, veins obvious above & below. Stalk to 5mm. **FL** In dense, many-flowered, axillary clusters, inflorescence stalk to 20mm. White to cream, unpleasantly scented. Aug-Nov. **FR** Capsules white to grey-brown when mature, round, wrinkled, leathery, scaly, to 7mm diam. Seeds 1-4, partly covered by a yellow aril. Nov-Jun. **GEN** Apparently replaced by *G. maranguensis* in trop Afr. Wood heavy, hard, strong, tough, close-grained & suitable for tool handles, engraving & turning. **SIMILAR** *G. woodii* is range restricted, smaller & usually lacks spines.

Schmidt et al.:

Gymnosporia buxifolia

~180 words, ~10 BOLD, map & leaf/twig sketch. Two pix of fls & fruits + leaves.

399 *Gymnosporia buxifolia* (L.) Sisyziol. Common Spikethorn, Gewone pendoring (A), sibilangu lesimnyama (Sw), (*buxifolia*: leaves similar to those of *Buxus*)

Small erect tree usually 3-4 m, but to 9 m, widely distributed in open veld, on rocky outcrops and along rivers in Highveld grasslands and forest margins, often pioneer in disturbed places. **Main stem:** branchlets grey to reddish or light brown; bark thick dark brown and rough, longitudinally fissured, often heavily striated when young, but this character is lost with maturity, armed with spines usually from 20-50 mm but may be to 100 mm long. **Leaves:** alternate or clustered, oblanceolate (15-60 x 4-22 mm); apex rounded to notched, base tapering; margin serrated; pale to dark green above and paler below, hairless; petiole 2-5 mm. **Flowers:** in flower heads in the leaf axils; small (± 6 mm in diam.); white; pungent smell (June-Mar). **Fruit:** brown or reddish 3-valved capsules; small, ± 3 mm in diam.; rough; seeds partially covered by yellow aril (Aug-Apr). **Distribution:** widespread throughout southern Africa and Zimbabwe. **General:** In growth form very similar to *G. glaucophylla*, the latter usually replacing it in the more arid regions. Used medicinally by the Zulu for chest complaints, and the bark is used as an enema to treat diarrhoea. Sap slightly toxic; handles made of the wood can irritate the skin. If large enough, the heavy close-grained wood is good for turning.





**Gymnosporia
buxifolia**

GROUP 8 Spikethorn group

CELASTRACEAE (see page 21)
2 *Gymnosporia buxifolia* (= *Maytenus heterophylla*, in part) | spikethorn; **gewone pendaring** (N); **pendaring** (SA)

AUTUMN-SPRING [Very variable shrub or small tree, usually with somewhat drooping branches; occurring in a wide range of habitats, often as a pioneer in disturbed places or along forest fringes. Branchlets green, **never angular or striate**. Spikes slender or robust, up to 100 mm long, with or without leaves. Leaves often in tufts, **obovate**, 25–45 × 10–20 mm, thinly leathery, dull green, **margin shallowly toothed, mainly in upper half**. Flowers in many-flowered axillary heads, **white, strongly and rather unpleasantly scented**. Fruit a **capsule, globose, about 5 mm in diameter, rough, white with reddish brown patches**; seeds reddish brown, partially covered by a **yellow aril**. The wood is hard, heavy, close-grained, strong, and suitable for tool handles, engraving and turnery. ¹⁰ **Kia**

~110 words, ~17 BOLD, a map, & stylized leaf arrangement.

Two pix one of fls and one of frts.

**Gymnosporia
buxifolia**
novel demo

Mostly a shrub, bushveld & forest margins, terminal twigs can be drooping, with **dull-green to blueish alternate lvs** (single 1° lvs on shoots of unlimited growth & **elliptic**, clustered 2° lvs on short shoots & **oblanceolate**). Bark on old plants can be **deeply fissured & corky**. With spines, white fls in dense clusters, frts **round, wrinkly**, seeds partly covered with **yellowish aril**.

1° lvs & 2° lvs. Both upper & lower surfaces (left & right).

~60 words, ~23 BOLD, map, photos of 1° & 2° lvs on twigs & 1° on spines (=short branches), frts & bark.
Arrows focussing the mind...

To ID *Gymnosporia buxifolia* with certainty all the critical information is summarized above in six photographs; with lines drawing your attention to key diagnostic features AND minimal simple text.

NOTE: This is a species that also has primary (10) and secondary (20) leaves that are different shapes, something significant that is not mentioned in the taxonomic literature.


4. *Kiggelaria africana*

Coates Palgrave:

Kiggelaria africana

~250 words, generalized description, a map & two leaf sketches – one margin entire and the other margin serrate.

4, KIGGELARIA L.
Kiggelaria africana L.
 S.A. noc 494 Wild-peach, Wildeperse
 Zimb. noc 728 Wild-peach



Illustr. 202

A small to medium-sized tree 4–13 m in height, occurring in forest, at forest margins, in wooded kloofs, on mountain grasslands, frequently among rocks. Bark pale grey, smooth, darkening with age and becoming flaky; young branches striated or grooved, yellowish brown, hairy. Leaves: simple, spirally arranged, often an occasional bright yellow leaf present, oblong to elliptic, 3.5–9 × 2–5 cm, fresh olive-green above, markedly paler, bluish green, yellowish or whitish and velvety below, lateral veins almost reaching the margin and then disappearing, net-veining horizontal between them, sometimes with domatia in the axis of the lateral veins; apex and base tapering to broadly so; margin entire or rather obscurely toothed particularly on young and coppice growth, wavy; petiole 0.5–2.5 cm long; without stipules. Flowers: pale yellow to greenish white, about 10 mm in diameter, axillary; sexes separate on different trees; female flowers solitary, on slender stalks about 1.5 cm long; male flowers in very sparse, few-branched heads; sepals 5, almost free; petals 5, each with a small, somewhat fleshy scale attached to the base; stamens 8–12, free, absent in female flowers; ovary 1-chambered, absent in male flowers (Aug–Jan.). Fruit: a spherical capsule 1–2 cm in diameter, rough, warty, grey-yellowish green, splitting into 5 valves (Feb.–Jul.). Seeds: about 10, 7 mm in diameter, black, smooth, completely enveloped in a sticky, bright orange-red coating.

Boon:

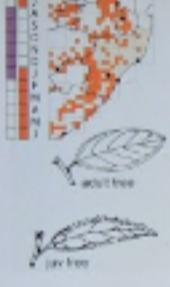

Kiggelaria africana

~160 word description, 15 "GREEN", a map & two leaf sketches (one serrate and one entire). Three pix.

Kiggelaria – (after Franz Kiggelaar (d. 1722), curator of Siegen Von Beaufort's garden in the Hague, where many Cape plants were grown) Grown from seed or cuttings, tolerates frost. Probably only 1 variable sp. 300 to 600 ft.

Kiggelaria africana - Wild-peach, wildeperse (A), umame, ukulu, usakulanyo (Z), umhokhoko, idingamun, urewak, umfanofa, umdama, ingondo (X), (africana – African) 454

Semi-deciduous tree to 22m. In forest & margins & on rock outcrops. Common at high altitude. Widespread in s.Afr. also to Kenya. **STEM** Straight. Bark smooth, pale brown, becoming flaky & fissured. Young branches hairy. **LVS** Spiralled, variable, elliptic, 15–120 × 15–50mm, soft to thin leathery, light to dark green, below bluish-grey, whitish, (green or velvety brown), hairy pockets in vein axils, veins raised below, margin entire or serrate. Coppice & juv leaves large, margin serrate, hairy or smooth. Stalk to 25mm. **FL** Small, yellow to pale green, singly or clustered, ♂ & ♀ on separate trees. Aug–Jan. **FR** Grey-green, rough, densely hairy, round, woody capsule to 20mm diam, splits into 4–5 parts. Seeds shiny, black, set in a sticky, bright, orange-red coating. Jan–Jul. **GBN** Fruit attracts birds. Foodplant of Garden Acacia *Acacia drepanolobium* & Battling Glider *Cymatobia ophiocoma* butterflies, caterpillars attract cuckoos. Used magically. Wood fairly hard, pink, used for furniture, floorboards & rafters.

374

375

Schmidt et al.:

Kiggelaria africana

~200 word description, ~15 BOLD, a map & two leaf sketches – one with entire margins & the other with serrate. Two pix, fls with leaf serrated & frts (closed & open) showing leaf under-surface whitish.

494 *Kiggelaria africana* L. Wild-peach, Wildeperse (A), Mphahlele (N), ukulu (Sw), Mufaha-shula (V), (Kiggelaria after Francois Kiggelaar (1640-1722) a Dutch botanist, africana: from Africa)

Small to medium-sized tree, 4–13 m, in Afriomontane forest and wooded gorges, and on rocky outcrops in mountain grassland, generally above 1 000 m. **Main stem** single or multi-stemmed; bark pale grey and smooth when young, becoming dark brown and flaky with age; young branches yellowish-brown, hairy. **Leaves**: alternate, oblong to elliptic (40–100 × 20–45 mm); margin entire or faintly serrated, coppice leaves often deeply serrated; colour variable, from fresh green on both surfaces to dark green above and distinctly paler below; leathery, densely covered in yellowish soft grey hairs when young, losing most hairs with age; **diagnostic pockets of hairs in axils of veins under leaves, also seen as bumps along main vein on upper-surface**; petiole to 12 mm long. **Flowers**: sexes separate on different trees; solitary on slender stalks ± 15 mm long (female flowers) or in drooping heads (male flowers) from axils of leaves; flowers ± 10 mm wide, yellow-green to greenish-white (Aug–Jan). **Fruit**: rough, warty, round capsule, 15–20 mm wide; greenish to yellowish-green when ripe, splitting into 4–5 sections to reveal black seeds covered in a bright orange-red sticky coating (Feb–July). **Distribution**: Western Cape to KwaZulu-Natal, Free State, Lesotho, Gauteng, Limpopo Province, Swaziland and north to East Africa. **General**: Wood is fairly hard, suitable for making implements and furniture, and provides a pink dye. Hydrocyanic acid has been isolated from the leaves; these are eaten by larvae of the butterflies *Acacia-ata* and *Cymatobia-ata*. Fruit is eaten by a wide variety of birds, making it a good choice for the garden. Grows well on the Highveld, although young trees need some protection from frost.




494

495





Kiggelaria africana

~140 words,
~20 BOLD,
a map &
stylized leaf
arrangement
(showing bi-
coloured).
Three
generalized
pix.




GROUP 7 Silver-oak group

KIGGELARIACEAE (see page 25)

1 *Kiggelaria africana* | wildpeach; wildeperske

WINTER-SPRING | Small to medium sized evergreen tree, crown usually with an occasional bright yellow leaf; sexes separate, on different plants; occurring in forest, wooded ravines or on rocky outcrops in grassland. Leaves oblong to elliptic, 35-90 x 20-50 mm, dark green above, bluish grey or grey-felted with domatia in axils of principal lateral veins below, sometimes hairless below, particularly in the juvenile leaves of some forms; margin entire or toothed, particularly in juvenile or coppice leaves. Flowers axillary, in drooping many-flowered inflorescences (male) or solitary (female), yellowish green. Fruit globose, yellowish green, densely covered with hairs, knobbly, splitting into 5 valves; seeds black with bright orange red covering.

The wood is pinkish brown, suitable as a general-purpose timber and formerly used for the spokes of wagon wheels. Larval food plant for the butterflies *Acrasa borea* (the plants are often completely defoliated by the caterpillars) and *Cymatoleucis alcinoda*. © 427

Kiggelaria africana

novel demo




Semi-deciduous, medium to big tree mostly forest & margins, old trees flaky, pale-brown bark, coppicing. Lvs alternate **VERY variable in size & shape** from **thinly green serrate to leathery, bi-coloured, entire**. Usually with **pockets** in veins below. Frts diagnostic – rough outside opening to a 5-point star with **bright orange covered seeds**.




~60 words, ~15 BOLD,
map, photos with arrows
indicating diagnostic
features.
No whole tree.
Arrows focussing
the eye...

To ID *Kiggelaria africana* with certainty all the critical information is summarized above in three photographs; with lines drawing your attention to key diagnostic features AND minimal simple text.

NOTE 1: This species has the most variable leaves of almost any other, not just in size and margins but also, texture. NOTE 2: Just recently in the Klein Karoo I saw a specimen where the tiny leaves (~20 mm long) that were tough, leathery and entire, showing the species has even more variable leaves!



5. *Ficus petersii*

Coates Palgrave

Ficus petersii

~100 word generalized description, a map & leaf outline.

Ficus petersii Warb.
 [included under the *F. natalensis* complex in Coates Palgrave (1983) *Trees of Southern Africa*, and included under the *F. thoningii* Blume complex by C.C. Berg]
 S.A. no: 48.1 Peters Fig. Peters-se-vy

A wide spreading tree with a rounded crown, usually about 8–12 m tall; occurring in dry and semi-deciduous woodland below 1000 m, sometimes on termite mounds. **Bark:** pale grey to cream, branches drooping, with a reddish underbark, particularly when wet. **Leaves:** rather pendulous, crowded at the ends of the branchlets, oblanceolate to obovate, 4–8 × 1.5–3 cm, green above, paler below, mature leaves hairless, the basal lateral veins not distinctly a pair; apex and base rounded to tapering; margin entire; petiole slender, 3–5 cm long, grooved. **Figs:** single or in pairs, without or with very short stalks, borne in the leaf axils, slightly elongated, up to 1,3 cm long, orange or reddish (Nov.–Mar.).


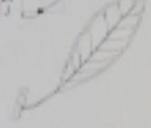
This species was named after Dr W.C.H. Peters, a German botanist and explorer who first collected it in Mozambique in June 1845. *Ficus petersii* differs from *F. burkei* in having narrower leaves with a narrowly tapering base and a longer petiole. Also, these leaves tend to be greyish green and hang down on the long petiole, and the branches have an orange tinge, particularly when wet. *Ficus petersii* is a tree of the lowveld and *F. burkei* usually grows at altitudes above 800–900 m.

Boon:

Ficus petersii

~160 word description, ~36 "GREEN", a map and leaf outline + three pix (one a close-up on the fruit).

Ficus petersii [= *F. thoningii* in sense of Pootley 1983 partly] - Peters Fig. Peters-vy (A); inkhokhoko (S); (petersii – discovered by Wilhelm C. H. Peters (1815–1883), German botanist & explorer who collected plants & animals in Moz (1843–1847)) 48.1

Evergreen or briefly deciduous tree to 20 × 30m. In woodland, usually below 1000m in SA, often on granite hills. SD to Kenya & equatorial Afr(?) **STEM** Strangler (rock splitter), later free-standing. Trunk ribbed in big trees. Bark smooth, fissured in old trees, pale grey to cream, underbark of branches orange, esp when wet. Branches droop. **LVS** Alternate, clustered at branchlet ends, pendulous, oblanceolate to obovate, 40–80 × 15–25mm, base narrow, apex broader or with a short pointed tip. Stalk slender, to 50mm long & 1.5mm diam. **FIGS** Stalkless (short stalk), smooth or sparsely hairy, attached to a saucer-shaped basal disc. In dense clusters on bare twigs, or singly or paired in leaf axils, to 15mm, orange to reddish when ripe. Nov–Mar (all yr). **GEN** Considered by some to be part of the *F. thoningii* complex. Good form tree. **SIMILAR** *F. burkei*, but *F. petersii* has narrower leaves with a longer, narrower, tapering base & a longer & more slender stalk. *F. burkei* is usually found above 1000m except in EC & KZN where it may grow nr the coast. At distance *F. petersii* has more pendulous, grey-green leaves than *F. burkei*.




Schmidt et al.:

Ficus petersii

~220 word description, ~30 BOLD, a map & leaf sketch & two pix.

Ficus petersii Warb. (= *F. thoningii* in part) - Peters Fig. Peters-se-vy; Widens Wungu (A); inkhokhoko (Sw); Muzimo (NS); Muzimo (V); (petersii: named after Dr W.C.H. Peters (1815–1883), German naturalist/explorer who visited Mozambique in 1843–1847)



Medium to large deciduous tree with rounded crown, to 20 m tall and ± 15 m wide, epiphytic at first (rarely a rock splitter), or free-standing; in deciduous woodland along the base of the escarpment (particularly in Sour Bushveld), often in areas of rocky granite hills. **Main stem:** straight, with pale grey, smooth bark, becoming darker and rougher with age, the young bark of the branches often with an orange tinge. **Leaves:** alternate, clustered towards the ends of the branches, both twigs and leaves typically pendulous, oblanceolate to obovate (40–80 × 15–25 mm), apex rounded to shortly acute, base narrowly tapering to obovate; apple-green to greyish-green, completely hairless at maturity; petiole long and slender, 30–50 mm, glabrous, grooved above. **Fruit (figs):** stalkless (rarely shortly stalked), borne singly or in pairs among the leaves but typically borne on bare twigs in dense clusters, roundish, minutely hairy to hairless, yellow-green to pinkish when ripe. **Involute (basal plate) present.** **Distribution:** Swaziland, Mpumalanga, Limpopo Province, Mozambique and northwards to Kenya and Zambia. **General:** This fig was recently included under *F. thoningii* but is usually regarded as being sufficiently distinctive to be treated as a separate species. Easily confused with *F. burkei*, but differs in its narrower, more obovate leaves which are borne on longer petioles and are characteristically drooping; also occurs at lower altitudes than *F. burkei*. The fruits are much sought-after by a wide range of birds and bats, and it is a fine, fast-growing tree for attracting birds to a wam garden.



How tree book authors have failed





Ficus petersii

~110 words, ~20 BOLD a map & stylized leaf arrangement + latex symbol. Three generalized pix.

GROUP 4 Fig group

1 *Ficus petersii* | Peter's fig; petersvy

ALL YEAR | Medium to large evergreen tree with dense, leafy, rather upright crown with drooping branches, often a strangler, occurring in low-altitude bushveld and woodland, often on termite mounds. Bark grey, often with orange tinge, rather smooth. Branchlets finely hairy. Leaves typically drooping, lamina often forming a pronounced elbow (angle) with petiole, usually oblanceolate to obovate, 40–80 × 15–30 mm, hairless; apex rounded to tapering; base rounded to tapering; principal lateral veins 6–11 on either side of midrib, basal pair inconspicuous; petiole slender, up to 50 mm long. Figs axillary on often bare twigs, up to 13 mm in diameter, essentially hairless, yellow-green or pinkish when ripe, sessile or very shortly stalked.

The figs are eaten by birds, bats and many other animals. ♀ 620
Compare *F. burkei* (p. 78) and *F. natalensis* (p. 84).

Ficus petersii
novel demo

Evergreen, large tree, spreading canopy, sometimes with aerial roots (can be a strangler), figs single or paired on short stalks on saucer-shaped basal disc usually in dense clusters on bare twigs, lvs drooping on long stalks.

~35 words, ~9 BOLD, map, photos with arrows focussing on diagnostic details.
Arrows focussing on features!

To ID *Ficus petersii* with certainty all the critical information is summarized above in three photographs; with lines drawing your attention to key diagnostic features AND minimal simple text. Because this is a widely cultivated species the leaves can show some variation and the possibility of hybrids cannot be totally ruled out!

6. *Combretum apiculatum*


Coates Palgrave:

Combretum apiculatum

~200 word generalized description, a map & leaf outline.

796 COMBRETACEAE

Combretum apiculatum Sond.
[*C. luthweini* Schinz; *C. kwelense* N.E.Br.]
S.A. no: 532 & 532.1 Red Bushwillow, Rooiboswieg
Zimb. no: 766 Glossy Combretum



A small to medium-sized tree 3–10 m in height, occasionally bushy and shrub-like; occurring at medium to low altitudes in dry open woodland and bushveld. **Bark:** grey to dark grey or brownish grey, smooth becoming scaly and rough with age. **Leaves:** narrowly to broadly obovate-elliptic, oblong or broadly ovate, 3–13 × 1.5–8 cm, mostly about 7 × 4 cm, thinly leathery, young leaves sticky and glutinous with a varnish-like shine, with or without hairs depending on the subspecies, 5–7 pairs of lateral veins, undersurface with hair-tuft domatia and horizontal interconnecting tertiary veins between the lateral veins (like the rungs of a ladder), with microscopic, transparent, thin-walled scales; apex abruptly attenuate, forming a slender tip, often twisted; base rounded to slightly lobed; margin entire, wavy; petiole up to 10 mm long. **Flowers:** yellow to creamy green, heavily scented, in axillary spikes up to 7 × 1.5 cm (Sept.–Feb.). **Fruit:** 4-winged, 2–3 × 1.5–2.5 cm, almost round to ovoid in outline, reddish brown, with a satiny sheen, on a stalk up to 9 mm long (Jan.–May; old fruit can be present until Oct.).

Subsp. apiculatum: occurring in dry deciduous woodland and bushveld on better-drained soils; leaves larger, usually more than 4.5 × 3 cm, and hairless except for occasional hairs on the midrib and hair-tuft domatia on the undersurface; fruit hairless.

Subsp. luthweini (Schinz) Exell: occurring mainly in mopane woodland; leaves smaller, usually about 4.5 × 3 cm, and sparsely to densely hairy particularly on the undersurface; fruit often hairy or velvety particularly on the body. This subspecies is somewhat similar to *C. atropurpureum*, but the latter has glaucous white scales on the mature leaves and its fruits are hairless.

The wood is hard and heavy, but the pieces are usually too small to be of any use. However, it is resistant to borers and termites and makes useful fencing posts. A decoction of the leaves has been used as a steam bath and as an emetic to relieve stomach disorders. As a treatment for conjunctivitis, ash from the burnt stem is mixed with white clay and water and the resulting paste is spread over the face several times.

Boon:

Combretum apiculatum

~120 word description ~35 "GREEN" a map & leaf outline + three pix

Combretum apiculatum subsp. *apiculatum* - Red Bushwillow
rooiboswieg (A), umbondwe (Z), umbondwe-onyama (Z.S), imBondvo-lemnyama, imbondvo-lemhlopho (S), (apiculatum – ending abruptly in a short, sharp point, refers to the leaves) 532.



Deciduous tree to 10m. Crown sparse. Common & dominant in places, on rocky hill-sides in dry bushveld. Zululand to Nam & trop E Afr. **STEM** Crooked, mostly single-stemmed, branches low down. Bark dark, cracked & flaking with age. **LVS** Opposite, variable, 30–130 × 15–75mm, tip pointed & twisted at right angles to leaf blade, thin or thinly leathery, olive-green, (slightly shiny), sticky & shiny when young, yellowish-green & veins raised below, hairs confined to tufts in vein axils & along main veins below, margin wavy. Stalk to 10mm. **FL** Creamy-yellow, heavily scented. In axillary spikes. Sep-Feb. **FR** 4-winged, around, to 30 × 25mm, yellowish-green to reddish-brown, shiny, sticky when young. Jan-May-Oct. **GEN** Flowers attract bees & ants. Brown-headed Parrots eat seeds, these apparently toxic to people. Leaves browsed by cattle & game. Foodplant of Striped Policeman *Coeliades forevati* butterfly. Leaves & ashes used medicinally. Tea may be brewed from leaves. Wood hard, fine-grained, with dark heart & pale sap wood, termite resistant, used for fence poles & fuel.




Combretum apiculatum - Mkhuzo
Combretum apiculatum - Mkhuzo
Combretum apiculatum

Schmidt et al.:


Combretum apiculatum

~180 word description, ~3 BOLD, a map & two leaf sketches and two pix.

532 **Combretum apiculatum** Sond. subsp. *apiculatum* Red Bushwillow
Rooiboswieg (A), Xokuzuba (Tat), Mkhuzuko (N5), umbondvo, imBondvo-lemhlopho (S), Masingitri (V) (apiculatum: ending abruptly in a short point, referring to the leaf apex)



Small to medium-sized deciduous tree, 3–9 m, widespread throughout Lowveld and Wood Bushveld. **Main stem:** mostly single, occasionally multi-stemmed; bark grey to dark blackish-grey or brownish grey, smooth when young, becoming lightly fissured with age. **Leaves:** opposite; narrowly to broadly obovate-elliptic, oblong or broadly ovate (50–110 × 20–65 mm); apex rounded with a short, pointed and **diagnostically twisted tip**; base rounded to slightly lobed; margin entire and wavy; dull to glossy green above, paler yellowish green below; sparsely hairy or hairless on both surfaces, often with rusty hairs along veins; pockets of hairs in axils of veins under leaf, thinly leathery; petiole to 10 mm long. **Flowers:** tiny, yellowish to creamy-green, in groups of 1–4 spikes, to 70 mm long, from axils of leaves (Sept.–Feb.). **Fruit:** fleshy large, 20–26 × 15–25 mm, 4-winged, dry and woody, yellowish-green with a glossy centre, turning reddish-brown when ripe (Jan–May). **Distribution:** KwaZulu-Natal, northern South Africa, Botswana, Namibia, Zimbabwe, Mozambique and north to tropical Africa. **General:** Leaves and stems used to treat stomach disorders and conjunctivitis. Leaves browsed by game. Wood very hard and heavy, making



Combretum apiculatum Obrijalad
Combretum apiculatum Mkhuzo

How tree book authors have failed



Van Wyk & van Wyk:

Combretum apiculatum

~150 words, with ~25 BOLD, a map & stylized leaf arrangement & two pix




GROUP 23

2 *Combretum apiculatum* subsp. *apiculatum* | kudubush (N); glossy bushwillow (Z); red bushwillow (SA); rosiboswillig

SPRING-SUMMER | Small to medium sized deciduous tree, with brownish red or golden yellow autumn colours; occurring in bushveld, often at low altitudes and in rocky places, on well drained soils. Leaves opposite or occasionally alternate or 3-whorled, elliptic to broadly obovate, up to 140 x 75 mm, hairless and often glutinous; apex sharply tapering and usually conspicuously twisted; base tapering to rounded; principal lateral veins 4-7 pairs, with hair-tuft domatia in axils; petiole up to 10 mm long. Flowers in axillary spikes up to 35 mm long, creamy yellow. Fruit 4-winged, 20-30 x 15-25 mm with wings up to 7 mm wide, glutinous when young, yellowish green, often tinged with red. Subsp. *leucostictum*, which occurs mainly in mopane veld, has leaves that are sparsely or densely hairy above and below.

Heartwood dark brown to black, hard, heavy, fine-grained and termite resistant, used for fencing posts and fuel (the coals can last up to 12 hours). Bark used for tanning leather. Leaves browsed by game, the fallen ones by cattle; also used medicinally. Seeds eaten by Brown-headed Parrots, but apparently poisonous to humans (incubation is symptomatic). Typical subspecies recorded as larval food plant for the butterfly *Colias forestan forestan*.





Subsp. *apiculatum* may be confused with *C. nelsonii* (p. 392), whose leaf apex is plane or only slightly twisted. From a distance the trees of subsp. *leucostictum* may be confused with *Phytolopha ulai* (Group 10, p. 224), particularly when clothed in their yellow autumn colours.

Combretum apiculatum novel demo

Deciduous small common bushveld tree, **wand-like twigs (erect & curved)**, lvs simple, sub-opposite, hairy pockets in axils of veins below & **leaf tip twisted through 90°**, frts 4-winged.

~28 words, ~8 BOLD, map, photos of diagnostic features (deciduous tree showing main branches & wand-like twigs). No bark as not diagnostic. Arrows focussing on features.

To ID *Combretum apiculatum* with certainty all the critical information is summarized above in four photographs; with lines drawing your attention to key diagnostic features AND minimal simple text.

NOTE: this species reasonably variable over its range. All Combretaceae can be identified by their "wand-like" twigs and also by some twigs being curved upwards – look for this feature and develop your JIZZ for them!

CONCLUSIONS

One thing that I have found to be disappointing in all tree books is the general poor quality of the photographs and the lack of a focus on key, diagnostic features in these photographs. No photographs have arrows, or circles, superimposed to draw your attention to critically important feature(s). With today's advanced cameras there is no excuse for having poor photographs, nor for not focussing the readers' attention on diagnostic features. Also, text descriptions are overly long with key features buried in this text (sometimes highlighted/bolded) and the language is not simple English. Today we know that many people want to read fewer words and rather study photographs more. Thus, if we want to grow the interest in our trees amongst citizen scientists then surely we need to better meet their requirements?

And finally, I would greatly appreciate any feed-back from you, so please simply email me your observations and critical comments so we can start a dialogue aimed at further improving our field guides.

Thank you!



How tree book authors have failed

deur Francois du Randt

Daar is sekerlik nie 'n beter manier om Covid teen te staan as 'n week in Maputaland se woude nie. Hartwig von Dürckheim, Francois du Randt en Faan Wolfaardt se beplande Massingir Pumbe sandveld dendrologiese tog na Mosambiek in Februarie 2021 val deur die mat omrede oom Cyril besluit dat hy die grense wil toemaak, maar dit laat ons nie keer om Maputaland binne te val nie.

Hartwig en Faan arriveer op 'n Vrydagmiddag en ons begin ons heerlike kuier met 'n glasie rooiwijn op my huis se stoep, met 'n onverbeterlike uitsig oor Valsbaai meer. Ons volg dit op met 'n braai, wat skrik vir niks, en gaan slaap taamlik lighoofdig! Beide Gautengers, of amper-Gautengers, slaap bra laat op Saterdagoggend, met klagtes van 'so dronk soos 'n Lord', en ander verskonings om te begin met aktiewe dendroliseering! Ek dink hulle voel maar net geintimideerd met die reuse biodiversiteit van Zululand en KwaZulu-Natal se bome. Ek laat hulle uitslaap, tenspyte van potensiële dendrologiese uitstappies! Ons amptelike Zululand boomuitstappie begin eintlik eers Donderdagmiddag in Ndumu Wildreservaat, maar ons gaan Woensdag opreis sodat ons nog meer bome elders kan kyk.

My eie plaas staan nie verniet bekend as Sit-en-Drink nie, en is maar 21 hektaar in grootte, net 61 meter bokant seespieël. Ons het egter 125 inheemse boomspesies op 21 hektaar, en ek het nog 1028 bome aangeplant in 'n arboretum sedert 1987. Al my aangeplante bome is nou weliswaar nie endemies tot ons sandveld nie – ons bly in "Tembe Sandy Bushveld" – maar hulle is almal inheems tot ons pragtige land. Daar staan nog omtrent 501 van my aangeplante bome, 'n sukses syfer van 48%. Ek moet sekerlik nie kla nie, ons het al deur die ergste droogte van droogtes gegaan!

Die 360 voëlspeesies in 'n radius van 10 kilometer kan jou net so goed besig hou, daarom verstaan ek nie hoekom party manne so laat slaap as ons voëltjies reeds om 4 vm begin roep nie. Nietemin, Hartwig en Faan is taamlik oorweldig deur die hordes 'nuwe' boomname. Dit is darem baie anders as by hulle in die Transvaal se bosveld. Vir my bly dit maar Transvaal, want al hierdie nuwe plekname is nog meer intimiderend.

Ons eerste uitstappie is bra hittig en die humiditeit is baie hoog. Daar word redelik reën voorspel vir die week, maar dit lyk darem nie te ernstig nie. Ons oorleef die hele week en uiteindelik is dit heel aangename weer. Ons plaas bied genoeg boomspesies vir my goeie boomvrinne uit die noorde en noordweste. Natuurlik kan ons elke aand vleisbraai en rooiwijn drink. Hoekom nie?

Ek kry darem die manne uit die bed op Sondag sodat ons Valsbaaipark, die reservaat as deel van Isimangaliso Vleiland Park, langs ons, kan binneval. Ek kan hulle bekend stel aan die mooiste woud in die wêreld – die sandwoud van Maputaland, en watter beter voorbeeld as Valsbaaipark is daar nie?

'n Stap op die Mpophomeni voetpad deur reuse oostelike (hoë koepel) sandwoud en 'n kykie na die 2½ miljoen jaar oue gryssand onder jou voete is darem pure plesier. Die massiewe *Newtonia hildebrandtii* (lebombo-wattel) bome is ongelooflik om te bekyk. Ek hou hulle gretig dop, want ek het heelwat bome gemerk en opgemeet oor die afgelope 33 jaar. Vanjaar is dit juis weer sulke tyd. Ons kyk na skaars sandwoud spesies soos *Psydrax fragrantissima* en *Berchemia* sp. nov (sand-ivoor), wat hopenlik binnekort 'n naam gaan kry. Ons kry darem 'n kansie om Lister's Point te besoek, waar die braaiplekke nou halflyf in die oorvol meer staan. Dit is nou 'n sig vir seer oë.



Faan en Hartwig by 'n reuse *Newtonia hildebrandtii* boom in Valsbaai

Ek kan my vriende bekend stel aan Duin Kordon 1 en Duin Kordon 2, rooi en wit sandduine respektiewelik. Die oorspronklike kusduine 5 miljoen en 2½ miljoen jaar, respektiewelik, gelede. 'n Ongelooflike geologiese geskiedenis, wat nou saamval met die oorsprong van hierdie fassinerende droë sandwoud. Natuurlik merk ons nie al die bome af op my Valsbaai (en plaas) boomlys nie, maar ons sien darem 129 van hierdie spesies. 'n Paar interessante spesies sluit in *Coffea racemosa*, *Combretum mkuzense*, *Cordyla africana*, *Ehretia obtusifolia*, *Harpephyllum caffrum*, *Heteropyxis natalensis*, *Hippobromus pauciflorus* en *Ozoroa engleri*.

Ons kom uiteindelik Maandag by Ongoye woud uit, 'n redelike entjie se ry vanaf Valsbaai. Ons moet dou voor dag vertrek ... Ek gee Hartwig en Faan elkeen 'n boomlys van Ongoye, en natuurlik is dit 'n baie gewigtige lys van spesies, ook naby aan 200 spesies, maar ons merk net 55 spesies af. Ek wil ook nie my vriende totaal ontspoor nie. Ons geniet ook die ongelooflike woud met sy grasveld en uitstekende woudrand. Ongoye is sekerlik die top woud in Zululand, 'n tipiese kus eskarp-woud ("scarp forest"). Daar is vier groot woude in Zululand, naamlik Ongoye, Ngome (Ntendeka), Nkandla en Entumeni-Dlinza. 'n Verdere groot woud in KZN is natuurlik Weza woud by Harding. Ek sê altyd: as 'n boomkyker, so ook 'n voëlliefhebber, nog nooit in Ongoye woud was nie, dan was hy nog nie in die beste woud van Suid-Afrika nie. Hierdie is natuurlik die tuiste van die groenhoutkapper ("green barbet") en die uitgestorwe *Encephalartos woodii*.



'n Gedeelte van Ongoye woud



'n Gedeelte van Ongoye woud

Ek weet nie wat ek vandag verkeerd gedoen het nie, maar ek moet Maandagaand saam met Hartwig en Faan pasta eet in plaas van sappige biefstuk! Ek doen dit maar uit ordentlikheid uit ...

Natuurlik word Dinsdag weer 'n rusdag. Ons kan regpak vir môre se groot 'ekspedisie'. Ons besluit om maar Ntendeka woud, Mkhuze wildtuin en Hluhluwe-iMfolozi wildtuine te laat oorsaak vir 'n volgende keer. Ons kan ook nie in Phinda wildtuin uitkom weens die Covid onnodighede nie.

Ons is 07h00 gereed om te vertrek op Woensdag. Ons reis noordwaarts en soek na die Pel's Fishing Owl by die Lower Mkhuzebrug. Ons ry bra stadig en kyk-kyk bome. Ons kry 'n pragtige *Galpinia transvaalica* boom in volle blom. Dit is 'n absolute sprokie.



Galpinia transvaalica in volle blom

Baya kamp, duskant Mbazwane, bestaan nie meer nie. Dit was die juweel kamp van Lake Sibaya – nog een van ons mede burgers se mislukkings! Die nat pad laat nie veel te wense oor, maar ons kom deur. Dit reën plek-plek, maar daar is genoeg geleentheid om bome te kyk in die duinewoud.



Duinewoud by Lake Sibaya

Interessante bome is *Turraea floribunda* (vol vruggies), *Acalypha glabrata*, *Teclea gerrardii* (nou herdoop na *Vepris trichocarpa*), ook vol vrugte, *Suregada africana*, *Drypetes natalensis*, *Diospyros inhacaensis*, *Empogona coriacea* (die eertydse *Tricalysia sonderiana*), *Ziziphus mucronata*, *Acacia* (nou ook herdoop na *Vachellia*) *kosiensis*, *Croton gratissimus*, *Callichilia orientalis* (wat ons pragtig uitsleutel met Dave Johnson se effektiewe blaarsleutel), *Celtis africana*, *Mimusops caffra*, *Mimusops obovata*, *Erythroxylon emarginatum*, *Psydrax obovata* (met sy gladde stam), *Erythrocca berberidea*, *Sideroxylon inerme*, *Allophylus africana*, *Acokanthera oblongifolia* (met vruggies en prominente melkerige lateks), *Ficus polita*, *Calodendron capense*, *Ekebergia capensis*, *Trichilia dregeana*, *Bridelia cathartica* subsp. *cathartica* (met sy blou onderste blaaroppervlakte), *Blighia unijugata*, *Ficus trichopoda*, *Clerodendrum glabrum* en *Inhambanella henriquesii*. Weereens maak ons nie 'n te lang, intensiewe boomlys nie.

Die agteruitgang by Lake Sibaya, wat onder groot druk verkeer weens die vars water onttrekking vir die agtergeblewenes, is duidelik sigbaar. Ek ry liefsvy. Ek gee my vriende 'n opsie om direk na Phelindaba te ry vanaf Mabibi ('n kortpad na Ndumu), of om aan te gaan met die kusroete via Black Rock na Manguzi, soos wat ons beplan het. Hartwig wil aanry op die kusroete, en ek stem saam. Arme Faan het geen keuse nie.

Heelwat swart werkers (meer as 200 van hulle in 'n regerings werkskeppingspoging) kap die pad met kapmesse oop en dit vergemaklik ons deurgaang na Lala Nek, maar daarna is die pad erg toegegroeï en krap dit maar seer aan die voertuie. Ons ry deur tipiese "wooded grassland", 'n ondergrondse woud, met onder andere *Garcinia livingstonei*, hordes *Encephalartos ferox*, *Parinari capensis*, *Gymnosporia markwardii*, *Eugenia albanensis*, *Aloe dewetii* en heelwat silwer *Vernonia natalensis* bossies, net soos by Maputo Elephant Reserwaat in Mosambiek.



'n Klompie *Encephalartos ferox* broodbome

Die son trek water en ons moet wikkell om darem foto's te neem by Black Rock. Hierna is daar 'n magdom 4x4 sandpaadjies, maar jy kies en keur die regte opsie, totdat ons by 'n nuwe geskraapte pad kom voor die Manguzi R22 teerpas. Ons moet wikkell om weswaarts te ry, verby Tembe se hek, na Ndumu. Die pad is vol verkeer, beeste en mense – hordes van hulle, 'n totale bevolkingsontplofing.

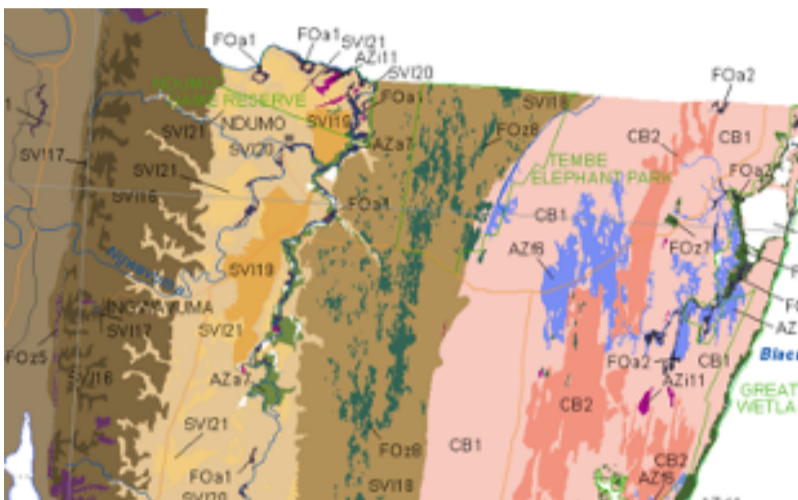
Ons is darem betyds by Ndumu se kampplek, ons huisvesting vir vier nagte. Ons moet wikkell om tente op te slaan voor die dreigende reëndruppels.

Dit is lekker om in 'n groot tent te slaap, met 'n kragpunt en elektriese waaier, en muskiet-vry – nogtans was dit nooit baie warm in Ndumu in Februarie nie! Ons geniet Donderdagoggend weer 'n rusoggend, gelukkig saam met 'n donderstorm wat veroorsaak dat ons onder dak sit, broodjies eet en rooiwyn drink – 'n nagmaal om die reën te vier, waarna ons almal 'n agtermiddag slapie in die tent onderneem in Ndumu, sonder dat die hittige son jou uit die tent braai!





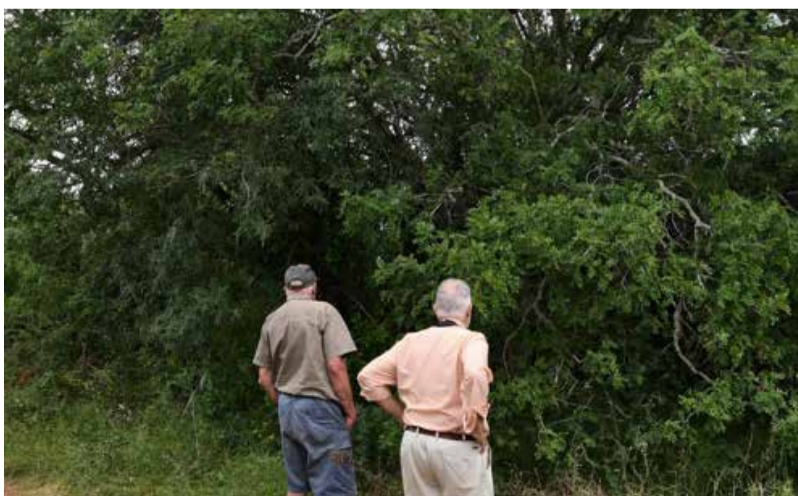
Die eertydse Ndumu kamp in 1982



Die vegetasie eenhede rondom Ndumu en Tembe (in Engels), volgens Mucina & Rutherford is as volg:

- FOz5 Scarp Forest
- FOz8 Sand Forest
- SVI16 Southern Lebombo Bushveld
- SVI17 Lebombo Summit Sourveld
- SVI20 Western Maputaland Clay Bushveld
- SVI19 Western Maputaland Sandy Bushveld
- SVI18 Tembe Sandy Bushveld (Pallid sand bushveld)
- CB1 Maputaland Coastal Belt
- CB2 Maputaland Wooded Grassland

Ons gaan laat middag na die voël skuiling (Ezulwini Hide, by Nyamithi Pan) – ons doen dit so stop-stop, by elke interessante boom. Ons boomlys groei vinnig. Theo Mostert en Suzie Raymond jaag ons van agter in en ons dendrologiese groepie groei vinnig. Ons moet stap na die "hide" en die voetpad is bra toegegroe. Die skuiling se toegang begin ook omval en die hele skuiling lyk bra wankelrig. Dit is in dringende nood vir herstelwerk. Die pan is egter geweldig vol. Ek het nog nooit soveel water daar gesien nie. Daar is hordes watervoëls.



Dendroloë in Ndumu wildtuin

Ons 'amptelike' dendrologiese uitstappie met 5 dendroloë, begin op Vrydag in Tembe Elephant Park. Dit is 40 kilometer se ry tussen Ndumu kamp en Tembe se ingangshek en daar is 'n intense bevolkingsontploffing in hierdie area, veral buitekant Ndumu, by die Pongolarivierbrug en die ou pont area, en buitekant Tembe. Nog meer verontrusbarend is die hordes hope gesnyde inheemse hout van *Newtonia hildebrandtii* (mfomoti) en *Cleistanthus schlechteri* (mzithi) wat langs die teerpad te koop aangebied word, nie net as braaihout nie, maar in groter vorms, planke en balke! Dit is duidelik dat die sandwoud op grootskaal verwoes word! Ek skat dat daar geen inheemse woud hier meer oor sal wees in nie-bewaringsgebiede oor vyf jaar nie! Die sandwoud is letterlik op die rand van uitsterwing, veral as ons gewone mense niks daaraan doen nie!



Onwettige hout versameling

Ons word vergesel deur Catharine Hanekom, die ekoloog van Tembe Elephant Park, Leonard Muller en Chris, een van die Wildlife Act reguleerders. Hulle kom saam met ons om ons te beskerm teen 'n paar aggressiewe olifante. Hulle doen geweldig baie moeite sodat ons net bome kan kyk!



Tembe se watertoring



Allelopatiese grasstrate in die sandwoud



Ons roete is vooraf beplan en begin by die water uitkyktoring, gevolg deur die hoof sandwoud ("Eastern type tall sand forest") met sy raar spesies, die allelopatiese grasstrate langs die sandwoud, en verder noordwaarts op met die wesgrens tot teenaan die Mosambiek grens, waar ons gaan kyk na *Combretum patelliforme* en *Mimusops caffra* bome.



Combretum patelliforme

In die hoof sandwoud sien ons pragtige sandwoud bome, soos *Newtonia hildebrandtii*, *Cleistanthus schlechteri*, *Erythrophleum lasianthum*, *Dialium schlechteri*, *Hymenocardia ulmoides*, *Pteleopsis myrtifolia*, *Cola dorrii* en *Cassipourea mossambicensis*. Interessante byvoegings is *Drypetes arguta*, *Drypetes natalensis* en môre ook *Lannea antiscorbutica*.

Oppad terug ry ons deur die sentrale en oostelike gedeeltes met "Tembe Sandy Bushveld", "Alluvial Bushveld" en "Wooded Grassland" met sy pragtige "geoxylic suffrutices". Ons sien ook *Coffea racemosa*. Ons sien nie hierdie keer die twee skaars CREW plante, *Warneckea parvifolia* en *Schlechterina mitostemmatoides*, nie. Ons het hulle in Januarie 2020 gesien. Ons keer terug via Ponweni en 'n reuse *Azelia quanzensis*, wat ons later opmeet. Daar is ook 'n groot *Newtonia hildebrandtii* in die sandwoud, wat ek graag wil opmeet, maar 'n eensame olifantbul laat ons nie naby die boom toe nie! Vandag word 'n taamlike uitgerekte sneldendrologiese uitstappie, maar ons wou graag die noordgrens besoek terwille van die twee skaars boomspeesies. Ons sal môre se Tembe besoek aansienlik inkrimp, en meer in die suide konsentreer.

Met ons terugkeer in Ndumu sluit die res van ons naweek groep by ons aan, Magda, Kevin, John en Marie-Claire, John Phipson, Jocelyn en Chris. Ons braai almal saam en geniet 'n heerlike sosiale aandjie in die lapa. Natuurlik geniet ons ook 'n paar glase rooiwijn en is ons baie gelukkig om nie nat te reën nie.

Ons herhaal Saterdag 'n gedeelte van ons Tembe boomuitstappie en daar is heelwat nuwelinge om bome te leer. Ons begin weer by die watertoring, waar ons besin oor die geologie en die tipes sandwoude, en besoek die interessante grasveld direk aanliggend tot die sandwoud.



Dendroloë in 'n grasstraat by Tembe



Dendroloë in die hoof sandwoud

Net soos wat die sandwoud krities skaars geword het, so is die ondergrondse boomhabitat ("wooded grassland") met sy interessante plante, soos *Eugenia capensis* subsp. *mossambicensis*, *Diospyros galpinii*, *Parinari capensis*, en so meer. Die 'ondergrondse woud' is fassinerend, dog nie so ryk aan biodiversiteit soos in die Ozabeni area nie.



"Wooded grassland"



Eugenia capensis subsp. *mossambicensis*

Ons stop vir middagete piekniek by Manungu piekniekplek. Hier kry ons 'n pragtige *Lagynias lasiantha* (nou herdoop as *Vangueria lasiantha*), met blomme en vrugte. Ons reis suidwaarts deur kleigrond bosveld en sien selfs 'n swart renoster. Weens die diversiteit van ons groep kyk ons somer ook grasse, goggas, vlinders en voëls. Een endemiese vlinder in die sandwoud is die Mamba Swordtail (*Graphium colonna*).



Vangueria lasiantha

Terug in Ndumu neem party van ons die swembad oor, terwyl party begin met die kampvuur. Ons het egter nog nie genoeg gehad nie, en besoek weer die voëlskuiling by Nyamithi pan. Oppad soontoe wys ek my groep weer interessante bome, soos *Strychnos spinosa* spesie B (die Maputaland Strychnos), wat baie beslis anders lyk in die sandveld, *Strychnos decussata*, *Gardenia cornuta* en 'n interessante ranker wat ons eers later uitken as *Adenia hastata*. Ons geniet die hordes watervoëls by die skuiling, asook die mooi sononder en wolkeprag.



Strychnos decussata



Nyamithi Pan, Ndumu



Ons kyk darem ook voëls by Nyamithi Pan

Natuurlik is die sosiale gedeelte van 'n dendrologiese uitstappie baie belangrik. Dit is tyd om vleis te braai, wyn te drink en nonsens te praat. Ek sal liewers nie die onderwerpe van ons gesprekke opnoem nie.

Ons besluit om Sondagoggend 'n korter uitstappie in Ndumu te onderneem, omrede sommige van ons lede vroeg reeds huiswaarts wil keer. Ons besoek die 5 miljoen jaar-oue rooi duin (Duin Kordon 1) met interessante bome, soos *Combretum zeyheri*, *Albizia anthelminitica*, *Albizia petersiana* subsp. *evansii* in blom, *Albizia forbesii*, *Croton gratissimus*, *Vitex patula*, *Empogona junodii* (met twee naamsveranderinge vanaf *Tricalysia junodii* var. *kirkii* en *Empogona kirkii* var. *junodii* – niemand kan besluit wat dit nou is nie!) en *Combretum mkuzense*. Uiteindelik kan ek die twee *Combretum* spesies langs mekaar vergelyk en afneem.



Duin Kordon 1, Ndumu



Die verskille tussen *Combretum mkuzense* (links) en *Combretum zeyheri* (regs)

Ons merk af'n totaal van 142 bome op ons oorspronklike Ndumu-Tembe boomlys, maar ek voeg nog 41 spesies by. Ons sien fisies dus 183 boomspesies in Ndumu en Tembe reservate saam. Saam met ons ander spesielyste sien ons dus 410 boomspesies oor die week – en ons het nie alles opgeskryf nie! Dit is goeie werk!

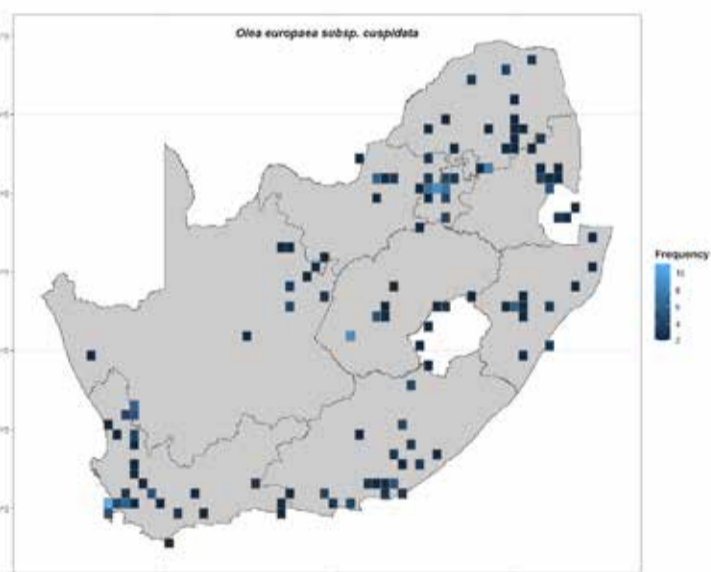
Ons mis uit met twee belangrike spesies, wat ons nie raaksien nie, naamlik *Rhigozum zambesiaceum* (gewoonlik vol geel blomme in die Lente) en die uiters raar *Rytigynia celastroides* var. *australis*, 'n Rubiaceae met blink blare, met kenmerkende domatia en ronde, geribde vruggies op lang steeltjies. Ons sal volgende keer bietjie harder daarvoor soek.

Dr. Theunis Morgenthal

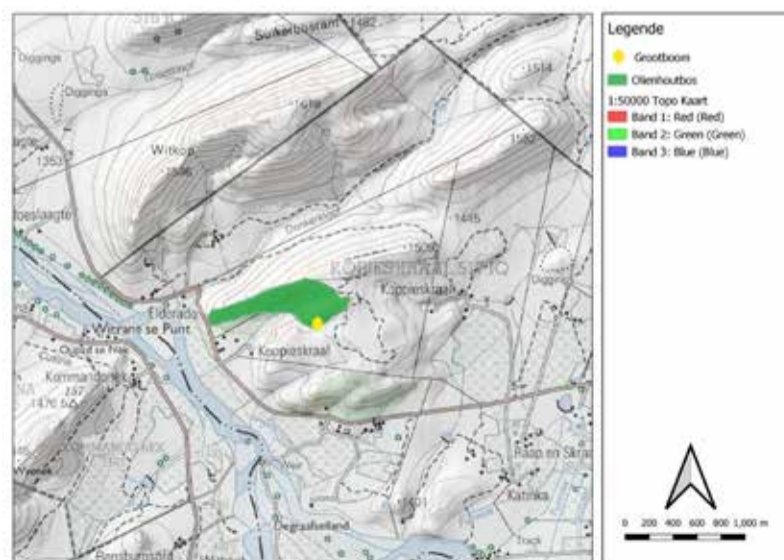
Die olienhout, *Olea europaea* subsp. *africana* is een van Suid-Afrika se mees algemene bome en kom wydverspreid voor in al nege provinsies (Figuur 1). Die medisinale gebruike van die boom is goed gedokumenteer (Long *et al*, 2010). Omdat olienhout oor die algemeen 'n medium groot boom word is die hout nie voldoende geskik vir grootskaalse meubelvervaardiging nie (Van Wyk & Gericke, 2000). Die wortels, stam en groter takke is uitstekend vir die maak van kleiner meubels, ornamente en huishoudelike items.

Palgrave (2002) beskryf *Olea europaea* subsp. *africana* as 'n medium grootte boom wat to 18 m hoog kan word. In sekere voorkeur habitatte is dit geneig om dominant te raak. Die olienhoutbos op die plaas Kopjeskraal in die Vredefortkoepel naby Parys in die Vrystaat is 'n voorbeeld hiervan (Figuur 2).

In 1982 was daar 'n paar artikels en skrywes van Daan Conroy, dr. Fried von Breitenbach en ene Zietzman om die Kopjeskraalolienhoutbos en die groot olienhout in die bos as nasionale gedenkwaardigheid te oorweeg. In daardie stadium het dr. Fried von Breitenbach nie die aansoek ondersteun nie omdat hy van mening was dat die boom nie groot genoeg is nie en die voorkoms van olienhoutbosse ook nie uniek genoeg is om spesifiek te bewaar nie. In 2021 het Gustav Engelbrecht van die Noordwes Departement van Ekonomiese Ontwikkeling, Omgewingsake, Natuurbewaring en Toerisme (DEDECT) se Vredefort Koepel bestuurskantoor versoek dat ons die saak heroorweeg en die gebied weer moet besoek om die boom se lokaliteit te bevestig.



Figuur 1. *Olea europaea* subsp. *africana* verspreidingskaart (SANBI 2021)



Figuur 2. Kaart van die plaas Kopjeskraal wat die omvang van die olienhoutbos aandui

'n Besoek aan die olienhoutbos is gereël as deel van 'n boomuitstappie van die Magaliestak van die Dendrologiese Vereniging. Intussen het die plaas Kopjeskraal 'n paar keer van eienaar verwissel. Die huidige eienaar, Ross Cameron, was vriendelik genoeg om so 'n besoek te ondersteun. Die uitstappie na die plaas Kopjeskraal het op 13 Maart 2021 plaasgevind. Die besoek aan die plaas is meegemaak deur prof. Sarel Cilliers, prof. Klaus Kellneren studente van Noordwes-Universiteit

Department Plantkunde, lede van die Magaliestak asook Gustav Engelbrecht. Ross Cameron het die besoek gelei en moontlike lokaliteite uitgewys waar die boom kon staan. Cameron was ook onseker oor die bestaan van die groot olienhout.

Tydens die besoek is daar 'n paar bome oorweeg as moontlike kandidate. Die grootste olienhout is gevind op die oewer van 'n stroompie aan die suidekant van die kloof (-26.8828; 27.3734, hoogte bo seevlak 1437). Die boom het drie stamme van 2 920 mm, 2 000 mm en 750 mm op 1.4 m (Figure 3 en 4). Die deursnee op grondvlak voor die boom vertak is 3 600 mm. Die noord-suid kroon deursnee is 13.5 m en die oos-wes kroon deursnee is 21.5 m. Die geskatte hoogte met 'n Haglōf ECIID klinometer is 13.5 m.

Vir meerstammige spesies word die totale boom omtrek deur die vierkantswortel van die som van die mag van die boom omtrek gedeel deur π (3.14) bepaal (Formule 1).

Die grootte indeks neem in ag die gesamentlike omtrek van die stamme, hoogte en die deursnee van die kroon (Formule 2). Die boom grootte indeks word bereken as 60.6. Die spesifieke olienhout boom word dus gereken as 'n medium grootte boom (Indeks 40 - 120).



Figuur 3. 'n Foto van die grootste olienhoutboom wat opgemeet is



Formule 1: Gesamentlike boom omtrek

$$\text{Boom omtrek} = \sqrt{(\text{Omtrek1}/\pi)^2 + (\text{Omtrek2}/\pi)^2 + (\text{Omtrek3}/\pi)^2}$$

$$\text{Boom omtrek} = \sqrt{0.864 + 0.405 + 0.057}$$

$$\text{Boom omtrek} = 1.1516\text{m}$$

Formule 2: Berekening van die grootte indeks vir 'n boom

$$\text{Grootte indeks} = \sqrt{\text{Omtrek}} \times h \times \sqrt{(D1 + D2)/2}$$

$$\text{Grootte indeks} = \sqrt{1.151} \times 13.5 \times \sqrt{(13.5 + 21.5)/2}$$

$$\text{Grootte indeks} = 60.6$$

DIE OLIEHOUTBOS

Die olienhoutbos kom langs 'n suidelike kwartsietrant voor (Figuur 5). Kartering van die olienhoutbos dui aan dat dit ongeveer 28 ha groot is (Figuur 2). Die olienhoutbos is redelik spesies arm en word gedomineer deur olienhout. Ander bome wat nogal prominent is, is *Buddleja saligna*, witolienhout. Die grootste verskeidenheid boomspesies kom langs die stroomoewer voor aan die onderkant van die olienhoutbos. Soos reeds genoem is die grootste boom langs die stroom gevind alhoewel die oorblyfsels van 'n groter boom, dalk ook 'n olienhout, in die bos opgemerk is.

FINALE KOMMENTAAR

Alhoewel die Vredefortkoepel nie dieselfde verskeidenheid bome het as die nabygeleë Magaliesberge nie is dit tog uniek tov die omliggende omgewing. Daar word 55 boomspesies aangeteken in die Vredefortkoepel. Alhoewel die olienhoutbos besonders is, is dit nie eiesoortig nie aangesien sulke bosse onder meer in die Oos-Kaap, Vrystaat en ander plekke voorkom. Die opgemete olienhoutboom is ook aansienlik kleiner as die afmetings wat Coates Palgrave aangee vir die spesie. Dat dit in die konteks van die omgewing besonders is, is tog waar. In vergelyking met ander olienhoutbome wat opgemeet is en in die Nasionale Register van Grootbome in Suid-Afrika® (NRGBSA®) opgeneem is, is hierdie nie die grootste olienhout wat nog opgemeet is nie (Red)

SPECIES	INDEX VALUE	OWNER	LOCALITY
<i>Olea europaea</i> subsp. <i>africana</i>	80	Ds A M J D Alberts	Schaaphok, 279 K.R., dist. Mokopane (Potgietersrus)
<i>Olea europaea</i> subsp. <i>africana</i>	68	Sappersrust Country Club (Pty.) Ltd.	Grootplaas, De Rust, dist. Brits
<i>Olea europaea</i> subsp. <i>africana</i>	67	Sappersrust Country Club (Pty.) Ltd.	Grootplaas, De Rust, dist. Brits
<i>Olea europaea</i> subsp. <i>africana</i>	61	Dept Water Affairs & Forestry	Kromellenboogdam, dist. Marico
<i>Olea europaea</i> subsp. <i>africana</i>	53	J Voorendyk	Malopo Oog, dist. Lichtenburg
<i>Olea europaea</i> subsp. <i>africana</i>	53	E Lombaard	Rietvaley, dist. Mokopane (Potgietersrus)

Uittreksel van olienhoutbome opgeneem in die NRGBSA® met 'n groter Indeks waarde as die Vredefort olienhout



Figuur 4. Die olienhout in vergelyking met Prof Sarel Cilliers (foto geneem deur Gustav Engelbrecht)



Figuur 5. Foto van die olienhoutbos en omgewing geneem van die uitkykdek in 'n westelike rigting

BEDANKINGS

Die besoek sou nie moontlik gewees het sonder die ondersteuning van almal wat die uitstappie gedurende 13 Maart 2021 meegemaak het nie. Dankie aan Gustav Engelbrecht wat die saak weer onder die Dendrologiese Vereniging se aandag gebring het en vir die huidige eienaar Ross Cameron wat ons die bos gewys het en goedgegunstelik aan ons toegang gegee het.

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DEVELOPING A SOUND ECOLOGICAL BASIS FOR SUSTAINABLE FUEL WOOD AND POLE HARVESTING FROM TERMINALIA AND MOPANE WOODLANDS, LIMPOPO PROVINCE, SOUTH AFRICA

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Prepared for DENDRON

BACKGROUND

South Africa has a wide range of natural woody ecosystems, mainly fire-adapted bushveld/woodland within a fire-prone environment with a balanced composition between trees and grasses/herbs. They provide a wide range of natural resources and services to a wide range of users in society. Poor rural and urban societies highly depend on such woody resources for construction poles and fuel wood and other values and services, and for grazing of wildlife and livestock. One of the consequences of current land use practices, such as infrastructure development, agriculture and forestry development, over-grazing, and conservative land management practices in protected areas, is that fire regimes are changed (towards cooler or no fires). The cover of woody growth of indigenous tree and shrub species is increasing, generally considered as bush encroachment, in many of the bushveld/woodland areas in Northwest, Limpopo and Mpumalanga Provinces. This causes a loss of the herbaceous diversity and various important values and services, including fodder for livestock and wildlife. Some areas described as Central Bushveld with information on species composition and vegetation structure (Rutherford et al., 2006), currently do not resemble such descriptions because of the amount of tree and other woody cover to the detriment of the herbaceous component and certain tree species. Harvesting of firewood and construction poles from such areas by people from local villages is often considered as degradation when they maintain the woody/herbaceous balances in many places. Some mining companies expressed an interest to use the wood of Karee (*Searsia lancea*) as biofuel in the smelting of aluminum from the ore (Geldenhuys 2017). Such woody growth does sequester carbon, and many of the woody species are also important in the livelihood of rural societies. Often there is conflict between continued use of such resources and maintenance of their genetic diversity, their productivity, and their diverse use value (including environmental services). Two contrasting approaches are followed in harvesting of resources from natural woody systems. They are either cleared for commercial development because of the perception that commercial agriculture, forestry, mining, urban development, etc. are more useful to society. Near rural villages, any developing stem is cut for fuel wood and/or poles, with no development of stems into trees. The other approach is to protect these natural woody systems because the perception is that we are losing important diversity and environmental services, such as climate change mitigation via the loss of stocks and sequestration of carbon that happen in these woody systems.

In recent years, a different ecologically based concept was developed for sustainable use of woody resources from the bushveld/woodland resources of southern Africa, through observation, time series studies and experimental harvesting by thinning intensity in stand development stages in Miombo

woodland in Mozambique (Geldenhuys, et al. 2017) and in Zambian Copperbelt (Syampungani et al., 2016), and in Undifferentiated woodland in Zimbabwe (Chichinye et al., 2019). These studies showed that the perceived bad practices of slash-and-burn agriculture, charcoal production, and fuel wood and pole harvesting, resulted in faster recovery and maintenance of biodiversity, productivity and use value than the perceived good practices of single-tree timber harvesting and protection (with lowest plant diversity and productivity). Mature woodland stands in all areas are moribund systems with no regeneration of the canopy trees; clear-felling them stimulate productive and diverse regeneration of the canopy species (Syampungani *et al.*, 2016; Geldenhuys, 2014). Initial studies were done with Karee (*Searsia [Rhus] lancea*) in Marikana Thornveld in the Brits-Marikana area, North-West Province (Geldenhuys, 2017a; Maru, 2018; Tegegne, 2018; Kruger, 2020). The Karee study showed how species diversity of the woody component increases from sparse to dense Karee stands, how much wood (stem volume and total biomass) could be harvested from sparse and dense Karee-dominated stands with 50% and 100% cutting of stems, and how fast sprouting on the stumps develop.

The rationale used in these studies is that forests, woodlands, and bushveld over time have developed specific adaptations to various degrees of natural disturbances at various scales, from individuals, populations of species growing in communities of different forest species, and at the level of forest ecosystems (Geldenhuys 2010). The woodlands of southern Africa function with a relatively long dry season and a shorter rainy season. Their physiology underlying their storage of resources produced through photosynthesis in the roots, stem and/or bark during the rainy season and relative dormancy during the dry season could be important to consider in developing sustainable harvesting systems. At the start of the rainy season, the stored reserves are mobilized to stimulate new growth. The expectation is that if trees are cut during the early rainy season, the growth response will be slow; most stored reserves had been used to stimulate new leaf development and growth. Cutting of trees during the dry season would stimulate strong growth in a few sprouting shoots that would use the stored reserves more effectively. The Karee study showed that cutting of tree stems during the dry period produced much stronger sprouting shoots than stems cut during the early rainy season (Tegegne, 2018). Most of the tree species of the broad-leaved woodlands have some form of sprouting from the base of stems, rootstocks, or roots, most likely as an adaptation to non-selective browsing by fire, and selective browsing by animals and people. Most woodland tree species are intolerant of shade and do not regenerate productively when selectively cut as single trees. With stem-cutting in large gaps, they initially develop a



bushy growth habit of multiple sprouting shoots. Resource use simulates some of such natural disturbances at various scales and should be aligned with relevant disturbances.

Four general stand development stages have been identified for the woodlands in southern Africa based on the general development of plants in terms of tree height, stems per tree and stem diameter, and relate to the use value of the stems in each stage for firewood and poles of different dimensions (Geldenhuys, 2014, 2017; Tegegne, 2018):

Stage 1: Early development stage (regeneration) after cutting of mature stands for timber, fuel wood and poles, or after abandoning fields of slash-and-burn agriculture

or charcoal production. The stand is composed of short (<2 m height) plants, which are often multi-stemmed.

Stage 2: Intermediate development stage with many young pole-sized stems (<5 cm stem diameter, 2-5 m height); the small trees develop towards mostly single stems.

Stage 3: Advanced secondary woodland with young trees (>5 cm stem diameter, 5-15 m height); most trees have single stems with their crowns in the stand canopy. There can be several sub-stages towards mature stands.

Stage 4: Mature to old-growth woodland with most trees in the mature stage, with tree crowns developing an umbrella shape.

Experimental harvesting of Mopane and Terminalia woodland in Limpopo Province

Two target species were selected for a 3-year experimental study to develop an ecological basis for restoring the balance between trees and grass through active resource use, in the broad-leaved woodlands/bushveld of Limpopo Province, South Africa: Silver clusterleaf (*Terminalia sericea*) and Mopane (*Colophospermum mopane*) (hereafter named Terminalia and Mopane). The species have a wide distribution in the bushveld/woodland in Limpopo Province and in southern Africa, and a known preference for firewood and construction poles, and other uses, such as Mopane worm as a food source. The study has four specific objectives: (i) To assess the floristic-structural composition of woodland respectively dominated by each of the two key tree species to determine their growing stock in terms of stem volume and tree biomass; (ii) To apply selective stem thinning and branch pruning to the selected target species by different thinning intensities and determine the stem volume and tree biomass that could potentially be harvested from such stands; (iii) To determine the regeneration response of the targeted species to the different intensities of harvesting as applied during the early rainy and mid-dry seasons, mainly in terms of vegetative regrowth (coppicing or sprouting); (iv) To develop capacity and train resource users (mainly young

women) and resource managers in the developed sustainable resource use management system for harvesting fuel wood and poles. This paper covers the results around objectives (i) and (ii).

Four experimental thinning intensities were applied to the target species: Control of 0% stem cutting and no branch pruning, 33% stem cutting (1 of every 3 trees); 66% stem cutting (2 of every 3 trees); and 100% stem cutting (3 of every 3 trees). Treatment application was applied in stand development stages 2 and 3 (see Figure 1) during the early rainy season (some trees were cut as 100% cutting during the mid-dry season). The experimental harvesting was applied in two study areas for each species, with four replications in each study area (each experimental plot was 10 m x 10 m in size, with a total of 8 experimental plots per study area): Terminalia in Sondela Nature Reserve near Bela-Bela and in the Mariepskop Lowveld bushveld around Klaserie; Mopane in the extensive uniform stands of both young and intermediate age at Mbaula communal area between Phalaborwa and Giyani and Tshipise area (Honnet Nature Reserve) north of the Soutpansberg.

Floristic-structural composition of stands prior to experimental harvesting

Stand composition was recorded immediately prior to implementing harvesting treatments. All stems ≥ 2 cm stem diameter at breast height or 1.3 m above ground level (DBH) were recorded by species and DBH, and all stems <2 cm DBH were recorded by species and stem counts. Species importance values were calculated separately for stems <2 cm DBH (based on frequency of occurrence and stem density), and stems ≥ 2 cm DBH (including stem size via stem basal cross-sectional

area). Importance values and stem diameter class distribution (population structure) were calculated as baseline for assessing the impacts of experimental treatments. Four important components of the composition of the selected experimental stands of the two species in stages 2 and 3 in the four study areas, were compared before implementing experimental treatments: composition of woody species, stand height, stand stem density and basal area of stems (as proxy for tree size) (Table 1).

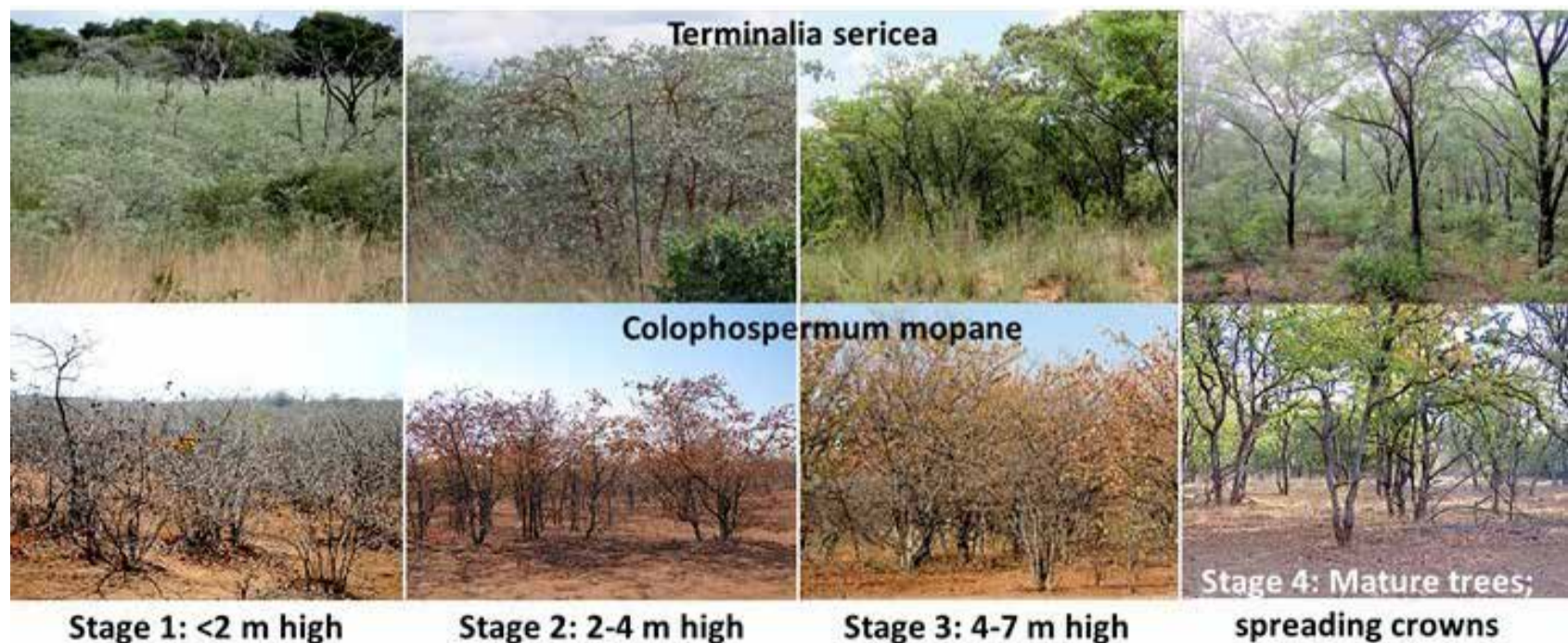


Figure 1. A visual representation of the four stand development stages for Terminalia in the Sondela area, and for Mopane in the Tshipise area.



Study area	Stage	Number of species	Stand height m	Stems/ha			Basal area m ² /ha		
				Mean	Min	Max	Mean	Min	Max
Terminalia woodland									
Sondela	2	7	3.6	5488	3100	9100	6,32	2,64	13,33
	3	7	6.2	4488	1700	7400	13,52	7,62	31,79
Klaserie	2	17	3.3	2663	1100	4500	4,66	0,83	9,00
	3	18	7.0	1600	500	3700	12,92	7,85	20,02
Mopane woodland									
Mbaula	2	18	2.3	3869	2100	5800	4,78	1,34	11,45
	3	17	5.2	4225	2000	6200	10,64	5,17	17,35
Tshipise	2	9	3.5	3094	1500	5100	7,11	3,16	12,98
	3	4	5.6	2775	1600	5800	13,46	5,45	26,23

Table 1. Variation in the composition of selected stands for experimental treatment prior to implementation of treatments, by study area, target species and stand development stage.

Species composition

A total of 47 tree and shrub species (nine species still unidentified) were recorded. The importance values for the recorded woody species showed that the two target species totally dominated the selected stands for the experimental treatments of each specific target species in each of the two stem size categories.

A total of 30 woody species were recorded in the 16 experimental plots of Terminalia, with 10 species at Sondela and 27 species at Klaserie. The known species belong to 23 genera and 16 families. *Lantana camara*, an invasive alien scrambler species, was mostly recorded in the Acornhoek area, mainly as scattered large bushes. The Sondela stands included 8 species in the plants <2 cm DBH (6 in stage 2; 6 in stage 3), and 8 species in the plants ≥2 cm DBH (6 in stage 2; 6 in stage 3). The Klaserie stands included 24 species in the plants <2 cm DBH (14 in stage 2; 17 in stage 3), and 20 species in the plants ≥2 cm DBH (8 in stage 2; 15 in stage 3). Sickie bush (*Dichrostachys cinerea*), White raisin (*Grewia bicolor*) and Climbing raisin (*G. caffra*) were present in both study areas, but much more important in the Sondela stands than in the Klaserie stands. In the Klaserie area, Sickie bush was much more important in the stage 3 stands at Klaserie, and young trees of Kiaat (*Pterocarpus angolensis*) was relatively well presented in the Acornhoek site.

A total of 29 woody species were recorded in the 16 experimental plots of Mopane, with 24 species at Mbaula and 9 species at Tshipise. The known species belong to 18 genera and 12 families. The Mbaula stands included 21 species in the plants <2 cm DBH (18 in stage 2; 17 in stage 3), and 16 species in the plants ≥2 cm DBH (8 in stage 2; 14 in stage 3). The Tshipise stands included 8 species in the plants <2 cm DBH (6 in stage 2; 3 in stage 3), and 6 species in the plants ≥2 cm DBH (5 in stage 2; 4 in stage 3). White raisin was important in stems <2 cm DBH in both areas but less so in Stage 3 stands at Tshipise where it was important in both stages in stems ≥2 cm DBH. Sickie bush is important only in Stage 2 at Mbaula in stems <2 cm DBH. Red bushwillow (*Combretum apiculatum*) is important in both size categories, in stages 2 and 3, at Mbaula. Purple pod (*Terminalia prunioides*) is important in stems ≥2 cm DBH in both stages at Mbaula.

Structural composition

Structural composition of the stands has three components: stand height, and stem density and basal area over size classes (Table 1). The main changes in structural composition from Stage 2 to Stage 3 were in terms of increasing stand height, decreasing stem density (except with Mopane at Mbaula) but increasing stem size (basal area), and increasing total biomass (based on the 100% cutting). The stem diameter class distributions of Terminalia and Mopane trees for the two stages in the two study areas show a strong inverse J-shaped distribution (Figure 2), with a high density of stems in the smallest stem diameter class, and a sharp decline across the larger stem diameter classes.

Note that for stems <5 cm DBH, the stem densities for the two Sondela stages occur at a higher level than the two stages at Klaserie. In general, the Klaserie stage 3 stands appeared to be in a more advanced development of stage 3 than the Sondela stage 3 stands. The Terminalia stands showed a much higher stem density in the 2.0 to 4.9 DBH class but lower stem density in the stem diameter classes ≥8 cm DBH. The Mopane Tshipise Stage 3 stands show a higher density of stems through all the classes ≥8 cm DBH, suggesting those stands to be in a more advanced stand development of stage 3 (possibly Stage 4), and even in the two taller Stage 2 stands (advanced Stage 2). Both target species are strongly light-demanding with the smaller stems in the treatment plots appearing suppressed with no growth vigor. The strong inverse J-shape of the stem diameter class distributions, particularly in the Stage 2 stands, suggests a strong self-thinning of the young stands, with growth in height and stem diameter in the stronger growing stems. Selective stem thinning in the 33% and 66% stem thinning treatments focused on removing the smaller, suppressed, damaged or deformed stems, and it is expected that such thinning could speed up stand development towards larger trees of good form (with appropriate branch pruning).

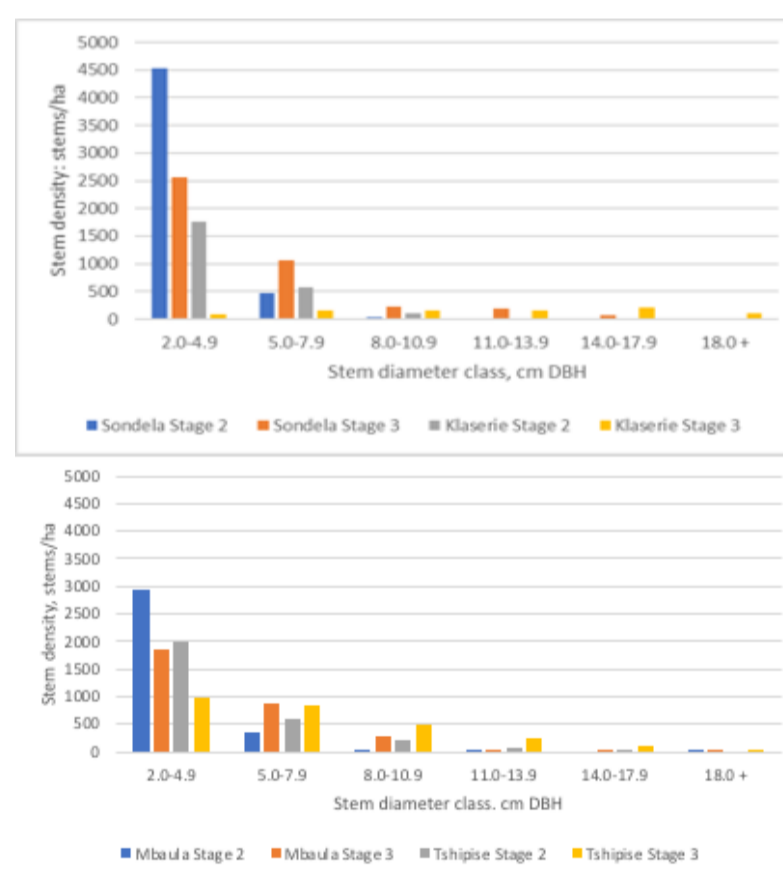


Figure 2. Stem diameter class distributions for stand development stages 2 and 3 for the two study areas per target species: (a Top) Terminalia trees at Sondela Nature Reserve and Klaserie sites; (b Bottom) Mopane trees at Mbaula and Tshipise sites.

Tree harvesting by thinning intensities

The practical application of the four experimental thinning intensities was applied as follows: Control: No stem cutting with no branch pruning; 33% cutting: Cut 1 of every 3 trees; 66% cutting: Cut 2 of every 3 trees; 100% cutting: Cut all stems (Figure 3b). With 33% to 100% cutting, all stems <2 cm DBH, were removed on the assumption that they are all shade-intolerant suppressed stems under the canopy. Lower branches of retained trees in treatments 2 and 3 were pruned. Stems were assessed in groups of 3, 6 or 9 stems to apply the relevant thinning intensity and to spread stem thinning across the treatment plots. The following criteria were applied to each tree to be selected for harvesting: (a) Small suppressed stems; (b) Damaged stems, either in crown, along stem and at base of stem; (c) Deformed stem; (d) Heavily branching stems. Each stem selected to be cut, was cut as low as possible to the ground. Most stems in Stage 2 stands were cut with a bow saw (Figure 3a). Larger trees in Stage 3 were cut with a chain saw to speed up the harvesting process but may not be the way trees would be harvested around villages.

After cutting, the total length (height) of the stem/tree was measured and recorded. The material of each cut stem/tree was subdivided into three size categories: stem section(s) of ≥ 10 cm stem diameter without smaller branches or twigs; stem section(s) of 5 to 10 cm stem diameter without smaller branches or twigs; and stem sections of <5 cm stem diameter plus twigs and leaves. Dead stems or branches were not recorded. Each stem section ≥ 5 cm stem diameter was recorded by its length and mid-stem diameter to calculate its volume. Smaller stems were bundled by size category and weighed to determine biomass (Figure 3c-f). Larger stems were weighed individually. Material <5 cm stem diameter was bundled and weighed.

The harvested utilizable stem volume and total wet biomass of different sizes of material with the different thinning intensities varied between the two species and increased from Stage 2 to Stage 3 stands (Table 2). The values showed the amount of woody material growing in these stands but that they vary much from plot to plot (related to stand density) as shown by the standard error of the total mean values. Mean wood volume in Terminalia stems ≥ 5 cm diameter was 5.7 m³/ha in Stage 2 and 18.6 m³/ha in Stage 3 stands at Sondela, and 5.1 m³/ha in Stage 2 and 61.0 m³/ha in Stage 3 at Klaserie. For Mopane, the wood volume was 1.5 m³/ha in Stage 2 and 10.8 m³/ha in Stage 3 at Mbaula, and 10.4 m³/ha in Stage 2 and 41.7 m³/ha in Stage 3 at Tshipise. Total tree biomass for Terminalia was 26.7 metric ton/ha for Stage 2 and 53.7 metric ton/ha for Stage 3 at Sondela, and 24.9 metric ton/ha for Stage 2 and 83.3 metric ton/ha for Stage 3 at Klaserie. The highest value of 148.31 metric ton/ha was recorded in one plot at Klaserie. For Mopane, the total tree biomass was 14.7 metric ton/ha in Stage 2 and 24.1 metric ton/ha for Stage 3 at Mbaula, and 23.8 metric ton/ha in Stage 2 and 65.4 metric ton/ha in Stage 3 at Tshipise. The results indicate that there is a considerable resource that could be used, without deforesting the area, or losing plant diversity.

The Stage 2 stands in general produced small wood volume of harvested stems, predominantly in stems <10 cm diameter. Such material can be used for laths, and mainly for firewood for daily cooking. That is the size of material that women would mostly harvest, and women would therefore be the people from rural society who would be shaping future productive stands through either 33% or 66% selective thinning activities. Stage 3 stands produced a higher proportion of stems ≥ 10 cm diameter that could be suitable for construction poles.

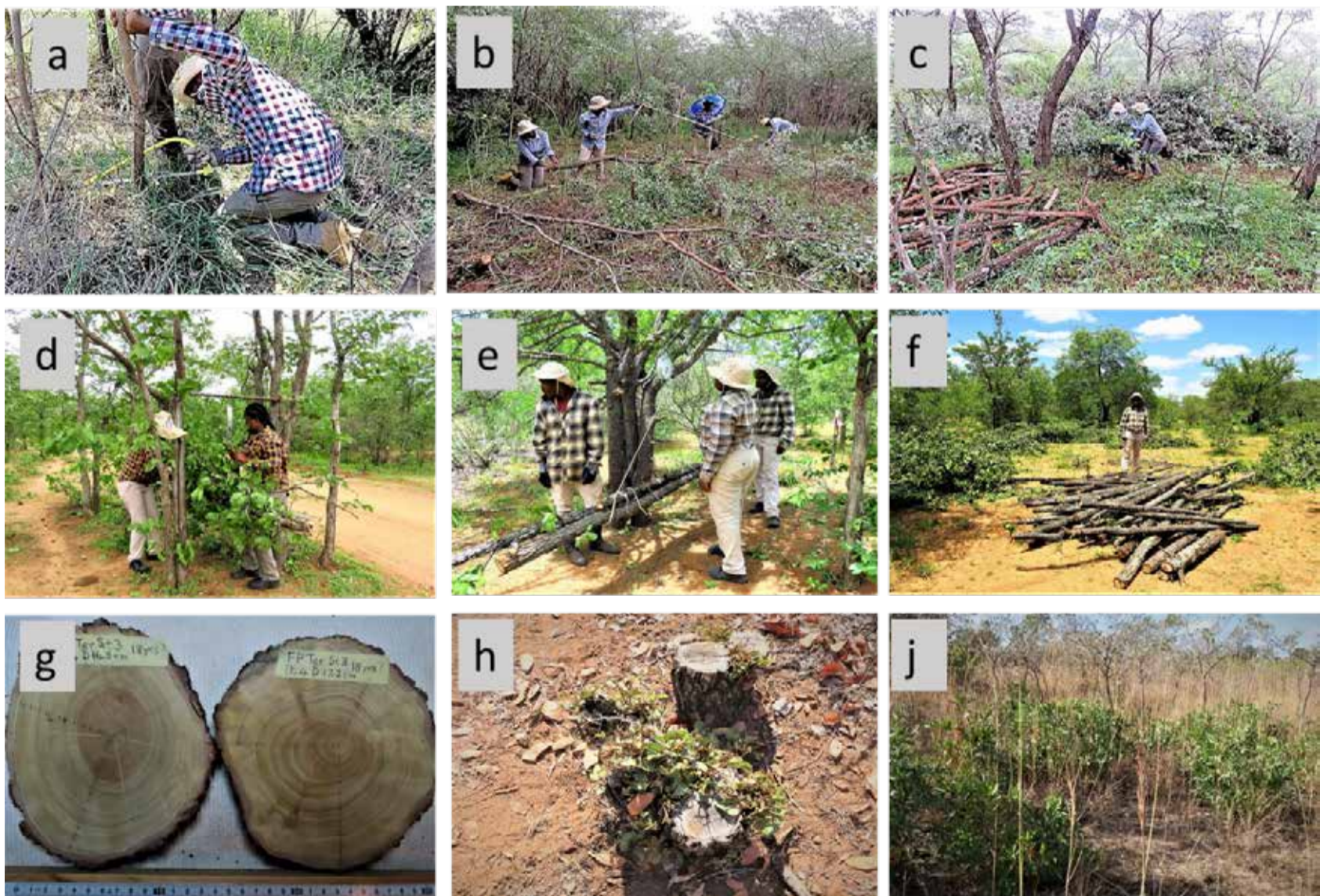


Figure 3. Activities and observations around experimental harvesting of stems from Terminalia and Mopane woodland. (a) Cutting of a Terminalia stem with a bowsaw; (b) 100% cutting of a Terminalia stand; (c) Weighing and piling of cut stems of Terminalia; (d) Weighing a pile of Mopane branches; (e) Weighing a bundle of Mopane stems; (f) Some of the Mopane stems from 100% cutting in Stage 3 stand; (g) Growth rings on Terminalia stem sections; (h) Browsed shoots on a cut stump of Mopane during July 2020, 6 months after 100% cutting; (j) Multiple shoots of Terminalia on stumps 6 months after 100% cutting in Stage 2, during July 2020.



Growth response to thinning intensities

An important aspect of this study is the growth response to the different thinning intensities. This part of the study is still in progress, and only a few key aspects are highlighted here. Three components of growth response were assessed: Using growth rings to assess tree and stand growth; recording shoot growth on the cut stumps every 6 months since cutting the stems; and recording stem diameter growth at 1.3 m above the ground once a year during the dry season (not yet analysed).

Growth rates from growth rings

A preliminary assessment was made of using growth rings of cut stem sections to determine the age of the tree, the stand, and tree growth rate. Terminalia showed clear annual growth rings (Figure 3g). Ring width varied between the first (outer recent 1 to 5 years; widest rings), second, third to fourth (inner 16+ years; narrowest rings) bands of rings. This could relate to an initial strong competition between stems, with gradual faster height and diameter growth of fewer stronger growing stems in the canopy (better light conditions in upper canopy). This initial assessment showed a mean annual stem diameter growth for Terminalia of 0.60 to 1.04 cm/year; a relatively fast growth for natural stands with no silvicultural stem thinning to improve growing space

(reduce competition). Growth rings of stems of Mopane mostly are not clear, but some stems do develop relatively clear growth rings, and this needs further assessment.

Sprouting response and shoot growth

Assessment of sprouting response on cut stumps after 6 months during the mid-dry season (July 2020), in all study areas of both species, was severely handicapped by generally severe browsing (Figure 3h) by cattle (Mopane at Mbaula), goats (Terminalia at Sondela) and antelope (both species, most sites), and through killing of Terminalia sprouts by frost at Sondela. The Klaserie Stage 2 stands of Terminalia showed how fast such sprouting shoots could grow in the absence of browsing (cattle walked through the plots without any browsing). Most stumps on 100% cut plots showed a high percentage of stumps with >5 shoot clusters per stump, with mean height growth of about 1 m after approximately six months (Figure 3j), with a much lower percentage of stems with good sprouting and shoot height with the 33% and 66% thinning. This, and the declining number of shoot clusters with increasing shoot height, clearly showed the importance of enough light for good sprouting response. Height growth of sprouting shoots on 100% cut plots was better during December 2020, with fewer shoots on stumps in 66% cut plots, and less on 33% cut plots.

DISCUSSION: THE WAY FORWARD

This experimental study supports the notion put forward in earlier studies in Miombo and Undifferentiated Woodland, and in the Karee study, that these strongly light-demanding, even-aged woodlands could potentially produce much wood material without destroying their biodiversity. The experimental 33% and 66% thinning of stems removed the suppressed, deformed, and damaged systems, and improved stem form by pruning the lower branches of remaining stems of good vigor. The expectation is that remaining stems will show good growth of stems of good form and vigor.

The initial assessment of sprouting response suggests that limited to no sprouting developed in the stands after 33% or 66% stem thinning. Only with 100% cutting of stems, creating larger gaps, most stumps produced 5 and more sprouting clusters in both stages 2 and 3, even though most sprouts were browsed. Such developing shoots on cut stumps will have to be thinned at an early stage to optimize growth of the better shoots. The severe browsing of sprouting shoots of both species in sites where cattle, goats and antelope freely move around, needs to be considered in developing cost-effective, sustainable resource use practices.

Sustainable resource use, when applied as a typical forestry plantation silvicultural management system, could combine sustainable supplies of poles and fuelwood from densifying bushveld/woodland, with recovery of their biodiversity, productivity, and diverse use value. Selective stem thinning, with branch pruning of remaining stems, facilitates stand development in larger stems of good form. Group-felling of mature trees ensures good regeneration of the strongly light-demanding canopy tree species. Such a system of selective stem thinning, and branch pruning of remaining stems, in stand development stages 1 to 3, could be applied by rural farmers during their regular harvesting of fuel wood, construction poles of variable dimensions, and fiber, to facilitate stand development. They need to clear-fell mature stands for wood of larger dimension to stimulate regeneration of the generally light-demanding woodland species (Geldenhuys 2014). Commercial ventures could be developed in such woodlands to improve the grazing potential on farms. The implementation of this concept in practice will, however, require a change in policy for forestry, agriculture, conservation, and integrated rural development in these broad-leaved woodlands, as has been shown for Mozambique (Geldenhuys 2015).

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OM AGTER DIE KAP VAN DIE BYL TE KOM André de Villiers (Professor emeritus), Magaliestak.

In Septembermaand tydens Boomplantweek, alom bekend as Arbour Week is feitlik al die bome aan die oostekant buite die walaermuur om die Voortrekkermonument (VTM), afgesaag. Volgens inligting het 'n span vrywilligers binne 'n kort tyd feitlik alle bome in en wat om die Trekroetetuin afgesaag en al die klippe en rotse bloot gelê. Die aansig van die oostekant van VTM het aansienlik verander.

Daar het heelwat mediaberigte oor die gebeure verskyn. Die bestuur van die Monument se verweer was dat die vrywilligers wat gevra is om die terrein te rehabiliteer per ongeluk van die bome afgesaag het. Hoewel verskoning hiervoor aangebied is, is beweer dat daar wel deurlopend konsultasie met verskeie kenners, waaronder die Dendrologiese Vereniging, was. Dit is nie waar nie.



Ongeveer 2018

Verskeie foto's wys duidelik dat dit wat oorgebly het tans uiters onaantreklik lyk. Maar, die bome is weg. Dit gaan aansienlike geld, poging en tyd neem om weer daardie deel van die VTM terrein te rehabiliteer en aantreklik te laat lyk. Die oogmerk vorentoe is om die walaer muur sigbaar te hou. Afstand word gedoen? Voortaan sal daar nie weer bome in die trekroete tuin en voor die monument geplant word nie.



28 Oktober 2021

Agtergrond

Kyk mens uit enige hoek na die massiewe VTM wat op die koppie uittoon en tot sover as die voetheuwels van die Waterberg buite Bela Bela sigbaar is, sou dit verkeerd wees om te dink dat alles slegs om die argitek Gerhard Moerdyk se imposante gebou gaan. Die hele Monumentkompleks behels ongeveer 250 hektaar en sluit verskeie geboue, paaie en 'n amfiteater in. Bome speel deurgaans 'n belangrike rol in die skep van 'n aantreklike terrein wat vir ontspanning, onderrig en Afrikanerherdenkings benut word.

Vanweë die ligging en uitsig wat dit bied is dit 'n vername besoekpunt vir plaaslike en buitelandse toeriste. Hier kan 'n toeris 'n goeie beeld kry van die ontwikkeling van Suid-Afrika, oor die laaste 200 jaar.

Die terrein word opgedeel in vyf dele naamlik:

- Die Monumentkompleks, walaermuure en die Trekroetetuin
- Die Erfenisentrum met biblioteek en argiewe,
- Die Krugergallery met FAK-huis en FAK-liedjietuin
- Die Pioniersentrum met die Amfiteater
- Fort Schanskop aan die oostekant van die terrein.

Hierbenewens is daar 'n gedeelte wat aan die Tshwane Metro behoort wat die Erfenistuin bevat.

Gerhard Moerdyk het in sy ontwerp van die VTM gepoog om tegelyk voorsiening te maak vir 'n historiese, religieuse en kulturele inslag. Die reuse monument wat bo Pretoria uittoon is 'n merkwaardige gebou waarin heelwat simboliek vervat is.

Om hierdie hele kompleks as 'n ekonomiese entiteit te bestuur en te onderhou, verg aansienlike bestuurskundigheid en finansiering. Voor die Covidpandemie het veral gereelde buitelandse besoekersgroepe 'n groot deel van die benodigde finansiering verskaf. Die afgelope twee jaar se Covid inperkings het groot skade aan die inkomstestroom van die Monument meegebring.

Verskeie bestuursveranderinge en inkortings van die begroting het noodsaaklik geraak en in die proses het 'n groot deel van die institusionele geheue verlore geraak.

Sedert die inwyding van die VTM 70 jaar gelede het groot veranderinge in Suid-Afrika en die wêreld ingetree. Mens se paradigmas het heelwat verander en veral in 'n tyd waar klimaatsverandering die mensdom bedreig, is daar groter begrip vir die behoud van bome as noodsaaklike deel van ekologiese stelsels. Suid-Afrika se per kapita koolstofvoetspoor is besonder hoog en elke boom lewer 'n bydrae tot die vaslegging van koolsuurgas.



Belangegroep van die Voortrekkermonument:

In enige komplekse saak is daar gewoonlik verskeie belangegroep of partye wat elkeen 'n bepaalde belang in die saak het. In Engels word na *stakeholders* of *interested and affected parties* verwys. Meesal vorm sulke partye 'n sub-stelsel van die groter stelsel.

Elke party in 'n saak beskou die aangeleentheid uit sy bepaalde paradigma of deur sy eie bril of kopstuk. 'n Party beklemtoon meesal sy bepaalde ideologie, kultuur en meem. 'n Meem, in Engels *meme*, is 'n idee, gedrag, styl, skryfwyse of simbool van kulturele oorsprong wat deur gereelde gebruik in alledaagse optrede en spraak vestig. 'n Bepaalde meem kan daartoe lei dat ekologiese en ekonomiese faktore asook 'n holistiese of stelselbenadering oor die hoof gesien word.

Toeriste en die breë publiek geniet veral die uitsig, die imposante gebou met 27 marmerpanele in die Haldesaal waardeur die geskiedenis van die Groot Trek uitgebeeld word. Heelwat senior burgers van vandag was by die inwyding van die VTM in 1949 en het bepaalde herinneringe en foto's daarvan.

Militêre veterane het 'n noue verbintenis met die VTM en daar is 'n Gedenkmuur van gevalle soldate. Jaarlikse herdenkings vind hier plaas.

Gedenknisse vir afgestorwenes van veral families word in 'n gedenk-tuin en nismuur bewaar en baie familieledede besoek gereeld hierdie muur.

Skoolgroepe besoek die VTM, die Pioniersentrum en die Lewende Laer waar verskeie artefakte en uitstallings leergeleenthede bied.

Navorsers besoek gereeld die Erfenisentrum en kan heelwat argiefinligting bekom.

Die Genealogiese Vereniging hou gereeld vergaderings in die Erfenisentrum

Die Regering beskou die Monument as 'n oorblyfsel van apartheid en is dit oor die algemeen nie goedgesind nie. Nogtans word besef dat die monetêre rol van die VTM in toerisme belangrik is.

Die Voortrekkermonument as deel van die Afrikaner se geskiedenis:

Professor Hermann Giliomee het tereg opgemerk dat *Afrikaners, soos enige ander gemeenskap, ook net 'n normale geskiedenis wil hê. Dit wil sê 'n geskiedenis met heldeverhale waarop Afrikanerkinders trots kan wees, maar ook met foute waaruit kinders toekomslesse kan leer.*

Die Voortrekkermonument het in vele opsigte 'n belangrike rol in die behoud en voorstelling van die Afrikaner se kultuur en bydrae tot Suid-Afrika, gespeel.



Die afkap van die bome het lede van die Dendrologiese Vereniging uiteraard geskok. Die Vereniging se leuse lui arborum silvarumque conservatio salus mundi est. Dit vertaal as 'die bewaring van bome en bosse is goed vir die aarde'.



Voorrekkermomument

Naas Grove, President van die Vereniging, het in 'n brief aan dr Danie Langner, uitvoerende bestuurder van die VTM en die Erfenisstigting, die volgende gesê: *Ons het met afkeer kennis geneem van die inhoud van die mediaverklaring en meegaande foto's wat op die VTM se Facebook blad op 10 September 2021, onder die naam van Gerhard Pretorius, geplaas is. Daar is sprake van 'n 'tweeledige benadering tot die opknapping en instandhoudingswerk'.*

In 'n latere verklaring deur die President van die Vereniging, word gemeld: *"Baie van die bome is waarskynlik reeds in die vroeë geskiedenis van die VTM geplant (Baie van hierdie bome is deur die burgemeesters van dorpe langs die trekroete geskenk en per trein na Pretoria vervoer). Dit blyk dat daar geen begrip, deur die huidige bestuur, getoon is deurdadig bome met tyd groot word en die landskap*



gaan verander nie. Nou word daar gestrewe na 'n ideaal wat die VTM terug neem na 1949 sonder om die waarde van die huidige landskap en natuurêre erfenis inag te neem. Ons staan nie die oorspronklike ideaal dat die trekroete tuin herstel word teë nie. Intendeel die roete sou die boomryke tuin nog meer waarde gee aan besoekers wat daardeur stap. Ons stem ook saam dat as gevolg van befondsing en alternatiewe prioriteite instandhouding van die tuin agterweë gelaat is. Instandhouding was dus broodnodig. Die trekroete kon baie goed ingepas het binne die boomryke milieu."

Aansluitend hierby kan gemeld word dat daar in 'n besoek aan die terrein gesien is dat heelwat groot apiesdoringbome, *Senegalia galpinii*, teen die walaermuur gegroei het en ongetwyfeld afgesaag moes word. Die onderstamme moet nog verwyder word en ongeveer 3 meter om die walaermuur moet vry van groot bome wees.

'n Aantal beskermde bome, soos henkelgeelhoute en besonder groot bome soos witsering en oostelike koeniebos is ook verwyder. 'n Groot en skouspelagtige *Cyphostemma juttae* wat net links van die groot ingangshek gestaan het, is ook verwyder. Baie besoekers het hierdie plant interessant gevind en het gereeld daarvan foto's geneem.

'n Groot uitheemse bobejaandruifboom (*Phytolacca dioica*, verklaarde uitheemse indringerplant (NEM:BA Kat 3) het egter na die suidooste van die terrein behoue gebly.

Die Magaliestak van die Vereniging was met die vorige bestuur van die VTM in gesprek oor die aanbring van boomplaatjies en spesiale voorligtingsborde aan die oostekant van die walaermuur. Daar was na die aanbreek van die Covidpandemie om verstaanbare redes geen verdere konsultasie met Magaliestak se lede nie.

Hoewel 'n tuinkomitee die rehabilitasie van die gebied beplan, is dit 'n geval van gedane sake wat nie meer keer het nie. Die bome is weg.

Gevolgtrekkings:

Die vernaamste vrae is uiteraard: *Waarom is die bome afgesaag? Was dit die enigste uitweg? Sou 'n minder drastiese ingryping nie beter gewees het nie? Is daar voor hierdie drastiese stap behoorlik met kundiges gekonsulteer? Het die bestuur die negatiewe implikasies van hierdie stap oorweeg?*

Mens wonder of die leierskap en bestuur van die VTM besef dat ons in 21ste eeu anders as 70 jaar gelede oor dinge dink. Ander simbole is nou belangrik. Met moderne tegnologiese hulpmiddele tot ons beskikking, kan baie van dit wat deur die blootlegging van

die Trekroete en die voorstelling van die geveg by Bloedrivier tot die afsaag van die bome gelei het, nou beter voorgestel word.

Ons het hier te make met 'n botsing van twee meem. Aan die een kant 'n *absolutistiese-dogmatiese* meem wat terug/gryp na 'n presiese voorstelling van die verlede en sy simboliek. Daarenteen is 'n daar 'n *relatiewistiese-ekologiese* meem wat die rol van die natuurlike omgewing in ons alledaagse lewe beklemtoon en wat 'n ooreenkomstige simboliek vereis. Dis jammer dat laasgenoemde meem in hierdie geval die onderspit gedelf het.

IZAK VAN DER MERWE, LID VAN DIE UITVOERENDE KOMITEE VAN DIE DENDROLOGIESE VERENIGING EN SY GESIN VERHUIS AAN DIE EINDE VAN DIE JAAR NA NEDERLAND.

Izak het met Marissa Greeff gesels oor sy betrokkenheid by bewaring en by die Vereniging:

Hoe en wanneer het jy betrokke geraak by die Dendrologiese Vereniging?

Ek was in 1983 'n jong omgewingskundige by die destydse Departement Waterwese, Bosbou en Omgewingsake. Ek moes dr Fried Von Breitenbach help met die saamstel van inligting vir beskerming van bome vir omgewingsopvoeding doeleindes. Toe draai hy my arm om by die Vereniging aan te sluit.

Wanneer het jy in jou werk betrokke geraak by bome?

In die 1980s was ek aanvanklik by omgewingsopvoeding betrokke. Af en toe is ek gevra om opvoedkundige materiaal oor bome saam te stel. Ek het ook vir Neels Esterhuysen by die Bosboutak insette gegee vir die Boom van die Jaarpamflette. My ernstige betrokkenheid by bome het in 2001 begin toe ek by die Bosboutak begin werk het, en toe was ek by Bosbou Wetenskaplike Dienste onder ander betrokke by die hersiening van die beskermde bome, wetstoepassing, en het die Kampioenboomprojek begin om individuele bewarenswaardige bome te lys as beskerm.

Vertel ons van die Kampioenbome-projek

Nadat ou geskiedkundige bome in Johannesburg gevel is en ons magteloos was om iets te doen, het ek die projek saam met kollegas in 2002/2003 geïnisieer. Toe wou ons pro-aktief besondere bome beskerm. Daar was 'n geskiedkundige ou laning plataanbome by die Johannesburg Hospitaal wat gevel is net omdat werkers gekla het hulle mors te veel blare! In dieselfde tyd het 'n huiseienaar die geskiedkundige ou Sophiatown eikeboom so vermink dat dit later doodgegaan het. Daar is 'n paneel van kundiges saamgestel, en daardie paneel kom steeds een keer per jaar bymekaar om nominasies te evalueer. Die lysingskriteria is streng, dus word daar elke jaar net 'n handjievol bome bygevoeg tot die getal van 95 tans. Die projek is in 2015 by die World Forestry Conference deur die Food and Agriculture Organisation bestempel as 'n "Best Practice Project" wat enig van sy soort is in Afrika.

Dink jy die Dendrologiese Vereniging voeg waarde toe tot die beskerming en bewusmaking van bome?

Absoluut. Om die waarheid te sê die Vereniging het sterk bydraes gelewer tot beide die beskermde boomlys wat in 2002 hersien is, asook die kampioenboomlys. Ek kan met trots sê dat van die eerste kampioenbome wat verklaar is verreweg die meeste deur

die Vereniging genomineer is vanaf die Grootboomlys, en dat heelwat van die inligting vir die hersiene lys van beskermde bome wat in 2003 gepubliseer is vanaf die Vereniging gekom het. Daar is by baie takke aktiwiteite wat liefde vir bome by mense kweek via uitstappies, boomplantgeleenthede en dan is daar natuurlik die Dendron tydskrif wat wetenskaplike en populêre inligting oordra, en selfs na universiteite en navorsers oorsees gaan. Die Vereniging het ook deurgaans insette gelewer in geselekteerde groot omgewingsimpakstudies met groot impakte op bome, soos Vele-myn in Limpopo, en soms hande gevat met ander omgewingsorganisasies om druk toe te pas.

Wat sou 'n toekomstige fokuspunt kan wees vir die Vereniging?

Ek dink die kern van wat die Vereniging nou doen is wat hy moet voortsit, naamlik uitstappies (om lede se dors na boomkennis en sosiale samesyn te les), boomplant en praatjies (om plaaslike gemeenskappe bewus te maak), insette op projekte en om druk uit te oefen waar nodig (om by te dra tot beter uitkomst vir projekte wat op bome impakteer), en om 'n verskeidenheid van kennis via die Dendron uit te dra. Die enigste ding waar ek dink die Vereniging nog aan kan werk is om internasionale skakeling te bewerkstellig, veral met die International Dendrology Society. Ons Vereniging vul 'n spesifieke nis wat deur geen ander vereniging gevul kan word nie.

Wat gaan jy nou doen en waar pas SA bome in jou planne in?

Ek gaan in Nederland by die Nederlandsche Dendrologiese Vereniging aansluit asook die International Dendrology Society (wat in Duitsland gebaseer is). Ek sal inligting van daar af deurgee hiernatoe, maar ook praatjies oor Suid Afrika se bome en bosse daar probeer organiseer. Ek gaan ook aan my volgende publikasie werk naamlik Forest Conservation in South Africa. Dan sal ek my kollegas by Bosbou, Visserye en die Omgewing help met die saamstel van nominasielyste vir die kampioenboomprojek, en die Vereniging se lys van groot bome behoorlik bybring vir my opvolger by die Vereniging se bestuur. Ek het weens werksdruk nie naastenby by alles uitgekom wat ek moes doen nie, maar gelukkig het almal geduld gehad en my nie oor die vingers getik nie. Nou het ek 'n skuld wat ek moet afwerk, en dit sal my seker paar maande neem.



Izak praat oor 'n groot *Ekebergia capensis* in Skukuza tydens 'n onlangse uitstappie van die Magaliestak na die Krugerwildtuin.

Soutpansberg - How many Indigenous trees?



Garcinia livingstonei leaf detail



On expedition in the Soutpansberg area with members of the Dendrological Society in early autumn, Marissa Greeff marvels at the number of indigenous trees seen and positively identified within five days, amounting to more than 260 species.

Leshiba on the Soutpansberg, is 40 km west of Makhado/Louis Trichardt, Limpopo on the road to Vivo. The area is accessed by a turn-off after crossing the Sand River and driving 12.5 km on a steepening mountain path to the top where, in the gathering of tree people, 262 species were identified. The list tends to fray at the edges because the definition of what constitutes a tree becomes somewhat blurred when the environment offers so many options due to varying habitats on the mountain top in the mist belt.



Botanising in the Soutpansberg mist belt



Taking a breather among the trees

There is an easy example of what falls off the list when the definition of a 'woody stem' - if it is to be a tree - is applied too strictly, is the baobab, *Adansonia digitata*, which is strictly speaking not a tree since it does not have a woody stem. Furthermore, in this case, baobabs do not naturally occur on the Soutpansberg. Those we saw are testimony of a settlement of the Mapungubwe people who controlled access to the Soutpansberg salt pan and utilised baobab fruit which led to the trees we saw there. These baobabs are silent witnesses to the people who lived there in the 1300s, as are the cobalt blue beads, Venetian in origin, that wash out of the soil after the rains.





Discussing fine detail of a sample is key to identifying plant specimens.

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Walking from tree to tree with the experts in this group of the Dendrological Society, takes away much of the slog over keys in field guides. In the company at Leshiba were some of the best tree minds in the country. Among them Peter Straughan, the farm manager and local tree expert, Hartwig von Dürckheim, one of the authors of the 2014 *Pocket List of Southern African Indigenous Trees* and, all the way from the KwaZulu/Natal north coast, Francois du Randt, author of *The Sand Forest of Maputoland*.



An imposing *Podocarpus latifolius* in one of the wet kloofs.



The experts examining leaf detail are, from left, Peter Straughan, Francois du Randt and Hartwig von Durckheim.

All the daily outings up or down the mountain concluded with confirming identification by sifting through the daily collections of numerous samples of twigs with leaves and in some cases, fruits and poring over taxonomic details in expert field guides.

Much excitement was generated when we encountered the endemics such as the Venda bushwillow (*Combretum vendae*), which is common on the 'berg' and the Venda coffee (*Sericanthe andongensis*), of which we saw only one example. Colour and beauty were provided by many big forest elders (*Nuxia floribunda*) in full bloom and white-seringa (*Kirkia acuminata*) in its autumn colours.

Exploring the wooded valleys and rocky peaks of the Soutpansberg in autumn was productive since most trees still had its leaf cover and some trees were still fruiting. Walking along the upper tributaries of the Sand River we saw two really bulky real yellowwoods (*Podocarpus latifolius*) reaching for the sky.



Combretum vendae or Venda bushwillow is endemic to the Soutpansberg area



Moving from tree to tree, identifying them on the go.





Garcinia livingstonei or African mangosteen amid admiring tree people.



Garcinia livingstonei leaf detail

The confirmed presence of the silky bark variant, *Maytenus acuminata* var *ursa-usti*, generated much excitement and its identity and presence on the Soutpansberg was confirmed by Prof Braam van Wyk, renowned botanist and plant taxonomist. "The form of *Maytenus acuminata* you saw, is clearly different from the typical *acuminata* variant. I propose that that we use *Maytenus acuminata* var. *uva-ursi* for the small-leaved form with the red berries with distribution limited to the Soutpansberg and Mount Mulanje in Malawi", he said when consulted.

Uva-ursa, in case you are interested, means 'berries (*uva*) of the bear (*ursa*)' –we did see the berries, but bears, really? However, we heard many tales of leopard sightings – among others, a black one, no less.

The article by Marissa Greeff, was published in the magazine, *Plus 50*, August/September 2021.

Plus 50 is a bi-monthly magazine aimed at the needs of people who believe in positive ageing
There are articles in English and Afrikaans about people in the spotlight that make a difference in their environment: ideas about places you can visit and useful information that will pique your interest. In addition, our experts speak on health, money and housing; and on top of that we have recipes for exquisite eating and drinking, plenty of rubrics and games.
Plus 50 is the only magazine that has been so dedicated to the market for 16 years.



Plus 50 is 'n tweemaandelikse tydskrif gemik op die behoeftes van mense wat glo in positiewe veroudering
Plus 50 is a bi-monthly magazine aimed at the needs of people who believe in positive ageing



Daar is artikels in Engels en Afrikaans oor mense in die kollig wat 'n verskil maak in hulle omgewing; idees oor plekke wat jy kan besoek en nuttige inligting wat jou belangstelling sal prikkel. Daarby stel ons kenners aan die woord oor gesondheid, geldsake en behuising; en boonop het ons resepte vir keurig eet en drink, volop rubrieke en speletjies. / There are articles in English and Afrikaans about people in the spotlight that make a difference in their environment: ideas about places you can visit and useful information that will pique your interest. In addition, our experts speak on health, money and housing; and on top of that we have recipes for exquisite eating and drinking, plenty of rubrics and games.

Plus 50 is 16 jaar lank die enigste tydskrif wat só toegewyd vir dié mark voorsiening maak.
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VAN BOME, STRUIKE EN HOUTAGTIGE RANKPLANTE

Erika van den Berg

Braam van Wyk

Sedert die publikasie van die eerste *Nasionale Lys van Inheemse Bome* in 1966 het vele byvoegings van spesies uitgeloop op die *Die Saklys van Suider-Afrikaanse Inheemse Bome* wat in 2014 verskyn het. Die Nasionale Lys was geskoei op die klassifikasiesstelsel van die Duitse planttaksonoom Adolf Engler wat dateer uit die 1890s.

Die rede hiervoor is omdat families en genusse in die Nasionale Herbarium gerangskik is volgens 'n nommerstelsel wat op Engler se klassifikasiesstelsel gebaseer is. Boomfamilies is in die lys opgeneem in die volgorde waarin hulle in die klassifikasiesstelsel verskyn het, met wat op daardie stadium geglo is die meer primitiewe families is aan die begin en die meer gevorderde families aan die einde. Genera is gelys binne die families in volgorde van veronderstelde gevorderdheid en verwantskap en spesies is dan aldaar alfabeties binne die genus geplaas. In hierdie volgorde is boomnommers dan aan die spesies toegeken. Meestal is die nommers opeenvolgend toegeken maar daar is wel op plekke nommers oorgeslaan om voorsiening te maak vir moontlike toekomstige byvoegings. Bome wat in die eerste lys opgeneem was moes aan 'n spesifieke definisie voldoen, nl. dié van die Nasionale Boswet.

Plante hou egter nie altyd definisies ingedagte wanneer hulle groei nie en kan verskeie vorms aanneem na gelang van die spesifieke omgewingsomstandighede, soms struikagtig en soms boomagtig. Oor die jare is dit goedgevind om meerdere houtagtiges ook in die boomlys in te sluit wat nie noodwendig volgens die Boswet se definisie van 'n boom vir insluiting kwalifiseer nie. Meeste van die publikasies oor inheemse bome wat tans beskikbaar is sluit ook weliswaar meer as konvensionele bome in, juis om die belangstelling van die publiek te bevredig en blootstelling te verleen aan die minder gepubliseerde struik en groter houtagtige rankers. In die lig hiervan het die boomnamekomitee dit goedgevind om die oorspronklike streng definisie van **boom** ter syde te stel en in die algemeen verskeie houtagtige spesies van 2 m of hoër in die 'boomlys' op te neem. Hierdie insluiting het daartoe gelei dat baie meer nommers in die numeriese lys ingevoeg moes word as waarvoor die oorspronklike lys voorsiening gemaak het. Aanvanklik kon die nommers sinvol toegeken word met spesies op hulle regmatige alfabetiese posisie. Later het dit egter onmoontlik geraak om die spesies in volgorde by te voeg, veral onder Fabaceae (peulplante), en die logika van die stelsel het noodwendig verbrokkel.

'n Tweede aspek wat die bestaande nommerstelsel ondoeltreffend gemaak het is die aansienlike vordering die afgelope ongeveer twee dekades op taksonomiese terrein, veral om verwantskappe tussen plante meer betroubaar te bepaal. Vir hierdie doel het die gebruik van veral DNS-inligting 'n revolusie in planttaksonomie teweeg gebring. Verwantskappe tussen plante kon nou vir die eerste keer objektief en op grond van hoogs betroubare data bepaal word. By die opstel van ouer klassifikasiesstelsels is baie besluite geneem op grond van eienskappe van die plant wat nie noodwendig 'n betroubare aanduiding van verwantskappe gee nie, asook die dikwels subjektiewe taksonomiese oordeel van 'n taksonoom. Nodeloos om te sê, die rangskikking van talle families en genusse volgens die Engler-sisteen van die laat 19de eeu is vandag totaal verouderd. Vanuit 'n taksonomiese oogpunt beskou het die grondslag waarop die nommers oorspronklik toegeken is derhalwe waardeloos geraak. Ten einde taksonomiese verwantskapsafleidings te maak uit die nommerstelsel sal die hele stelsel dus hersien moet word.

Sedert die verskyning van die Saklys in 2014 is meer as 30 nuwe spesies bygevoeg tot die FSA (*Flora of Southern Africa*) numeriese lys. Die eerste paar spesies is per gebruik in die ou stelsel ingeforseer en daarna is die besluit geneem om nuwe toevoegings slegs agter aan die lys by te voeg as bloot 'n tipe van registernommer. Die nuwe spesies is dus nie by die ander spesies binne die genus of die familie geplaas nie en slegs van 'n nommer voorsien aan die einde van die lys. Hierdie wyse van nommertoekeening maak egter geen sinvolle bydrae vir die gebruikers nie.

Die stadium is bereik dat 'n besluit oor die toekoms van die gebruik van boomnommers geneem moet word, asook ten opsigte van die titel van die lys, 'boomlys', 'lys van houtagtiges', 'lys van bome struik en rankers', of wat ookal die geval mag wees. Verskeie opsies bestaan, waarvan onder andere die volgende ses moontlikhede:

1. Behou die *status quo*; daar word voortgegaan op die huidige wyse deur die ou nommers te behou en nuwe nommers aan die einde by te voeg.
2. Behou die huidige lys, maar voeg 'n simbool by wat aandui wat die status van elke takson is, boom, struik, ranker of dalk selfs ondergrondse boom (sogenaamde *geofrutex*; dié groeivorm verskyn nie tans in die lys nie).
3. Hersien die ou nommertoekeening deur slegs die nommers te behou van die volwaardige bome (volgens Boswet definisie, of enkelstambome in die konvensionele sin van die woord). Nommers van al die ander spesies word bloot laat vaar, terwyl nommers volgens die ou stelsel steeds aan nuwe spesies wat kwalifiseer toegeken word. Die hergebruik van nommers wat voorheen aan ander spesies behoort het kan egter potensieël verwarring veroorsaak.
4. 'n Nuwe nommerstelsel, gebaseer op 'n moderne klassifikasiesstelsel, word opgestel vir *bona fide* bome. Al die ander spesies wat na goeddunke ingesluit word, word slegs gelys.
5. 'n Stelsel van slegs opeenvolgende indeksnommers word ingevoer wat nie afhanklik is van taksonomiese veranderinge nie.
6. Daar word geheel en al weggedoen met 'n nommerstelsel.

Die boomnamekomitee wil graag 'n beroep doen op lede om hulle siening oor hierdie saak bekend te maak.

Watter een van bogenoemde opsies sou u verkies? Alternatiewe voorstelle is ook baie welkom. Dit sou ook insiggewend wees indien lede wat voorstanders is van die behoud van nommers ook aandui waarvoor hulle die nommers gebruik. Bydraes kan gestuur word aan die President – Naas Grové by president@dendro.co.za

The future of the numerical list

OF TREES, SHRUBS AND WOODY CLIMBERS

Erika van den Berg

Braam van Wyk

Since the first publication of the *National List of Indigenous Trees* in 1966 many additional species found their way onto the list leading to the publication of a new list in 2014 as the *Pocket List of Southern African Indigenous Trees*.

The National List was modelled on the classification system created in the 1890s by the German plant taxonomist Adolf Engler. The reasoning behind this was to follow the numbering system for families and genera in use by the National Herbarium created according to the Engler classification system. Tree families were included in the National List in the same sequence as the classification system, listing what was then believed to be arranged from the more primitive families first to the more evolved towards the end. Genera were listed within the families according to presumed relationship and degree of advancement and the species were listed alphabetically within each genus. Tree numbers were assigned in this sequence. In general the numbers were consecutive, but in certain places numbers were skipped to allow for possible future additions. The trees in the first list had to fulfil the requirements of the definition for trees as prescribed by the National Forestry Act.

Plants grow according to the environmental conditions of their specific habitat and do not necessarily comply with set definitions. A species therefore may occur in either tree or shrub growth form. For this reason it was decided over the years to include more woody species in the list that do not comply with the strict definition of 'tree' according to the Forestry Act. Most of the current publications on indigenous trees include more than the conventional tree species in order to cater to the interests of the public, as well as to give prominence to otherwise unpublished shrubs and the large woody climbers. Taking these facts into account led the tree names committee of the society to follow suit. A large number of other woody species 2 m or taller were therefore included in the list. Due to this inclusion many more numbers had to be added to the list going beyond that which the original system had allowed for. At first the numbers could be added in a systematic way, assigning the correct systematic position to a species. Over time it became impossible to maintain the order, especially within the Fabaceae (pea family), and the logic of the system necessarily became distorted.

A second aspect rendering the numbering system ineffective is the significant developments in the field of plant taxonomy over the past about two decades, especially to ascertain the relationship between species more accurately. The use of DNA information in this regard revolutionised plant taxonomy. Highly reliable data allowed taxonomists to objectively determine the actual relationships between plants. During the development of the older classification systems many decisions were taken on characteristics of the plants that were not necessarily a reliable indication of relationship. The often subjective decision-making of the taxonomist also came into play here. The arrangement of many families and genera according to the Engler system of the late 19th century is today completely antiquated. According to current taxonomy the premise for the initial numeric arrangement of the list has become worthless. Should taxonomic deductions have to be made from the numbering system, the whole system would have to be revised.

Since the 2014 publication of the Pocket List more than 30 species have been added to the FSA (*Flora of Southern Africa*) numerical

list. The initial additions were forced into the existing list and thereafter the decision was taken to rather add the new species at the back of the list, the numbers serving purely as a register number. The new species do therefore not appear within the genus group of species or within the family. These species are listed at the end of the list and given numbers consecutively. This practice of numbering does not contribute anything to the users of the list.

At this point in time it has become necessary to take a decision on the use of the numbering system as well as of the title of the 'tree' list. With regards to the latter it could become 'List of woody plants', 'List of trees, shrubs and climbers', or whatever the case may be. Regarding the numbering system a variety of options are available, i.e. the following six possibilities:

1. Retain the *status quo*; continue with the current system retaining the old numbers and adding new ones to end of the list.
2. Retain the current list but add a symbol indicating the status of each taxon, i.e. tree, shrub, climber or even sub-surface tree (a so-called *geofrutex*; this growth form is not currently included in the list).
3. Revise the old numbering system by only retaining the numbers of the full-status trees (according the Forestry Act definition, or single-stemmed trees in the conventional sense). Numbers of all other species are simply dropped. Qualifying new tree species are numbered according to the old system. The re-use of previously assigned numbers could potentially cause confusion.
4. A new numbering system, based on a modern classification system, is developed for *bona fide* trees. All other species that are deemed worthy of inclusion is purely listed with no number.
5. A system of consecutive index numbers, not affected by any taxonomic classification changes, is introduced.
6. The numbering system is completely discarded.

The tree names committee would like to call upon the members to make their viewpoints known on this matter.

Which option would you prefer? Alternative suggestions are also welcome. It would be of great value if members who support the retention of a numbering system could indicate how they would make use of the numbering system. All contributions can be forwarded to the President – Naas Grové at president@dendro.co.za



BY MARISSA GREEFF

There's a man hanging from the ledge of a rock overhang, looking at his feet and a place to land on the floor of the shallow cave below him. No, he is looking to the left, at the slender corkwood on the rocky hillside, perhaps spotting it for the first time – or looking for leaves on it – like me?

It was mid-June and I, with some family members, was part of a smallish herd of 4X4's being shepherded by Live the Journey, a travel company. It was the last day of the trip and we were on our way to Palmwag from Puros. We came with Live the Journey from Swakopmund, up the Skeleton Coast to the Kunene River mouth, east through the dune veld to Kaokoland.

It was a self-drive, pitch-your-own-tent kind of trip and the focus was on driving and the challenge of the dunes. Tree-spotting was not on the list of things to do. Yet, there we were, two members of the Magalies Branch of the Dendrological Society incidentally on the same trip, myself and Laetitia Steynberg who travelled with Salomi Visser in her vehicle. Salomi, a Namibiën, is a seasoned safari guide and lodge owner/manager.

Between the three of us, we did as much tree-spotting as our rather hectic journey allowed and came up with a list of what we saw. A list of the *Commiphoras* we saw, is attached.

But let me backtrack to April when the Magalies Branch undertook the Leshiba tree outing in the Soutpansberg and I picked up a bet with a fellow tree spotter on the identification of *Commiphoras* in Kaokoland in winter when they are without leaves. They are deciduous, 'often losing their leaves and standing bare for more than half the year', according to *Keith Coates Palgrave Trees of Southern Africa* revised and updated by Meg Coates Palgrave. My opponent's stance was that it was impossible to identify *Commiphoras* when they had no leaves, and he didn't think we would see any with leaves. However, I was sure there would be some with some leaves. They are not called 'kanniedood' for nothing.

Commiphoras are part of the *Burseraceae* or myrrh family and most of them produce aromatic resins.

Once word got out in the Kaokoland tour group that we were looking for *Commiphoras* with leaves, some fellow travellers pitched in to help find them. And make no mistake, they quickly caught on to what we were looking for.

The man hanging from the ledge, was one of the lonely stone men that dot the Kaokoland landscape. These men are made from stone and steel and each one is tagged with a number, but not the name of the artist who makes them.

It was only after the Kaokoland trip, sorting the photographs, that I realised that in the vicinity of every stone man we saw, there was one or more *Commiphoras*. It was more likely a case of when we stopped for a stone man, we had time to look around and saw the corkwoods.

The first *Commiphora* with leaves that we saw was a beautiful purple-stem corkwood (*C. multijuga*) at the stone man resting on his back next to a pass through the hills on the way to Marble Camp in the Onjuva area. Laetitia and Salomi saw a *Commiphora angolensis* covered in leaves behind House on the Hill in Marble Camp. House on the Hill has three stone and steel sculptures.

I photographed a *Commiphora wildii* over lunch the next day on a hot, sandy little plain enclosed by rocky hills and big boulders. Our guides dubbed one of the boulders 'the ice-bear' since, viewed from the right angle, it looked like one. The two, tell-tale oak-like leaves that made identification possible, I only noticed afterwards in the photographs.

As you will see from our tree list, we saw nine *Commiphora* species and not all of them had leaves. According to the second edition of *Le Roux and Muller's Field Guide to the Trees & Shrubs of Namibië* (revised and expanded by Coleen Mannheimer and Barbara Curtis) 31 *Commiphora* species are known to occur in Namibië, six of which were recently described.

As to the outcome of the bet, my adversary was not so sure that we saw enough leaves for the bet to be considered won, but as they say at Loftus, a win is a win.

List of photographed *Commiphoras* - June 2021

Commiphora angolensis

At House on the Hill, Marble Camp.
Stone man in front of House on the Hill.



Photo by K Schoeman



Photo by L Steynberg

Commiphora dinteri
In Kuiseb Canyon en route to Walvis Bay in southern Namibië.
Identification based on distribution map.



Photo by M Greeff

Commiphora discolor
At Twyfelfontein
Lodge, Damaraland (probably cultivated)



Photo by L Steynberg

Commiphora glaucescens
At Sesriem filling station, Sossusvlei and in Kaokoland.



Photo by M Greeff



Photo by M Greeff

Commiphora kaokoensis
Vicinity Serra Cafema, Kunene River



Photo by H Portwig



Photo by M Greeff



About *Commiphora*, stone men and the bet

Commiphora multijuga
Next to stone man near Marble Camp



Photo by K Schoeman



Photo by M Greeff

Commiphora virgata
At stone man hanging from rock.



Photo by M Greeff



Photo by M Greeff

Commiphora crenato-serrata
Ice bear rock area



Photo by H Portwig



Photo by M Greeff

Commiphora wildii
Ice bear rock area



Photo by M Greeff



LEONORA VISAGIE, INWONER VAN NEGESTER

Nou dat die bosveldbome hulle blare afgegooi het, sien ons hier hoog teen die klipperige randjies bome met spookagtige wit stamme. Dit is papierbasvalsdorings. Hulle is glad nie familie van die papierbasdorings (*Vachelia sieberiana*) nie.

Ons val net-net in die suidelikste deel van hulle verspreidingsgebied. Die bas is glad met dun, rooi papieragtige buitebas wat mettertyd afskilfer en opaalagtige binnebas onthul. In die lente sien mens ook hulle mooi plusagtige wit blomme.

Die hout het geen kommersiële waarde nie en die houtsaagels irriteer die neus en keel. Jong peule is giftig en veroorsaak albioze by beeste.

Dit is 'n baie mooi boom wat goed in ons tuine sal aard en is ook by sommige inheemse kwekerie beskikbaar is. Nou dat ons ingegrendel is, kyk ek met nog groter waardering na die bome in ons aftree-oord. Die tontelhout, tinderwood in engels, gee my verseker die meeste plesier.

Hierdie boom het 'n digte, donkergroen blaredos met wit blommetjies in die somer wat later geelwit bessies word. Daar is altyd ruspes, skoenlappers of motte by die boom. Dit lok natuurlik weer 'n hele klomp verskillende voëls - altyd iets moois om te sien. 'n Bosveldvisvangerpaartjie het ons in die hoogsomer baie plesier met hul interessante gedrag, gegee. Daardie tyd was daar teen sononder baie groot, vet motte by die tontelhout se blomme. Een aand duik daar skielik 'n bosveldvisvanger in die boomlower in en kom dadelik, baie vinnig met 'n groot mot in sy bek, uitgevlieg. Sy maat het gou in die feesmaal kom deel. Die voëls het herhaaldelik ingedui, 'n mot gevang en weggevlieg daarmee. Dit moes seker etenstyd in die naby geleë nes gewees het. Na omtrent 'n week het twee jong visvangers saam met hulle gekom. Die twee jongetjies sit natuurlik net op 'n tak daar naby en pa en ma moet kos aandra! Na nog 'n paar dae was almal weg en was daar ook omtrent nie meer 'n mot oor nie.

Hierdie boom het vele gebruike: soos sy naam aandui is sy fynhoutjies uitstekend om 'n vuur mee te begin. Verder ruik sy blare baie sleg as dit gekneus word (sy ander naam is juis "stinkboom") en dit word gebruik om nie net muishonde nie maar ook hiënas weg te hou. As jy gaan heuning uithaal, smeer net van



Papierbasvalsdorings (*Albizia tanganyicensis* subsp. *tanganyicensis*)



Tontelhout - *Volkameria* [voorheen *Clerodendrum*] *glabrum*

die gekneusde blare aan jou gesig en arms en die bye bly weg. Netso word die melksap gebruik om bosluise weg te hou.

Ek wonder of ons klinieksuster weet waarvoor hierdie wonderlike boom verder alles gebruik kan word: die wortels teen slangbyt, die blare vir hoes, verkoue, koors, prolaps, wonde en diarree. Gekneusde blare in die armholtes sorg ook dat mens lekker, sonder nare drome, kan slaap.

Hierdie bome vertoon pragtig in 'n klein tuintjie en is ook algemeen by inheemse kwekerie beskikbaar.

Net buite Negester se hek, hier by ons, groei 'n baie interessante plant, die bobbejaangif (*Adenia glauca*) ook nooiensboud of "blue leaved elephant's foot" genoem. Dit is 'n rankplant met 'n vreemde geswolle "voet" en slingerende stingels. Tydens goeie jare stoor die plant water in hierdie knol. Dit groei dan ook in die droogste dele van Suid-Afrika.

Dit is bladwisselend en dra van Augustus tot Januarie geel blommetjies. Manlike en vroulike blomme word op verskillende plante gedra. Die groen vruggies word oranje-rooi as dit ryp is. Die plant is gesog by versamelaars en groei maklik van saad of steggies. Nooiensboud se blare en stingels is giftig.



Bobbejaangif (*Adenia glauca*)



Vrugte van die bobbejaangif



NAAS GROVÉ

Dombeya rotundifolia var. *rotundifolia* – die plant het oor die jare talle name gehad: gewone drolpeer / drolpeer / buffelspeer / dikbas / blomhout / bruid-van-die-bosveld / blomhout en deesdae blompeer. Daar is heelwat stories oor die oorsprong van die naam drolpeer. Volgens sommiges het die boom sy oorsprong van die Engelse gehad wat, omdat die blomme soos dié van die peerboom lyk en hulle sonder sukses pere aan die boom gevind het, na die boom as 'n 'droll' (Afrikaans = koddig of snaaks) 'pear' verwys het. Die Boerekrygers wat met die Engelse se onkunde gespot het, het 'droll' toe verander na drol. Die Nederlandse invloed het na die trosse spierwit blomme verwys as 'n 'fraaie bruidsjurk', vandaar die Afrikaanse streeksnaam, bruid-van-die-bosveld.

Die oumense was dan ook baie oorspronklik met die Afrikaanse boomname wat dikwels 'n uitstaande kenmerk van die spesie beskryfhet, bv. bokdrol (*Canthium* spp.) wie se vrug soos bokmis lyk, buffelbal met verwysing na die vrug van die bosveldkatjiepiering (*Gardenia* spp.), dopperkiaat = nuttelose hout in teenstelling met die uitstekende hout van kiaat (*Pterocarpus angolensis*), perdepis – nou perdehout omdat die gekneusde blare van *Clausena anisata* var. *anisata* na perde urine ruik, wolwegifboom (*Hyaenanche globosa*) vir vanselfsprekende redes en menigte meer.

Daar is 'n baie ryk Afrikaanse taalkultuurerfenis opgesluit in die gewone- en streeksname, maar soos so baie goed die afgelope >25 jaar verander het, moes die sogenaamde skeld- of kwetsende name ook verander. So is onder andere drolpeer verander na blompeer, al die k...boomname is verander na 'meer polities korrekte' name, soos k..wag-'n-bietjie heet nou wag-'n-bietjedoring, k...boom is nou koraalboom, baster het vals geword (bastersilwerrosyntjie is nou valssilwerrosyntjie en tientalle meer), perdepram het knophout geword, ens., ens.

Dit sou ook waarskynlik met 'high-tea' of in enige betaamlike dame se geselskap onweloweglik wees om woorde soos, pram, pis, drol, baster, ens. in so 'n gesofistikeerde geselskap te gebruik! Die ander, meer geldige rede vir die standaardisering van gewone name is om verwarring uit te skakel. In baie mense se verwysing is dikbas *Dombeya*, terwyl ander dikbas ken as *Lannea discolor*.

Eintlik, om alle verwarring en dubbelsinnigheid uit te skakel het elke plant net een naam, naamlik die botaniese naam wat oor taal- kulturele- en landsgrense dieselfde is. Die boom se naam is dus *Dombeya rotundifolia* var. *rotundifolia*



Clausena anisata var. *anisata* - perdehout



Klein knophout

Meksikaanse poppie

(*ARGEMONE OCHROLEUCA* SUBSP. *OCHROLEUCA*)

GERTIE OOSTHUIZEN

Hierdie nare eenjarige onkruid is volgens National Environment Management: Biodiversity Act – Alien Invasive Species List 2020 (NEM:BA) as ‘n Kategorie 1b indringerplant gelys.

Ander name is witblombloudissel, meksikaanse papawer, geelblombloudissel en in Engels - devil's fig, white-flowered Mexican poppy en prickly poppy.

Die indringer groei op versteurde terrein en kompeteer met inheemse spesies en gesaaides. Dit verskyn tipies op oorbeweide veld en langs paaie. Plante se saad kontamineer graanoeste. Die doringagtige plant en vrugte kan aan skape se wol vasklou. Alle dele van die plant is giftig vir mens en dier.

Die plant kan tot 90 sentimeter hoog groei, die blare is erg stekelig en het 'n blou-groen kleur.

Terwyl die plant nog klein is, kan dit uitgetrek word. Gebruik liefs handskoene. Indien onkruidmiddel gebruik word, moet mens die instruksies lees en die middel baie versigtig aanwend.



As jy hierdie aaklige indringer teëkom, trek handskoene aan om dit te verwyder of skoffel dit uit!





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