

A preliminary check list of flowering plants of the Vaalbos National Park

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A check list of flowering plants has been compiled for the Vaalbos National Park, comprising 334 species. These species represent 211 genera and 65 families. The Monocotyledonae is represented by 10 families (15,6 % of the total number of families) and the Dicotyledonae by 55 families (85,9 %). The life form spectrum of the plants indicates that Vaalbos National Park is a hemicytrophitic-therophytic area.

Key words: check list, flowering plants, Kalahari, Vaalbos National Park

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Introduction

The Vaalbos National Park (VNP) was proclaimed in September 1986 and is situated south of the Vaal River, west of Barkley West. The park is more or less triangular with the Vaal River forming its NW and NE boundaries. It extends from latitude 28°25' to 28°35' south and longitude 24°13' to 24°24' east. It covers approximately 22 696 ha. Phytogeographically it is situated on the south-eastern edge of the Kalahari-Highveld transition zone. This transition zone separates the Zambezian and Karoo-Namib Regional centres of endemism (White 1983).

According to Acocks (1988), the vegetation along the banks of the Vaal River and on the flood plains is part of the False Orange River Broken Veld (Veld Type 40), while the vegetation of the plains consist of Kalahari Thornveld invaded by Karoo (Veld Type 17).

A preliminary investigation of the vegetation at VNP revealed a rich variety in the flora. A floristic analysis and a phytosociological study of the vegetation of nature reserves are priorities for proper planning and management (Edwards 1967; Van Wyk & Breden-

kamp 1986; Bredenkamp & Bezuidenhout 1990). This paper reports on the results of a floristic analysis of the Vaalbos National Park.

Methods

This preliminary check list of flowering plants of VNP was compiled from a collection made by P.C. Zietsman and co-workers as well as H. Bezuidenhout. All specimens were identified by the National Botanical Institute, Pretoria (PRE) and are part of the collection of the herbarium of the National Museum, Bloemfontein (NMB).

Nomenclature and arrangement of families and genera follow Gibbs Russel *et al.* (1985, 1987a, 1987b, 1988) and De Wet *et al.* (1989, 1990). Species are arranged alphabetically under each genus, followed by author citation, collector's number in parenthesis and life form. Specimens collected by Bezuidenhout are indicated by a "B" preceding the collection number.

For comparison with the check list on the flowering plants of the Kalahari Gemsbok National Park (Van Rooyen *et al.* 1988), life form classes were used according to Mueller-Dombois & Ellenberg (1974) and Rutherford & Westfall (1986).

The following classes were used:

Microphanerophytes (M): Perennial plants, usually woody, with mean height of the renewal bud 2-5 m.

Nanophanerophytes (N): Perennial plants, usually woody, with mean height of the renewal buds between 0,7 and 2 m.

Chamaephytes (Ch): Perennial plants, generally woody or partly woody, with mean height of the renewal buds \leq 0,7 m.

Hemicryptophytes (H): Perennial plants, generally herbaceous, with the renewal buds at, or more often, close to ground level, but seldom exceeding 0,1 m in height.

Geophytic cryptophytes (G): Perennial plants, usually herbaceous, with renewal buds below ground level.

Therophytes (T): Ephemeral plants that complete their entire life cycle in one year or less.

Succulents (S), parasites (P) and hydrophytes (Hyd) are also distinguished.

Results and discussion

The 334 species of flowering plants collected at VNP represents 211 genera and 65 families. The Monocotyledonae are represented by 10 families (15,6 % of the total number of families) and the Dicotyledonae by 55 (85,9 %)(Table 1). The Monocotyledonae is represented by 80 species (24 % of the total number of species) and the Dicotyledonae by 254 species (76 %).

Table 1
Families of flowering plants recorded in the Vaalbos National Park, showing the number of genera and species in each family

Families	Genera	Species
Monocotyledonae		
Typhaceae	1	1
Poaceae	34	57
Cyperaceae	5	11
Commelinaceae	1	2
Juncaceae	1	1
Asphodelaceae	2	3
Eriospermaceae	1	1
Hyacinthaceae	1	1
Asparagaceae	1	2
Amaryllidaceae	1	1

Dicotyledonae		
Salicaceae	1	1
Viscaceae	1	1
Santalaceae	1	2
Polygonaceae	3	3
Chenopodiaceae	4	7
Amaranthaceae	7	9
Nyctaginaceae	2	2
Aizoaceae	7	8
Mesembryanthemaceae	2	3
Portulacaceae	1	3
Illecebraceae	2	2
Ranunculaceae	1	1
Papaveraceae	1	1
Brassicaceae	1	1
Capparaceae	3	4
Crassulaceae	2	3
Vahliaceae	1	2
Fabaceae	18	35
Geraniaceae	2	2
Oxalidaceae	1	1
Zygophyllaceae	2	2
Polygalaceae	1	2
Euphorbiaceae	2	3
Anacardiaceae	1	2
Celastraceae	1	1
Rhamnaceae	1	1
Tiliaceae	2	3
Malvaceae	6	9
Sterculiaceae	2	13
Elatinaceae	1	1
Cactaceae	1	1
Combretaceae	1	1
Onagraceae	2	3
Haloragaceae	1	1
Apiaceae	2	2
Ebenaceae	1	1
Oleaceae	1	1
Loganiaceae	1	1
Gentianaceae	1	1
Asclepiadaceae	4	5
Convolvulaceae	4	8
Boraginaceae	3	7
Verbenaceae	3	5
Lamiaceae	4	6
Solanaceae	4	7
Scrophulariaceae	6	13
Selaginaceae	2	3
Bignoniaceae	1	1
Pedaliaceae	2	2
Acanthaceae	3	5
Rubiaceae	2	2
Cucurbitaceae	3	5
Campanulaceae	2	3
Lobeliaceae	1	1
Asteraceae	28	41
Total	211	334

The largest families in VNP are the Poaceae with 57 species (17,1% of all species), the Asteraceae with 41 (12,3%), the Fabaceae with 35 (10,5%) and the Scrophulariaceae

Table 2
A comparison of percentage life form spectra between Vaalbos National Park and some parts of the southern Kalahari

Locality	M	N	Ch	H	G	T	Other
VNP	3	4	16	41	8	25	3
KGNP (Van Rooyen <i>et al.</i> 1988)	1	7	15	31	13	31	1
Southern Kalahari (Leistner 1967)	3	8	14	21	21	33	-

VNP = Vaalbos National Park

KGNP = Kalahari Gemsbok National Park

M = Microphanerophyte; N = Nanophanerophyte; Ch = Chamaephyte; H = Hemicryptophyte; G = Geophytic cryptophyte; T = Therophyte.

and the Sterculiaceae with 13 species each (4%). There are four genera with five or more species, namely *Eragrostis* (11), *Hermannia* (9), *Indigofera* (8) and *Helichrysum* (5).

The life form spectrum of VNP, the Kalahari Gemsbok National Park (KGNP) (Van Rooyen *et al.* 1988) and the southern Kalahari (Leistner 1967) is summarized in Table 2. The VNP forms part of the Savanna Biome as defined by Rutherford & Westfall (1986) in which phanerophytes and hemicryptophytes are the codominant life forms. As was found in the KGNP (Van Rooyen *et al.* 1988), VNP is a hemicryptophytic-therophytic area (66%). The phanerophyte, chamaephyte and geophyte values compare favourably with that of the KGNP (Van Rooyen *et al.* 1988) as well as the southern Kalahari (Leistner 1967).

At the VNP, species of the Karoo-Namib centre are well represented in the herbaceous stratum, whereas in the open shrub and tree strata especially, a number of species of the Zambezian centre are important. These are mainly woody species with relatively deep root systems which enable them to draw on water supplies at deeper soil levels (Werger 1983). The co-existence of ecologically and phytogeographically contrasting species as in the above-mentioned situation is most probably a result of past changes in climate (Werger 1973, 1978, 1983).

Table 3
Check list of flowering plants of the Vaalbos National Park collected between 1988 and 1990 (see text for explanation of abbreviations)

	Life form
ANGIOSPERMAE	
Monocotyledonae	
Typhaceae	
<i>Typha</i> L.	
<i>T. capensis</i> (Rohrb.) N.E. Br. (1074)	H
Poaceae	
<i>Hemarthria</i> R. Br.	
<i>H. altissima</i> (Poir.) Stapf & C.E. Hubb. (1020)	H
<i>Sorghum</i> Moench.	
<i>Sorghum</i> sp. (1019)	H
<i>Chrysopogon</i> Trin.	
<i>C. serrulatus</i> Trin. (B198)	H
<i>Cymbopogon</i> Spreng.	
<i>C. plurinodis</i> (Stapf) Stapf ex Burt Davy (767)	H
<i>Heteropogon</i> Pers.	
<i>H. contortus</i> (L.) Roem. & Schult. (716, 855, 915)	H
<i>Themeda</i> Forssk.	
<i>T. triandra</i> Forssk. (727, 822)	H
<i>Digitaria</i> Haller	
<i>D. eriantha</i> Steud. (911)	H
<i>Brachiaria</i> Griseb.	
<i>B. marlothii</i> (Hack.) Stent (924, 1008)	H
<i>B. nigropedata</i> (Fical. & Hiern) Stapf (700)	H
<i>Paspalum</i> L.	
<i>P. dilatatum</i> Poir. (1089)	H
<i>Urochloa</i> Beauv.	
<i>U. panicoides</i> Beauv. (1011)	T
<i>Panicum</i> L.	
<i>P. coloratum</i> L. var. <i>coloratum</i> (845, 1082)	H
<i>P. maximum</i> Jacq. (1078)	H
<i>P. impeditum</i> Launert (1963)	T
<i>Setaria</i> Beauv.	
<i>S. verticillata</i> Beauv. (759, 990)	T

<i>Melinis</i> Beauv.		<i>E. scoparius</i> Stapf (728)	H
<i>M. nerviglumis</i> (Franch.) Zizka (1110)	H	<i>Schmidtia</i> Steud.	
<i>M. repens</i> (Willd.) Zizka subsp. <i>repens</i> (810)	T	<i>S. pappophorooides</i> Steud. (286, 389, 732)	H
<i>Tricholaena</i> Schult.		<i>Fingerhuthia</i> Nees	
<i>T. monachne</i> (Trin.) Stapf & C.E. Hubb.		<i>F. africana</i> Lehm. (993)	H
(1006, 1010)	H		
<i>Anthephora</i> Schreb.		Cyperaceae	
<i>A. pubescens</i> Nees (B227)	H	<i>Cyperus</i> L.	
<i>Cenchrus</i> L.		<i>C. eragrostis</i> Lam. (1043)	H
<i>C. ciliaris</i> L. (857, 999)	H	<i>C. fulgens</i> C.B. Cl. var. <i>fulgens</i> (1997)	H
<i>C. incertus</i> M.A. Curtis (B197)	T	<i>C. longus</i> L. var. <i>longus</i> (1057)	H
<i>Agrostis</i> L.		<i>C. margaritaceus</i> Vahl (817)	H
<i>A. lachnantha</i> Nees var. <i>lachnantha</i> (1021)	H	<i>C. marginatus</i> Thunb. (1046)	H
<i>Stipagrostis</i> Nees		<i>Mariscus</i> Gaertn.	
<i>S. obtusa</i> (Del.) Nees (1090)	H	cf. <i>M. chersinus</i> N.E. Br. (814)	H
<i>S. uniplumis</i> (Licht.) De Winter		<i>M. rehmannianus</i> C.B. Cl. (788)	H
var. <i>uniplumis</i> (B233)	H	<i>Kyllinga</i> Rottb.	
<i>Aristida</i> L.		<i>K. alba</i> Nees (400, 729, 841)	H
<i>A. adscensionis</i> L. (994)	T	<i>Schoenoplectus</i> Palla	
<i>A. congesta</i> Roem. & Schult. subsp. <i>barbicollis</i>		<i>S. lacustris</i> (L.) Palla (1041)	H
(Trin. & Rupr.) De Winter (B229)	H	<i>S. muricinus</i> (C.B. Cl.) J. Raynal (693, 887)	H
<i>A. congesta</i> Roem. & Schult. subsp. <i>congesta</i> (720)	H	<i>Fimbristylis</i> Vahl	
<i>A. meridionalis</i> Henr. (691)	H	<i>F. hispidula</i> (Vahl) Kunth (B195)	G
<i>Tragus</i> Haller			
<i>T. berteronianus</i> Schult. (987)	T	Commelinaceae	
<i>T. racemosus</i> (L.) All. (737)	T	<i>Commelina</i> L.	
<i>Sporobolus</i> R. Br.		<i>C.</i> cf. <i>africana</i> L. var. <i>barberae</i>	
<i>S. coromandelianus</i> (Retz.) Kunth (750)	H	(C.B. Cl.) C.B. Cl. (871)	H
<i>S. fimbriatus</i> (Trin.) Nees (B226)	H	<i>C. livingstonii</i> C.B. Cl. (776, 875)	H
<i>S. ludwigii</i> Hochst. (1964)	H		
<i>Eragrostis</i> Beauv.		Juncaceae	
<i>E. bicolor</i> Nees (1094)	H	<i>Juncus</i> L.	
<i>E. curvula</i> (Schrad.) Nees (1103)	H	<i>J. exsertus</i> Buchen. subsp. <i>exsertus</i> (1059)	H
<i>E. echinochloidea</i> Stapf (679, 830, 1077)	H		
<i>E. lehmanniana</i> Nees var. <i>lehmanniana</i>		Asphodelaceae	
(709, 844, 992)	H	<i>Bulbine</i> Willd.	
<i>E. obtusa</i> Munro ex Fical. & Hiern (991)	H	<i>B. abyssinica</i> A. Rich. (408)	G
<i>E. pallens</i> Hack. (812)	H	<i>B. narcissifolia</i> Slam-Dyck (420) (1088)	G
<i>E. porosa</i> Nees (978)	T	<i>Trachyandra</i> Kunth	
<i>E. rotifer</i> Rendle (1981)	H	<i>T. laxa</i> (N.E. Br.) Oberm. var. <i>rigida</i>	
<i>E. superba</i> Peyr. (752, 1022)	H	(Suesseng.) Roessl. (898)	G
<i>E. trichophora</i> Coss & Dur. (715a, 1023)	H		
<i>E. x pseud-obtusa</i> De Winter (741)	H	Eriospermeaceae	
<i>Cynodon</i> Rich. ex Pers.		<i>Eriospermum</i> Jacq. ex Willd.	
<i>C. dactylon</i> (L.) Pers. (765, 985, 1035)	H	<i>Eriospermum</i> sp. (1072)	G
<i>Chloris</i> Swartz			
<i>C. virgata</i> Swartz (1007)	T	Hyacinthaceae	
<i>Eustachys</i> Desv.		<i>Dipcadi</i> Medik.	
<i>E. paspaloides</i> (Vahl) Lanza & Mattei (891)	H	<i>D. viride</i> (L.) Moench (975)	G
<i>Eleusine</i> Gaertn.			
<i>E. coracana</i> (L.) Gaertn. subsp. <i>africana</i>		Asparagaceae	
(K.-O'Byrne) Hilu & De Wet (927)	T	<i>Protasparagus</i> Oberm.	
<i>Pogonarthria</i> Stapf		<i>P. larinicus</i> (Burch.) Oberm. (884) (1101)	Ch
<i>P. squarrosa</i> (Roem. & Schult.) Pilg. (717)	H	<i>P. suaveolens</i> (Burch.) Oberm. (391) (740)	Ch
<i>Coelachyrum</i> Hockst. & Nees			
<i>C. yemenicum</i> (Schweinf.) S.M. Phillips	H	Amaryllidaceae	
<i>Diplachne</i> Beauv.		<i>Nerine</i> Herb.	
<i>D. fusca</i> (L.) Beauv. ex Roem. & Schult. (B225)	H	<i>N. laticoma</i> (Ker-Gawl.)	
<i>Trichoneura</i> N.J. Anderss.		Dur. & Schinz (905) (1093)	G
<i>T. grandiglumis</i> (Nees) Ekman (B188)	H		
<i>Enneapogon</i> Desv. ex Beauv.		Dicotyledonae	
<i>E. cenchroides</i> (Roem. & Schult.) C.E. Hubb.		Salicaceae	
(890, 988)	T	<i>Salix</i> L.	
<i>E. desvauxii</i> Beauv. (B190)	H	<i>S. capensis</i> Thunb. (1060)	M

Viscaceae		<i>G. pharnacioides</i> L. (694)(807)	T
<i>Viscum</i> L.		<i>Hypertelis</i> E. Mey. ex Fenzl	
<i>V. rotundifolium</i> L.f. (895)	P	<i>H. salsoloides</i> (Burch.) Adamson (771)	T
Santalaceae		<i>Corbichonia</i> Scop.	
<i>Thesium</i> L.		<i>C. decumbens</i> (Forssk.) Exell (439, 865, 909)	H
<i>T. lineatum</i> L.f. (723, 1102)	P	<i>Plinthus</i> Fenzl	
<i>Thesium</i> sp. (809)	P	<i>P. karoocicus</i> Verdoorn (1967)	Ch
Polygonaceae		<i>Galenia</i> L.	
<i>Rumex</i> L.		<i>G. procumbens</i> L.f. (1034)	Ch
<i>R. lanceolatus</i> Thunb. (1100)	T	<i>Tetragonia</i> L.	
<i>Polygonum</i> L.		<i>T. macroptera</i> Pax (1955)	Ch
<i>P. hystriculium</i> Schuster (1047)	T	Mesembryanthemaceae	
<i>Oxygonum</i> Burch.		<i>Mestoklema</i> N.E. Br.	
<i>O. alatum</i> Burch. (821)	T	<i>M. arboriforme</i> (Burch.) N.E. Br. ex Glen (1107)	S
Chenopodiaceae		<i>Ruschia</i> Schwant.	
<i>Chenopodium</i> L.		<i>R. cf. putterillii</i> (L. Bol.) L. Bol. (903)	S
<i>C. album</i> L. (925)	T	<i>Ruschia</i> sp. (1045)	S
<i>C. hederiforme</i> (Murr.) Aell. var. <i>dentatum</i> Aell. (1003)	T	Portulacaceae	
<i>Atriplex</i> L.		<i>Portulaca</i> L.	
<i>A. lindleyi</i> Moq. subsp. <i>quadripartita</i> P.G. Wilson (1056)	H	<i>P. kermesina</i> N.E. Br. (920)	T
<i>A. semibaccata</i> R. Br. var. <i>typica</i> Aell. (754, 1083, 1068)	H	<i>P. oleracea</i> L. (1061)	T
<i>Salsola</i> L.		<i>P. quadrifida</i> L. (919)	T
<i>S. glabrescens</i> Burt Davy (1025)	Ch	Illecebraceae	
<i>S. kali</i> L. (753, 1081)	T	<i>Pollichia</i> Ait.	
<i>Lophiocarpus</i> Turcz.		<i>P. campestris</i> Ait. (868)	H
<i>L. polystachyus</i> Turcz. (876)	H	<i>Herniaria</i> L.	
Amaranthaceae		<i>H. erckertii</i> Herm. subsp. <i>pulvinata</i> Chaudhri (398)	H
<i>Hemibstaedtia</i> Reichb.		Ranunculaceae	
<i>H. odorata</i> (Burch.) T. Cooke var. <i>odorata</i> (736)	H	<i>Ranunculus</i> L.	
<i>Amaranthus</i> L.		<i>R. multifidus</i> Forssk. (1048)	T
<i>A. praetermissus</i> Brenan (B191)	T	Papaveraceae	
<i>A. retroflexus</i> L. var. <i>retroflexus</i> (1009)	T	<i>Argemone</i> L.	
<i>Amaranthus</i> sp. L. (1009)	T	<i>A. subfusiformis</i> G.B. Ownbey (762, 1029)	T
<i>Kyphocarpa</i> (Fenzl) Lopr.		Brassicaceae	
<i>K. angustifolia</i> (Moq.) Lopr. (787)	Ch	<i>Lepidium</i> L.	
<i>Sericorema</i> Lopr.		<i>L. myriocarpum</i> Sond. (1027)	T
<i>S. sericea</i> (Schinz) Lopr. (B194)	T	Capparaceae	
<i>Pupalia</i> Juss.		<i>Cleome</i> L.	
<i>P. lappacea</i> (L.) Juss. (881)	T	<i>C. gynandra</i> L. (824, 1085)	T
<i>Alternanthera</i> Forssk.		<i>C. rubella</i> Burch. (708, 867)	T
<i>A. nodiflora</i> R. Br. (1055, 1075)	T	<i>Boscia</i> Lam.	
<i>A. pungens</i> H.B.K. (1014)	T	<i>B. albitrunca</i> (Burch.) Gilg & Ben. var. <i>albitrunca</i> (912)(1116)	M
<i>Gomphrena</i> L.		<i>Cadaba</i> Forssk.	
<i>G. celosioides</i> Mart. (395, 684, 749)	T	<i>C. aphylla</i> (Thunb.) Wild (440)	N
Nyctaginaceae		Crassulaceae	
<i>Commicarpus</i> Standley		<i>Kalanchoe</i> Adans.	
<i>C. pentandrus</i> (Burch.) Heimerl (768, 1099)	H	<i>K. rotundifolia</i> (Haw.) Haw. (908)	S
<i>Boerhavia</i> L.		<i>Crassula</i> L.	
<i>B. cordobensis</i> Kuntze (866, 996)	H	<i>C. lanceolata</i> (Eckl. & Zeyh.) Endl. ex Walp. subsp. <i>lanceolata</i> (777)	S
Aizoaceae		<i>C. lanceolata</i> (Eckl. & Zeyh.) Endl. ex Walp. subsp. <i>transvaalensis</i> (Kuntze) Toelken (918)	S
<i>Limeum</i> L.		Vahliaceae	
<i>L. aethiopicum</i> Burm. subsp. <i>namaense</i> Friedr. var. <i>lanceolatum</i> Friedr. (1954)	T		
<i>L. fenestratum</i> (Fenzl) Heimerl var. <i>fenestratum</i> (819)	T		
<i>Gisekia</i> L.			

<i>Vahlia</i> Thunb.		<i>Z. milneana</i> Mohlenbr. (930)	H
<i>V. capensis</i> (L.f.) Thunb. subsp. <i>sulgaris</i> Bridson		<i>Rhynchosia</i> Lour.	
var. <i>linearis</i> E. Mey. ex Bridson (406, 799, 1084)	H	<i>R. confusa</i> Burt Davy (713)	H
<i>V. capensis</i> (L.f.) Thunb. subsp. <i>vulgaris</i> Bridson		<i>R. totta</i> (Thunb.) DC. var. <i>totta</i> (B231)	N
var. <i>vulgaris</i> (888)	H	<i>R. venulosa</i> (Hiern) K. Schum. (1990)	H
Fabaceae		Geraniaceae	
<i>Acacia</i> Mill.		<i>Monsonia</i> L.	
<i>A. erioloba</i> E. Mey. (847)	M	<i>M. angustifolia</i> E. Mey. ex A. Rich. (772, 854)	T
<i>A. hebeclada</i> DC. subsp. <i>hebeclada</i> (B199)	N	<i>Pelargonium</i> L'Herit.	
<i>A. karroo</i> Hayne (1040)	M	<i>P. minimum</i> (Cav.) Willd. (793)	H
<i>A. mellifera</i> (Vahl) Benth. subsp. <i>detinens</i> (Burch.)		Oxalidaceae	
Brenan (392)	N	<i>Oxalis</i> L.	
<i>A. tortilis</i> (Forssk.) Hayne subsp. <i>heteracantha</i>		<i>Oxalis</i> sp. (921, 922)	G
(Burch.) Brenan (969)	N	Zygophyllaceae	
<i>Elephantorrhiza</i> Benth.		<i>Zygophyllum</i> L.	
<i>Elephantorrhiza</i> sp. (835)	G	<i>Z. pubescens</i> Schinz (425)	Ch
<i>Chamaecrista</i> Moench		<i>Tribulus</i> L.	
<i>C. biensis</i> (Steyaert) Lock (714, 811)	G	<i>T. cf. terrestris</i> L. (790, 837)	T
<i>Senna</i> L.		Polygalaceae	
<i>S. italica</i> (Mill.) Lam. ex F.W. Andr. subsp.		<i>Polygala</i> L.	
<i>arachoides</i> (Burch.) Brenan (696, 780, 1053)	G	<i>P. cf. hottentotta</i> Presl (396)	H
<i>Caesalpinia</i> L.		<i>P. leptophylla</i> Burch. (702)	Ch
<i>C. gilliesii</i> (Wall. ex Hook.) Benth. (433)		Euphorbiaceae	
<i>Lotononis</i> (DC.) Eckl. & Zeyh.		<i>Phyllanthus</i> L.	
<i>L. crumanina</i> Burch. ex Benth. (836)	T	<i>P. maderaspatensis</i> L. (785, 828, 863)	T
<i>L. curtii</i> Harms (789)	T	<i>Chamaesyce</i> S.F. Gray	
<i>L. listii</i> Polhill (685, 858)	T	<i>C. inaequilatera</i> (Sond.) Sojak (820)	T
<i>L. platycarpa</i> (Viv.) Pichi Serm. var. <i>abyssinica</i>		<i>C. prostrata</i> (Ait.) Small (1086)	T
(Hochst. ex A. Rich.) Pichi Serm. (71, 870)	T	Anacardiaceae	
<i>Crotalaria</i> L.		<i>Rhus</i> L.	
<i>C. lotoides</i> Benth. (690, 984)	Ch	<i>R. ciliata</i> Licht. & Schult. (733, 995)	Ch
<i>C. sphaerocarpa</i> Perr. ex DC. (683)	N	<i>R. lancea</i> L.f. (803, 1015)	M
<i>Medicago</i> L.		Celastraceae	
<i>M. laciniata</i> (L.) Mill. (410)	H	<i>Maytenus</i> Molina	
<i>Indigofera</i> L.		<i>M. heterophylla</i> (Eckl. & Zeyh.) N.K.B. Robson	
<i>I. alternans</i> DC. var. <i>alternans</i> (699)	H	(B230)	M
<i>I. argyrea</i> Eckl. & Zeyh. (784)	H	Rhamnaceae	
<i>I. cryptantha</i> Benth. ex Harv.		<i>Ziziphus</i> Mill	
var. <i>cryptantha</i> (91)	H	<i>Z. mucronata</i> Willd. subsp. <i>mucronata</i> (738, 838)	M
<i>I. daleoides</i> Benth. ex Harv.		Tiliaceae	
var. <i>daleoides</i> (711)	H	<i>Corchorus</i> L.	
<i>I. filipes</i> Benth. ex Harv. (701)	H	<i>C. asplenifolius</i> Burch. (434)	H
<i>I. praticola</i> Bak. f. (976)	H	<i>C. schimperi</i> Cufod. (103, 1975)	H
<i>I. vivioides</i> Jaub. & Spach		<i>Grewia</i> L.	
var. <i>vivioides</i> (432, 707)	H	<i>G. flava</i> DC. (401, 739, 839)	M
<i>I. parviflora</i> Heyne ex Wight & Arn.		Malvaceae	
var. <i>parviflora</i> (B193)	H	<i>Abutilon</i> Mill	
<i>Cullen</i> Medik.		<i>Abutilon</i> sp. (899)	H
<i>C. obtusifolia</i> (DC.) C.H. Stirton (412, 916)	H	<i>Sphaeralcea</i> St. Hil.	
<i>Ptychobium</i> Harms.		<i>S. bonariensis</i> (Cav.) Griseb. (1033)	Ch
<i>P. biflorum</i> (E. Mey.) Brummitt		<i>Malva</i> L.	
subsp. <i>biflorum</i> (829)	Ch	<i>M. pusilla</i> Sm. (766)	H
<i>Tephrosia</i> Pers.		<i>Sida</i> L.	
<i>T. burchellii</i> Burt Davy (705, 818, 983)	H	<i>S. cordifolia</i> L. (972)	H
<i>Requienia</i> DC.			
<i>R. sphaerosperma</i> DC. (840)	G		
<i>Sesbania</i> Scop.			
<i>S. notialis</i> J.B. Gillett (889, 1051)	Ch		
<i>Sutherlandia</i> R. Br. ex Ait. f.			
<i>S. frutescens</i> R. Br. (416)	Ch		
<i>Lessertia</i> DC.			
<i>L. cf. depressa</i> Harv. (801, 827)	H		
<i>Zornia</i> J.F. Gmel.			

<i>S. dregei</i> Burttt Davy (1013)	H	Loganiaceae	
<i>S. pseudocordifolia</i> Hockr. (892)	H	<i>Gomphostima</i> Turcz.	
<i>Pavonia</i> Cav.		<i>G. virgatum</i> (L.f.) Baill. (1080)	Ch
<i>P. burchellii</i> (DC.) R.A. Dyer (974)	H		
<i>Hibiscus</i> L.		Gentianaceae	
<i>H. marlothianus</i> K. Schum. (774, 778)	H	<i>Sebaea</i> Soland. ex R. Br.	
<i>H. pusillus</i> Rhunb. (B232)	Ch	<i>S. grandis</i> (E. Mey.) Steud. (928)	T
Sterculiaceae		Asplepiadaceae	
<i>Melhania</i> Forssk.		<i>Asplepias</i> L.	
<i>M. prostrata</i> DC. (896)	H	<i>A. burchellii</i> Schltr. (816)	Ch
<i>M. rehmannii</i> Szyszyl. (901, 805)	H	<i>A. fruticosa</i> L. (971)	Ch
<i>M. virescens</i> (K. Schum.) K. Schum. (832)	H	<i>Sarcostemma</i> R.Br.	
<i>Hermannia</i> L.		<i>S. viminalis</i> (L.) R. Br. (882)	Ch
<i>H. affinis</i> K. Schum. (423, 914)	H	<i>Pentarrhinum</i> E. Mey.	
<i>H. comosa</i> Burch. ex DC. (426, 697)	H	<i>P. insipidum</i> E. Mey. (706)	G
<i>H. eenii</i> Bak.f. (719, 1104)	H	<i>Fockea</i> Endl.	
<i>H. erodioides</i> (Burch. ex DC) Kuntze (403, 797, 1005)	H	<i>F. angustifolia</i> K. Schum. (877)	G
<i>H. jacobaeifolia</i> (Turcz.) R.A. Dyer (862)	H		
<i>H. linnaeoides</i> (Burch.) K. Schum. (826)	H	Convolvulaceae	
<i>H. martiniana</i> A. Rich. subsp. <i>stellulata</i> (K. Schum.) De Winter (913)	H	<i>Seddera</i> Hochst.	
<i>H. stellulata</i> (Harv.) K. Schum. (414)	H	<i>S. capensis</i> (E. Mey. ex Choisy) Hallier f. (879)	G
<i>H. tomentosa</i> (Turcz.) Schinz ex Engl. (394, 848)	H	<i>Convolvulus</i> L.	
<i>Hermannia</i> sp. (419, 721)	H	<i>C. arvensis</i> L. (1076)	G
		<i>C. boedeckerianus</i> Peter (792)	G
		<i>C. multifidus</i> Thunb. (873)	G
		<i>C. sagittatus</i> Thunb.	
		subsp. <i>sagittatus</i> var. <i>sagittatus</i> (1016)	G
		<i>Merremia</i> Dennst.	
Elatinaceae		<i>M. tridentata</i> (L.) Hallier f. subsp. <i>angustifolia</i> (Jacq.) Oosterstr. var. <i>angustifolia</i> (869)	G
<i>Bergia</i> L.		<i>M. verecunda</i> Rundle (703, 929)	G
<i>B. anagalloides</i> E. Mey. ex Fenzl (404, 748)	T	<i>Ipomoea</i> L.	
		<i>I. obscura</i> (L.) Ker-Gawl. var. <i>obscura</i> (872)	G
Cactaceae			
<i>Opuntia</i> Mill.		Boraginaceae	
<i>Opuntia</i> sp. (973)	N	<i>Ehretia</i> P.Br.	
		<i>E. regida</i> (Thunb.) Druce (852, 981)	N
Combretaceae		<i>Heliotropium</i> L.	
<i>Combretum</i> Loeft.		<i>H. ciliatum</i> Kaplan (804)	H
<i>C. erythrophyllum</i> (Burch.) Sond. (1062)	M	<i>H. lineare</i> (A.DC.) C.H. Wr. (742, 1105)	H
		<i>H. ovalifolium</i> Forssk. (1070)	H
Onagraceae		<i>H. steudneri</i> Vatke (417)	T
<i>Ludwigia</i> L.		<i>Lithospermum</i> L.	
<i>L. cf. abyssinica</i> A. Rich. (1032)	T	<i>L. cinerium</i> DC. (710)	H
<i>L. cf. stolonifera</i> (Guill. & Perr.) Raven (1049)	T	<i>L. cf. officinale</i> L. (718)	H
<i>Oenothera</i> L.			
<i>O. rosea</i> L'Herit. ex Ait. (904, 1039)	T	Verbenaceae	
		<i>Verbena</i> L.	
Haloragaceae		<i>V. bonariensis</i> L. (692, 1017)	Ch
<i>Myriophyllum</i> L.		<i>V. officinalis</i> L. (886, 1058)	Ch
<i>M. spicatum</i> (1024)	Hyd	<i>V. venosa</i> Gill. & Hook. (1069)	Ch
		<i>Lantana</i> L.	
Apiaceae		<i>L. rugosa</i> Thunb. (1004, 874)	Ch
<i>Deverra</i> DC.		<i>Plexipus</i> Rafin.	
<i>D. burchellii</i> (DC.) Eckl. & Zeyh. (1106)	H	<i>P. pinnatifidus</i> (L.f.) R. Fernandes var. <i>pinnatifidus</i> (906, 1087)	H
<i>Choritaenia</i> Benth.			
<i>C. capensis</i> (Sond. & Harv.) Burttt Davy (427)	T	Lamiaceae	
		<i>Acrotome</i> Benth.	
Ebenaceae		<i>A. inflata</i> Benth. (933)	T
<i>Diospyros</i> L.		<i>Leucas</i> Burm. ex R. Br.	
<i>D. lycioides</i> Desf. subsp. <i>lycioides</i> (430, 744, 1063)	N	<i>L. capensis</i> (Benth.) Engl. (437, 731, 761, 831)	T
		<i>Salvia</i> L.	
Oleaceae			
<i>Menodora</i> Humb. & Bonpl.			
<i>M. africana</i> Hook. (346, 1111)	H		

<i>S. runcinata</i> L.f. (851)	H	Acanthaceae	
<i>S. spathulata</i> Burch. ex Benth. (795)	H	<i>Reulltopsia</i> C.B. Cl.	
<i>S. stenophylla</i> Burch. ex Benth. (1112)	H	<i>R. setosa</i> (Nees) C.B. Cl. (923)	Ch
<i>S. verbenaca</i> L. (1969)	H	<i>Barleria</i> L.	
<i>Ocinum</i> L.		<i>B. bechuanensis</i> C.B. Cl. (1012)	H
<i>O. canum</i> Sims (850, 1044)	H	<i>B. macrostegia</i> Nees (682, 997)	H
		<i>B. rigida</i> Nees (725)	H
		<i>Monechma</i> Hochst.	
		<i>M. incanum</i> (Mees) C.B. Cl. (424)	Ch
Solanaceae			
<i>Lycium</i> L.			
<i>L. hirsutum</i> Dun. (390)	N		
<i>Solanum</i> L.		Rubiaceae	
<i>S. coccineum</i> Jacq. (900)	Ch	<i>Kohautia</i> Cham. & Schlecht.	
<i>S. nigrum</i> L. (833, 980)	Ch	<i>K. cynanchica</i> DC. (345, 843, 1113)	H
<i>S. panduriforme</i> E. Mey. (893)	Ch	<i>Anthospermum</i> L.	
<i>Datura</i> L.		<i>A. pumilum</i> Sond. subsp. <i>regidum</i> (Eckl. & Zeyh.)	
<i>D. stramonium</i> L. (970)	T	Puff (783)	Ch
<i>Nicotiana</i> L.			
<i>N. glauca</i> R.C. Grah. (897)	N	Cucurbitaceae	
<i>N. longiflora</i> Cav. (1006, 825)	Ch	<i>Acanthosicyos</i> Welw. ex Hook.f.	
		<i>A. naudinianus</i> (Sond.) C. Jeffrey (813, 931, 968)	G
		<i>Cucumis</i> L.	
Scrophulariaceae		<i>C. africanus</i> L.f. (760)	T
<i>Aptosimum</i> Burch.		<i>C. myriocarpus</i> Naud. subsp. <i>myriocarpus</i> (1042)	T
<i>A. albomarginatum</i> Marloth & Engl. (431, 833)	Ch	<i>Coccinia</i> Wight & Arn.	
<i>A. indivisum</i> Burch. ex Benth. (1108)	H	<i>C. sessilifolia</i> (Sond.) Cogn. (885, 894)	G
<i>A. lineare</i> Marloth & Engl. (775)	H	<i>C. cf. rehmannii</i> Cogn. (1050)	G
<i>A. marlothii</i> (Engl.) Hiern (907)	Ch		
<i>Peltostomum</i> Benth.		Campanulaceae	
<i>P. leucorrhizum</i> E. Mey. ex Benth.		<i>Wahlenbergia</i> Schrad. ex Roth	
var. <i>linearifolium</i> Weber (407, 796)	Ch	<i>W. androsacea</i> A. DC. (415)	T
<i>P. leucorrhizum</i> E. Mey. ex Benth.		<i>W. virgata</i> Engl. (704) (786)	T
var. <i>leucorrhizum</i> (773)	Ch	<i>Lightfootia</i> L. Herit.	
<i>Nemesia</i> Vent.		<i>L. nodosa</i> Beuk (735)	Ch
<i>N. floribunda</i> Lehm. (397)	T		
<i>N. fruticans</i> (Thunb.) Benth. (680)	T	Lobeliaceae	
<i>Diclis</i> Benth.		<i>Lobelia</i> L.	
<i>D. petiolaris</i> Benth. (798)	H	<i>L. angolensis</i> Engl. & Diels (405, 800)	H
<i>Sutera</i> Roth			
<i>S. aurantiaca</i> (Burch.) Hiern (815)	Ch	Asteraceae	
<i>S. caerulea</i> (L.f.) Hiern (681, 781, 1071)	Ch	<i>Aster</i> L.	
<i>S. cf. pimatifida</i> (Benth.) Kuntze (778)	Ch	<i>A. squamatus</i> (Spreng.) Hieron. (1018)	T
<i>Striga</i> Lour.		<i>Felicia</i> Cass.	
<i>S. gesnerioides</i> (Willd.) Vatke ex Engl. (695, 864)	P	<i>F. fascicularis</i> DC. (747, 849)	Ch
		<i>F. muricata</i> (Thunb.) Nees subsp. <i>muricata</i> (860)	Ch
		<i>Nidorella</i> Cass.	
Selaginaceae		<i>N. hottentotica</i> DC. (823)	T
<i>Hebenstretia</i> L.		<i>N. resedifolia</i> DC. subsp. <i>resedifolia</i> (418, 764, 1026)	T
<i>H. dura</i> Choisy (698)	Ch	<i>Conyza</i> Less.	
<i>Walafrida</i> E. Mey.		<i>C. bonariensis</i> (L.) Cronq. (856)	T
<i>W. densiflora</i> (Rolf) Rolf (428, 686, 730)	Ch	<i>Tarchoanthus</i> L.	
<i>W. geniculata</i> (L.f.) Rolf (757)	Ch	<i>T. camphoratus</i> L. (734, 853)	N
		<i>Blumea</i> DC.	
		<i>B. gariepina</i> DC.	Ch
Bigoniaceae		<i>Denekia</i> Thunb.	
<i>Rhigozum</i> Burch.		<i>D. capensis</i> Thunb. (794)	T
<i>R. trichotomum</i> Burch. (1091)	N	<i>Pseudognaphalium</i> Kirp.	
		<i>P. oligandrum</i> (DC.) Hilliard & Burt (756, 806)	T
Pedaliaceae		<i>Helichrysum</i> Mill.	
<i>Harpagophytum</i> DC. ex Meissn.		<i>H. arenicola</i> M.D. Henderson (429, 689)	T
<i>H. procumbens</i> (Burch.) DC. ex Meissn.		<i>H. argyrosphaerum</i> DC. (409, 769)	T
subsp. <i>procumbens</i> (688, 1067)	G	<i>H. cerastioides</i> DC. var. <i>cerastioides</i> (722)	T
<i>Sesamum</i> L.		<i>H. lucilloides</i> Less. (441)	T
<i>S. triphyllum</i> Welw. ex Aschers.		<i>H. zeyheri</i> Less. (861)	Ch
var. <i>triphyllum</i> (880)	T		

<i>Rosenia</i> Thunb. emend. Bremer	
<i>R. humilis</i> (Less.) Bremer (1095)	Ch
<i>Pegolettia</i> Cass.	
<i>P. retrofracta</i> (Thunb.) Kies (421, 1092)	Ch
<i>Geigeria</i> Griesselich	
<i>G. filifolia</i> Mattf. (779)	Ch
<i>C. ornativa</i> O. Hoffm. (438, 687, 834)	Ch
<i>Ambrosia</i> L.	
<i>A. artemisiifolia</i> L. (1031)	T
<i>Xanthium</i> L.	
<i>X. spinosum</i> L. (751)	T
<i>Bidens</i> L.	
<i>B. bipinnata</i> L. (802)	T
<i>Flaveria</i> Juss.	
<i>F. bidentis</i> (L.) Kuntze (763, 902, 1097)	T
<i>Schkuhria</i> Roth.	
<i>S. pinnata</i> (Lam.) Cabr. (755, 1098)	T
<i>Cotula</i> L.	
<i>C. anthemoides</i> L.	T
<i>Pentzia</i> Thunb.	
<i>P. globosa</i> Less. (422)	Ch
<i>P. incana</i> (Thunb.) Kuntze (745)	Ch
<i>Senecio</i> L.	
<i>S. consanguineus</i> DC. (926)	T
<i>S. windhoekensis</i> Merxm. (393)	T
<i>Osteospermum</i> L.	
<i>O. muricatum</i> E. Mey. ex DC.	
subsp. <i>muricatum</i> (413, 726, 1109)	Ch
<i>O. scariosum</i> DC. var. <i>scariosum</i> (782)	H
<i>Arctotis</i> L.	
<i>A. leiocarpa</i> Harv. (402)	T
<i>A. venusta</i> T. Norl. (932)	H
<i>Arctotheca</i> Wendl.	
<i>A. calendula</i> (L.) Levyns (411,842)	H
<i>Gazania</i> Gaertn.	
<i>G. krebsiana</i> Less. subsp. <i>serrulata</i> (DC)	
Roessl. (758)	T
<i>Hirpicium</i> Cass.	
<i>H. echinus</i> Less. (808, 982)	H
<i>Berkheya</i> Ehrh.	
<i>B. pinnatifida</i> (Thunb.) Thell.	
subsp. <i>pinnatifida</i> (791)	H
<i>Cirsium</i> Mill. emend. Scop.	
<i>C. vulgare</i> (Savi) Ten. (1030)	Ch
<i>Dicoma</i> Cass.	
<i>C. capensis</i> Less. (399)	H
<i>D. macrocephala</i> DC. (724)	H
<i>D. schinzii</i> O. Hoffm. (998)	H
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