
Check Lists

A Check List of Flowering Plants of the Kalahari Gemsbok National Park

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A check list containing 397 plant species has been compiled for the Kalahari Gemsbok National Park which occupies an area of approximately 9 600 km². These species represent 191 genera and 51 families. The Monocotyledonae are represented by 98 species (24,7% of the total number of species) and the Dicotyledonae by 299 species (75,3% of the total number of species). According to the life form spectrum the Kalahari Gemsbok National Park is a therophyte-hemicryptophyte area.

Key words: Check list, flora, Kalahari, life forms.

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•Introduction

The history of floristic explorations in the southern Kalahari since 1760, when *Acacia erioloba* was recorded by J.C. Jansz, is described by Leistner (1967). The first scientist to collect plants from the eastern fringes of the southern Kalahari was Dr. M.H.K. Lichtenstein in 1805, but it was W.J. Burchell (1822) who laid the foundation of our knowledge of the flora of the southern Kalahari region.

Leistner (1967) compiled a check list of 454 species for the dune-covered southernmost arid part of the whole Kalahari System and referred to it as the southern Kalahari. Leistner (1967) lists a host of collectors whose plant specimens were included in his check list. His study area covered about 124 320 km² and included parts of South West Africa/Namibia and the Republic of Botswana. The Kalahari Gemsbok National Park (KGNP) forms part of the southern Kalahari and covers approximately 9 600 km². It is situated between 24°15'S and 26°30'S latitudes and 20°00'E and 20°45'E longitudes. The

height above sea level varies from about 870 m at Twee Rivieren in the south to 1 080 m at Union's End in the north. There is also an increase in the average annual rainfall from approximately 223 mm in the south to 250 mm in the north, a distance of some 160 kilometers.

Descriptions of the plant ecology of the KGNP can be found in Story (1958), Brynard (1958), Leistner (1959a, 1967), Bothma & De Graaff (1973), Leistner & Werger (1973), Acocks (1953, 1975), Werger & Leistner (1975), Van Rooyen, Van Rensburg, Theron & Bothma (1984) and Werger (1986). Leistner & Werger (1973) and Bothma & De Graaff (1973) described the different plant communities and habitat characteristics of most of the species mentioned in the check list that follows.

Leistner (1959b) compiled a preliminary list of 181 flowering plants for the KGNP. This study was undertaken to provide a more definite inventory of the flora of this large conservation area. Particular attention is also given to the life form spectrum of the taxa.

Methods

The check list of the flowering plants of the KGNP was compiled from collections made by Van Rooyen and co-workers, as well as those listed or collected by Story (1958), Brynard (1958), Leistner (1959a, 1959b, 1967), Leistner & Werger (1973), Acocks (1953, 1975), Ross (1979), Steyn (1984), Van Rooyen *et al.* (1984), Van der Walt & Le Riche (1984), Van Hoven, Boomker & De Beer (1984), Keith & Renew (1975), including those plant specimens housed at the National Herbarium (PRE) of the Botanical Research Institute, P/bag X101, Pretoria and the H.G.W.J. Schweickerdt Herbarium (PRU), Department of Botany, University of Pretoria.

The specimens of Van Rooyen and co-workers were identified by the National Herbarium and are housed in the H.G.W.J. Schweickerdt Herbarium.

Nomenclature and arrangement follow Gibbs Russell, Germishuizen, Herman, Olivier, Perhold, Reid, Retief, Smook, Van Rooy & Welman (1984), Gibbs Russell, Reid, Van Rooy & Smook (1985), Gibbs Russell, Welman, Retief, Immelman, Germishuizen, Pienaar, Van Wyk & Nicholas (1987) and collecting numbers of N. van Rooyen are indicated in parentheses. Taxa without N. van Rooyen's collecting numbers represent specimens collected by one or more of the above-mentioned authors or those specimens housed at the National Herbarium (PRE). Species are arranged alphabetically under each genus and the species name is followed by the author citation, collectors number or publication, life form and soil type/habitat.

Life form classes are according to Rutherford & Westfall (1986) and the following are used:

Phanerophytes (P): Perennial plants, usually woody, with the mean height of the renewal buds > 0,7 m above ground level. The height classes of the phanerophytic divisions are based on Mueller-Dombois & Ellenberg (1974):

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

Nanophanerophytes (N): Perennial plants, usually woody, with the mean height of the renewal buds < 2 metres.

Although *Acacia erioloba* and *A. luederitzii* var. *luederitzii* reach heights of more than 5 m, they were included in the M-life form class.

Chamaephytes (Ch): Perennial plants, generally woody or partly woody, with the mean height of the renewal buds less than or equal to 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.

Geophytes (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) and parasites (Par) are also distinguished.

The following soil/habitat types based on Leistner (1967) are distinguished:

Fine textured soils: Rivers and calcrete river banks	(R)
Fine textured soils: Pans and brack areas	(P)
Sandy soils (S) ranging from:	
compact sand of dune valleys	(SV)
to loose sand of dunes	(SD)
Fine soils and sandy soils	(FS)

Results and discussion

A total of 397 plant species representing 191 genera and 51 families, was recorded in the KGNP (Table 1). An analysis of Table 1 shows that six families (11,76% of the total number of families) belong to the Monocotyledonae and 45 families (88,24%) to the Dicotyledonae. The Monocotyledonae is repre-

Table 1
Plant families recorded in the Kalahari Gemsbok National Park, showing the number of genera and species in each family

Families	Genera	Species	Families	Genera	Species
Monocotyledonae					
Poaceae	22	57	Zygophyllaceae	3	6
Cyperaceae	4	6	Polygalaceae	1	2
Commelinaceae	1	1	Euphorbiaceae	4	9
Liliaceae	9	29	Anacardiaceae	1	3
Amaryllidaceae	4	4	Tiliaceae	2	3
Iridaceae	1	1	Malvaceae	5	5
			Sterculiaceae	2	12
Dicotyledonae			Violaceae	1	1
Loranthaceae	1	1	Thymelaeaceae	1	1
Polygonaceae	2	4	Combretaceae	1	1
Chenopodiaceae	4	11	Apiaceae	1	1
Amaranthaceae	5	10	Apocynaceae	1	1
Nyctaginaceae	1	2	Asclepiadaceae	10	11
Aizoaceae	11	26	Convolvulaceae	3	9
Mesembryanthemaceae	1	1	Boraginaceae	2	6
Portulacaceae	2	4	Verbenaceae	1	2
Caryophyllaceae	1	1	Lamiaceae	2	3
Illecebraceae	1	1	Solanaceae	2	7
Papaveraceae	1	1	Scrophulariaceae	6	16
Brassicaceae	2	2	Selaginaceae	2	3
Capparaceae	2	8	Bignoniaceae	2	2
Resedaceae	1	1	Pedaliaceae	3	6
Vahliaceae	1	1	Acanthaceae	4	7
Rosaceae	2	4	Rubiaceae	1	3
Fabaceae	17	44	Cucurbitaceae	9	10
Geraniaceae	2	4	Asteraceae	22	42
Oxalidaceae	1	1	Total	191	397

sented by 98 species (24,7% of the total number of species) and the Dicotyledonae by 299 species (75,3%).

The Poaceae with 57 species (14,4% of all species), the Fabaceae with 44 species (11,1%), Asteraceae with 42 species (10,6%), the Liliaceae with 29 species (7,3%) and the Aizoaceae with 26 species (6,5%) are the largest families in the KGNP. There are ten genera with seven or more species, namely the genus *Eragrostis* (15 species), *Hermannia* (11), *Indigofera* (11), *Limeum* (10), *Dipcadi* (9), *Aptosimum* (8), *Protasparagus* (8), *Acacia* (8), *Cleome* (7), and *Lotononis* (7).

There are very few leaf and/or stem succulents in the KGNP (< 1 % of the total species) and the only ones recorded are *Orbeopsis knobelii*, *Psilocaulon articulatum*, *Stapelia barklyi* and *Tridentea marientalensis* subsp. *marientalensis*. The southern Kalahari succulent (chamaephytes) score is only 2% according to Werger (1986).

In Table 2 the life form spectrum of the KGNP is summarised and compared to the life form spectrum of the southern Kalahari (Leistner 1967), the Hester Malan Nature Reserve in Namaqualand/Karoo (Rösch 1977) and the "normal spectrum" of Raunkiaer as cited in Shimwell (1971).

Table 2
Life form spectra (%) for some parts of the Karoo and the southern Kalahari

Locality	M	N	Ch	H	G	T	Other
KGNP	1	7	15	31	13	31	1
Southern Kalahari (Leistner 1967)	3	8	14	21	21	33	
Namaqualand/Karoo (Rösch 1977)	1	4	32	17	16	28	2
Normal spectrum	18	15	9	26	4	13	15

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

The KGNP is classified by Rutherford & Westfall (1986) as part of the Savanna Biome and according to them the codominant life forms of the Savanna Biome are phanerophytes and hemicryptophytes. The KGNP is, however, a therophyte-hemicryptophyte area, even though a fairly large percentage of phanerophytes, especially nanophanerophytes, does occur. The area is physiognomically a marginal savanna and the life form spectrum confirms this. The chamaephyte value of the KGNP is very low when compared to the Namaqualand/Karoo site, but the phanerophyte component is very distinct. The geophyte value for the southern Kalahari (Leistner 1967) is exaggerated, since two-thirds of this value (14%) are made up by species which are intermediate between geophytes and hemicryptophytes (Werger 1986). In this study these intermediate forms were included as hemicryptophytes. The predominantly sandy soils of the KGNP most probably account for the low cha-

Table 3
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

Angiospermae		
Monocotyledonae		
Poaceae		Life form: soil/habitat
64	<i>Dichanthium</i> Willemet <i>D. annulatum</i> (Forssk.) Stapf var. <i>papillosum</i> (A. Rich.) De Wet & Harlan (Leistner 1959b)	H:S
88.1	<i>Megaloprotachne</i> C.E. Hubb. <i>M. albescens</i> C.E. Hubb. (3960)	T:S
104	<i>Brachiaria</i> Griseb. <i>B. glomerata</i> (Hack.) A. Camus (3805) <i>B. marlothii</i> (Hack.) Stent (Leistner 1967)	T:S H:SV
110	<i>Urochloa</i> Beauv. <i>U. trichopus</i> (Hochst.) Stapf (Leistner 1967)	T:R
112	<i>Echinochloa</i> Beauv. <i>E. colona</i> (L.) Link (Leistner 1967)	T:FS,SV
116	<i>Panicum</i> L. <i>P. coloratum</i> L. var. <i>coloratum</i> (3901) <i>P. impeditum</i> Launert (Leistner & Werger 1973) <i>P. infestum</i> Peters (PRE)	H:R H:R H:R
128	<i>Setaria</i> Beauv. <i>S. incrassata</i> (Hochst.) Hack. (PRE) <i>S. verticillata</i> (L.) Beauv. (3926)	H:R,P,FS T:R,SV
138	<i>Anthephora</i> Schreb. <i>A. argentea</i> Goossens (De Beer collecting nr. A47) <i>A. schinzii</i> Hack. (Leistner 1967)	H:S H:S
140	<i>Cenchrus</i> L. <i>C. ciliaris</i> L. (3950)	H:R,SV
203.3	<i>Centropodia</i> Reichb. <i>C. glauca</i> (Nees) T.A. Cope (3655)	H:S
260	<i>Stipagrostis</i> Nees <i>S. amabilis</i> (Schweick.) De Winter (3638) <i>S. ciliata</i> (Desf.) De Winter var. <i>capensis</i> (Trin. & Rupr.) De Winter (Leistner 1967) <i>S. namaquensis</i> (Nees) De Winter (Leistner 1967) <i>S. obtusa</i> (Del.) Nees (Leistner 1967) <i>S. uniplumis</i> (Licht.) De Winter var. <i>uniplumis</i> (3677)	Ch,H:SD H:S Ch,H:S H:FS,SV H:S
262	<i>Aristida</i> L. <i>A. adscensionis</i> L. subsp. <i>adscensionis</i> (Leistner 1967) <i>A. adscensionis</i> L. subsp. <i>guineensis</i> (Trin. & Rupr.) Henr. (PRE) <i>A. congesta</i> Roem. & Schult. subsp. <i>congesta</i> (3919)	T:FS,SV T:FS H:R,FS

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
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	Life form: soil/habitat
	<i>A. meridionalis</i> Henr. (3844, 3863) H:S,SV
	<i>A. stipitata</i> Hack. subsp. <i>graciliflora</i> (Pilg.) Meld. (Leistner & Werger 1973) H:S
	<i>A. stipitata</i> Hack. subsp. <i>spicata</i> (De Winter) Meld. (3629, 3814) H:S
274	<i>Tragus</i> Haller
	<i>T. berteronianus</i> Schult. (Leistner 1967) T:FS,SV
	<i>T. racemosus</i> (L.) All. (3915) T:R,FS
283	<i>Sporobolus</i> R. Br.
	<i>S. coromandelianus</i> (Retz.) Kunth (Leistner & Werger 1973) H:FS
	<i>S. engleri</i> Pilg. (PRE) H:FS
	<i>S. ioclados</i> (Trin.) Nees (3833) H:P
	<i>S. nervosus</i> Hochst. (3643) T:S
	<i>S. rangei</i> Pilg. (Leistner 1967) H:P
286	<i>Eragrostis</i> Beauv.
	<i>E. annulata</i> Rendle ex S. Elliot (3934) T:R,SV
	<i>E. bergiana</i> (Kunth) Trin. (3688) H:S,SV
	<i>E. bicolor</i> Nees (Leistner 1967) H:R
	<i>E. biflora</i> Hack. ex Schinz (Leistner 1967) T:S
	<i>E. brizantha</i> Nees (Leistner 1967) T:SV
	<i>E. echinochloidea</i> Stapf (Leistner 1967) H:FS,SV
	<i>E. heteromera</i> Stapf (PRE) H:SV,FS
	<i>E. homomalla</i> Nees (PRE) H:R
	<i>E. lehmanniana</i> Nees var. <i>chaunantha</i> (Pilg.) De Winter (PRE) H:S
	<i>E. lehmanniana</i> Nees var. <i>lehmanniana</i> (3715, 3843, 3862) H:S
	<i>E. pallens</i> Hack. (3584, 3910) H:S
	<i>E. porosa</i> Nees (Leistner 1967) T:FS,SV
	<i>E. rotifer</i> Rendle (Leistner 1967) H:R
	<i>E. trichophora</i> Coss. & Dur. (3583) H:SD
	<i>E. truncata</i> Hack. (3582, 3830, 3841, 3873) H:R,P
301	<i>Chloris</i> Swartz
	<i>C. virgata</i> Swartz (3900) T:R,P
320	<i>Oropetium</i> Trin.
	<i>O. capense</i> Stapf (3641) H:R,P,SV
345	<i>Diplachne</i> Beauv.
	<i>D. fusca</i> (L.) Beauv. ex Roem. & Schult. (Leistner 1967) H:R
350	<i>Triraphis</i> R. Br.
	<i>T. purpurea</i> Hack. (3617) T:P,SV
357	<i>Enneapogon</i> Desv. ex Beauv.
	<i>E. cenchroides</i> (Roem. & Schult.) C.E. Hubb. (3947) T:R,FS,SV
	<i>E. desvauxii</i> Beauv. (3580, 3836, 3948) T:R,P
	<i>E. scaber</i> Lehm. (Leistner 1967) H:R
361	<i>Schmidtia</i> Steud.
	<i>S. kalihariensis</i> Stent (3701) T:FS
371	<i>Fingerhuthia</i> Nees
	<i>F. africana</i> Lehm. (3918) H:R,SV

Table 3 (Continued)
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		Life form: soil/habitat
Cyperaceae		
454	<i>Ascolepis</i> Nees ex Steud. <i>A. capensis</i> (Kunth) Ridley (PRE)	H:R
459	<i>Cyperus</i> L. <i>C. margaritaceus</i> Vahl (Leistner 1967) <i>C. usitatus</i> Burch. var. <i>macrobulbus</i> Keukenth. (3620)	H:S G:SV
471	<i>Fimbristylis</i> Vahl <i>F. ferruginea</i> (L.) Vahl (PRE) <i>F. hispidula</i> (Vahl) Kunth (3626)	H:S T:S
471.01	<i>Bulbostylis</i> Kunth <i>B. hispidula</i> (Vahl) R. Haines (3855)	H:S,SV
Commelinaceae		
896	<i>Commelina</i> L. <i>C. benghalensis</i> L. (3684)	T:S
Liliaceae		
969	<i>Androcymbium</i> Willd. <i>A. sp.</i> (3892)	G:P
975.01	<i>Camptorrhiza</i> Phill. <i>C. strumosa</i> (Bak.) Oberm. (Leistner 1967)	G:P,R,SV
985.01	<i>Trachyandra</i> Kunth <i>T. laxa</i> (N.E. Br.) Oberm. var. <i>laxa</i> (3713, 3913)	G:SD
1012	<i>Eriosperrum</i> Jacq. ex Willd. <i>E. abyssinicum</i> Bak. (Steyn 1984) <i>E. confusum</i> V. Poelln. (Leistner 1967) <i>E. rautanenii</i> Schinz (Leistner & Werger 1973)	G:S G:P,R,SV G:S
1084	<i>Dipcadi</i> Medik. <i>D. bakerianum</i> H. Bol. (3664) <i>D. crispum</i> Bak. (Leistner & Werger 1973) <i>D. gracillimum</i> Bak. (PRE) <i>D. longifolium</i> (Lindl.) Bak. (De Beer collecting nr. A61) <i>D. marlothii</i> Engl. (Leistner 1967) <i>D. cf. papillatum</i> Oberm. (Leistner 1967) <i>D. platyphyllum</i> Bak. (Leistner 1967) <i>D. vaginatum</i> Bak. (Leistner 1967) <i>D. sp.</i> (3905)	G:S G:S,SV G:S G:S G:R,SV G:R,SV G:SV G:S
1089	<i>Ornithogalum</i> L. <i>O. seineri</i> (Engl. & Krause) Oberm. (De Beer collecting nr. A43) <i>O. tenuifolium</i> Delaroche (Van Rooyen <i>et al.</i> 1984)	G:SV,P G:S,SV,P
1090	<i>Ledebouria</i> Roth. <i>L. apertiflora</i> (Bak.) Jessop (3904) <i>L. graminifolia</i> (Bak.) Jessop (Leistner & Werger 1973)	G:SD G:S

Table 3 (Continued)
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	<i>L. undulata</i> (Jacq.) Jessop (Leistner & Werger 1973)	G:S
1094	<i>Pseudogaltonia</i> Kuntze <i>P. clavata</i> (Mast. ex Bak.) Phill. (Leistner 1967)	G:FS,SV
1113	<i>Protasparagus</i> Oberm. <i>P. africanus</i> (Lam.) Oberm. (Leistner 1967) <i>P. cooperi</i> (Bak.) Oberm. (3692) <i>P. denudatus</i> (Kunth) Oberm. (Leistner 1967) <i>P. exuvialis</i> (Burch.) Oberm. (Leistner 1967) <i>P. nelsii</i> (Schinz) Oberm. (3808) <i>P. pearsonii</i> (Kies) Oberm. (3949) <i>P. suaveolens</i> (Burch.) Oberm. (Leistner 1967) <i>P. sp. cf. plumosus</i> Bak. (Leistner 1959b)	H:FS H:SV H:SV H:S H:S,SV H:R Ch:S H:S
Amaryllidaceae		
1168	<i>Böophane</i> Herb. <i>B. disticha</i> (L.f.) Herb. (Leistner 1967)	G:S
1175	<i>Nerine</i> Herb. <i>N. laticoma</i> (Ker-Gawl.) Dur. & Schinz (Leistner 1967)	G:R,SV
1186	<i>Gethyllis</i> L. <i>G. spiralis</i> L.f. (Leistner & Werger 1973)	G:S
1189	<i>Crinum</i> L. <i>C. sp. aff. C. harmsii</i> Bak. (Leistner collecting nr. 2206)	G:S
Iridaceae		
1314	<i>Lapeirousia</i> Pourret <i>L. caudata</i> Schinz subsp. <i>burchellii</i> (Bak.) Marais & Goldbl. (PRE)	G:S,SD
Dicotyledonae		
Loranthaceae		
2074	<i>Tapinanthus</i> (Blume) Reichb. <i>T. oleifolius</i> (Wendl.) Danser (Leistner 1959b)	Par
Polygonaceae		
2201	<i>Polygonum</i> L. <i>P. pulchrum</i> Blume (PRE)	H:R
2204	<i>Oxygonum</i> Burch. <i>O. alatum</i> Burch. var. <i>alatum</i> (3804) <i>O. delagoense</i> Kuntze (3708, 3802) <i>O. dregeanum</i> Meisn. var. <i>canescens</i> (Sond.) R.A. Grah. (3646, 3670)	T:S T:S T:S,SV,SD
Chenopodiaceae		
2223	<i>Chenopodium</i> L. <i>C. album</i> L. (3888)	T:S

Table 3 (Continued)
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		Life form: soil/habitat
	<i>C. olukondae</i> (Murr) Murr (PRE)	T:FS
	<i>C. opulifolium</i> Schrad. ex Koch & Ziz (Leistner 1967)	T:FS
2238	<i>Chenolea</i> Thunb. <i>C. diffusa</i> Thunb. (PRE)	Ch:R
2269	<i>Salsola</i> L. <i>S. etoshensis</i> Botsch. (3834) <i>S. kali</i> L. (Leistner 1967) <i>S. rabieana</i> Verdoorn (Leistner 1967) <i>S. tuberculata</i> (Moq.) Fenzl (Leistner 1967) <i>S. tuberculatiformis</i> Botsch. (PRE)	Ch:P T:R N:P,R,SV Ch:R,P,SV Ch:R,P,SV
2287	<i>Lophiocarpus</i> Turcz. <i>L. polystachyus</i> Turcz. (3920) <i>L. tenuissimus</i> Hook. f. (Leistner 1967)	H:R,SV T:S
Amaranthaceae		
2293	<i>Hermbstaedtia</i> Reichb. <i>H. fleckii</i> (Schinz) Bak. & C.B. Cl. (3697) <i>H. linearis</i> Schinz (3651) <i>H. odorata</i> (Burch.) T. Cooke var. <i>odorata</i> (3600) <i>H. schaeferi</i> (Schinz) Schinz & Dinter (3847)	T:S T:S H:S,SD T:SV,P
2299	<i>Amaranthus</i> L. <i>A. dinteri</i> Schinz (Leistner 1967) <i>A. schinzianus</i> Thell. (Leistner 1967) <i>A. thunbergii</i> Moq. (Leistner 1967)	T:FS,SV T:FS,SV T:FS,SV
2305	<i>Sericocoma</i> Fenzl <i>S. avolans</i> Fenzl (PRE)	Ch:R,P
2307	<i>Sericorema</i> Lopr. <i>S. remotiflora</i> (Hook. f.) Lopr. (3660)	G:S
2309	<i>Kyphocarpa</i> (Fenzl) Lopr. <i>K. angustifolia</i> (Moq.) Lopr. (3935)	Ch:R
Nyctaginaceae		
2349	<i>Boerhavia</i> L. <i>B. cf. diffusa</i> L. (Leistner 1959b) <i>B. repens</i> L. (Leistner 1967)	H:R,P,SV H:R,P
Aizoaceae		
2376	<i>Limeum</i> L. <i>L. aethiopicum</i> Burm. subsp. <i>aethiopicum</i> var. <i>intermedium</i> Friedr. (Leistner 1967) <i>L. arenicolum</i> Schellenb. (3597, 3662) <i>L. argute-carinatum</i> Wawra & Peyr. (3936) <i>L. fenestratum</i> (Fenzl) Heimerl (3604, 3845) <i>L. myosotis</i> H. Walter var. <i>confusum</i> Friedr. (3579) <i>L. myosotis</i> H. Walter var. <i>myosotis</i> (PRE) <i>L. pterocarpum</i> (Gay) Heimerl (Leistner & Weger 1973) <i>L. sulcatum</i> (Klotzsch) Hutch. cf. var. <i>sulcatum</i> (3695)	H:R,P T:S T:R,SV T:S T:S T:S T:S T:SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
 explanation of symbols)

	Life form: soil/habitat
	<i>L. viscosum</i> (Gay) Fenzl subsp. <i>viscosum</i>
	var. <i>glomeratum</i> (Eckl. & Zeyh.) Friedr. (3851) T:SV,P
	<i>L. viscosum</i> (Gay) Fenzl subsp. <i>transvaalense</i> Friedr.
	(3865, 3870) T:SD,SV,P
2382	<i>Gisekia</i> L.
	<i>G. africana</i> (Lour.) Kuntze var. <i>africana</i>
	(3661,3710) T:S
	<i>G. pharmacioides</i> L. (3848) T:SV,P
2387	<i>Mollugo</i> L.
	<i>M. cerviana</i> (L.) Ser. (3637, 3689, 3849) T:FS
2388	<i>Glinus</i> L.
	<i>G. oppositifolius</i> (L.) DC.
	(Knight collecting nr. 39a) T:S
2389	<i>Pharnaceum</i> L.
	<i>P. dichotomum</i> L.f. (3595) T:S
2390	<i>Hypertelis</i> E. Mey. ex Fenzl
	<i>H. spergulacea</i> E. Mey. ex Fenzl
	(Knight collecting nr. 56) H:S
2395	<i>Trianthema</i> L.
	<i>T. triquetra</i> Willd. subsp. <i>parvifolia</i>
	(Sond.) Jeffrey (3939) T:R,SV
	<i>T. triquetra</i> Willd. subsp. <i>triquetra</i> (3928) T:R,SV
2398	<i>Plinthus</i> Fenzl
	<i>P. cryptocarpus</i> Fenzl (3894) Ch:FS,SV,R
	<i>P. karoocicus</i> Verdoorn (Leistner 1967) Ch:FS,SV
	<i>P. sericeus</i> Pax (3621, 3635, 3658, 3815) Ch:FS
2399	<i>Galenia</i> L.
	<i>G. africana</i> L. var. <i>africana</i> (Leistner 1967) N:FS,SV
	<i>G. cf. secunda</i> (L.f.) Sond. (3682) Ch:S
2401	<i>Aizoon</i> L.
	<i>A. schellenbergii</i> Adamson (Leistner 1967) Ch:R
2403	<i>Tetragonia</i> L.
	<i>T. arbuscula</i> Fenzl (Leistner 1967) N:S
	<i>T. macroptera</i> Pax (PRE) Ch:S
Mesembryanthemaceae	
2405	<i>Psilocaulon</i> N.E. Br.
	<i>P. articulatum</i> (Thunb.) N.E. Br.
	(Leistner Collecting nr. 3039) Ch:R,P
Portulacaceae	
2406	<i>Talinum</i> Adans.
	<i>T. caffrum</i> (Thunb.) Eckl. & Zeyh. (3610) G:SV
2421	<i>Portulaca</i> L.
	<i>P. kermesina</i> N.E. Br. (Leistner 1967) T:SV
	<i>P. oleracea</i> L. (Leistner 1967) T:R,SV
	<i>P. quadrifida</i> L. (Leistner 1967) T:SV
Illecebraceae	
2467	<i>Pollichia</i> Ait.
	<i>P. campestris</i> Ait. (3605, 3667, 3691) H:FS

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
 explanation of symbols)

		Life form: soil/habitat
Caryophyllaceae		
2490	<i>Silene</i> L. <i>S. burchellii</i> Otth var. <i>angustifolia</i> Sond. (PRE)	T:SV
Papaveraceae		
2852	<i>Argemone</i> L. <i>A. subfusiformis</i> G.B. Ownbey (3924)	T:R,SV
Brassicaceae		
2875	<i>Heliophila</i> L. <i>H. minima</i> (Stephens) Marais (Leistner 1967)	T:S
2884	<i>Coronopus</i> Zinn. <i>C. integrifolius</i> (DC.) Spreng. (Leistner 1967)	T:R
Capparaceae		
3082	<i>Cleome</i> L. <i>C. angustifolia</i> Forssk. subsp. <i>diandra</i> (Burch.) Kers (3933) <i>C. gynandra</i> L. (3861) <i>C. hassleriana</i> Chod. (PRE) <i>C. kalachariensis</i> (Schinz) Gilg & Ben. (3852) <i>C. paxii</i> (Schinz) Gilg & Ben. (3592) <i>C. rubella</i> Burch. (Leistner 1967) <i>C. suffruticosa</i> Schinz (Leistner 1959b)	T:R,SV T:FS,SV T:S T:S,P T:S T:S T:S
3106	<i>Boscia</i> Lam. <i>B. albitrunca</i> (Burch.) Gilg & Ben. Leistner 1967)	M:FS
Resedaceae		
3126	<i>Oligomeris</i> Camb. <i>O. dipetala</i> (Ait.) Turcz. var. <i>dipetala</i> (Leistner 1967)	H:SV
Vahliaceae		
3201	<i>Vahlia</i> Thunb. <i>V. capensis</i> (L.f.) Thunb. (Leistner 1967)	H:R,P,SV
Rosaceae		
3390.01	<i>Neuradopsis</i> Brem. & Oberm. <i>N. austroafricana</i> (Schinz) Brem. & Oberm. (3586, 3601) <i>N. bechuanensis</i> Brem. & Schweick. (Leistner 1959b)	H:S H:S
3391	<i>Grielum</i> L. <i>G. humifusum</i> Thunb. (Leistner 1967) <i>G. sinuatum</i> Licht. ex Burch. (3898)	T:FS T:R
Fabaceae		
3443	<i>Albizia</i> Durazz. <i>A. anthelmintica</i> (A. Rich.) Brongn. (Leistner 1967)	M:SD
3446	<i>Acacia</i> Mill. <i>A. erioloba</i> E. Mey. (Leistner 1967) <i>A. erioloba</i> X <i>A. haematoxylon</i> (hibrid) (Ross 1979) <i>A. haematoxylon</i> Willd. (Leistner 1967)	M:FS,R M:R N:FS,R

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

	Life form: soil/habitat
	<i>A. hebeclada</i> DC. subsp. <i>hebeclada</i> (Leistner 1967) N:FS,R
	<i>A. karroo</i> Hayne (Leistner 1967) M:R,SV
	<i>A. luederitzii</i> Engl. var. <i>luederitzii</i> (3647, 3822, 3875) M:S
	<i>A. mellifera</i> (Vahl) Benth. subsp. <i>detinens</i> (Burch.) Brenan (Leistner 1967) N:S
	<i>A. reficiens</i> Wawra subsp. <i>reficiens</i> (Leistner 1967) M:S
3452	<i>Dichrostachys</i> (A.DC.) Wight & Arn. <i>D. cinerea</i> (L.) Wight & Arn. subsp. <i>africana</i> Brenan & Brumm. (Leistner 1967) N:SD
3467	<i>Elephantorrhiza</i> Benth. <i>E. elephantina</i> (Burch.) Skeels (Leistner 1967) G:S
3536	<i>Cassia</i> L. <i>C. italica</i> (Mill.) Lam. ex F.W. Andr. subsp. <i>arachoides</i> (Burch.) Brenan (Leistner 1967) G:FS
3551	<i>Parkinsonia</i> L. <i>P. africana</i> Sond. (3959) M:FS
3557	<i>Hoffmannseggia</i> Cav. <i>H. burchellii</i> (DC.) Benth. ex Oliv. subsp. <i>burchellii</i> (3816) H:S
3657	<i>Lotononis</i> (DC.) Eckl. & Zeyh. <i>L. clandestina</i> (E. Mey.) Benth. (3937) T:R,SV <i>L. crumanina</i> Burch. ex Benth. (Leistner & Werger 1973) T:FS <i>L. curtii</i> Harms (3860, 3941) T:R,P <i>L. furcata</i> (Merxm. & A. Schreib.) A. Schreib. (3940) T:R,SV <i>L. platycarpa</i> (Viv.) Pichi-Serm. s.l. (3690, 3705, 3895) T:FS,R <i>L. schwansiana</i> Dinter (Leistner 1959b) T:S <i>L. steingroeveriana</i> Duemmer (PRE) T:S
3660	<i>Lebeckia</i> Thunb. <i>L. linearifolia</i> E. Mey. (3954) N:FS
3665	<i>Melolobium</i> Eckl. & Zeyh. <i>M. macrocalyx</i> Duemmer var. <i>longifolium</i> Duemmer (Leistner 1967) T:S
3669	<i>Crotalaria</i> L. <i>C. spartioides</i> DC. (Leistner 1967) N:SD <i>C. sphaerocarpa</i> Perr. ex DC. (3681, 3824) N:S <i>C. virgultalis</i> Burch. ex DC. (3676) N:S
3700	<i>Cyamopsis</i> DC. <i>C. serrata</i> Schinz (Leistner 1967) T:SV
3702	<i>Indigofera</i> L. <i>I. alternans</i> DC. (3596, 3608, 3857) H:FS,SV <i>I. argyraea</i> Eckl. & Zeyh. (Leistner & Werger 1973) H:S <i>I. argyroides</i> E. Mey. (Leistner & Werger 1973) T:S <i>I. auricoma</i> E. Mey. (Leistner 1967) H:SV <i>I. charlieriana</i> Schinz var. <i>charlieriana</i> (3821) T:SV <i>I. cf. costata</i> Guill. & Perr. subsp. <i>macra</i> (E. Mey.) J.B. Gillett (3817) H:S

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

		Life form: soil/habitat
	<i>I. daleoides</i> Benth. ex Harv. var. <i>daleoides</i> (3585, 3623, 3819, 3871)	H:SD,SV H:S
	<i>I. diphylla</i> Vent. (Leistner 1959b)	H:SD,SV
	<i>I. flavicans</i> Bak. (3602, 3606, 3694, 3807)	H:S
	<i>I. ingrata</i> N.E. Br. (PRE)	H:P
	<i>I. cf. parviflora</i> Heyne ex Wight & Arn. (3889)	
3703	Cullen Medik. <i>C. obtusifolia</i> (DC.) C.H. Stirton (Leistner 1967)	H:R,SV
3717	<i>Ptychobium</i> Harms. <i>P. biflorum</i> (E. Mey.) Brummitt subsp. <i>biflorum</i> (3925, 3942)	Ch:R,SV
3718.01	<i>Requienia</i> DC. <i>R. pseudosphaerosperma</i> (Schinz) Brummitt <i>R. sphaerosperma</i> DC. (3590, 3668, 3812)	G:S G:S
3756	<i>Lessertia</i> DC. <i>L. macrostachya</i> DC. var. <i>macrostachya</i> (Leistner 1967) <i>L. pauciflora</i> Harv. (Leistner 1967)	H:S H:SV
Geraniaceae		
3925	<i>Monsonia</i> L. <i>M. angustifolia</i> E. Mey. ex A. Rich. (Leistner & Werger 1973) <i>M. burkeana</i> Planch. ex Harv. (Leistner 1959b) <i>M. glauca</i> Kunth (3837)	T:S H:FS T:S
3926	<i>Sarcocaulon</i> Sweet <i>S. salmoniflorum</i> Moffett (Leistner collecting nr. 2246)	Ch:R
Oxalidaceae		
3936	<i>Oxalis</i> L. <i>O. lawsonii</i> Bol. f. (Leistner 1967)	G:S
Zygophyllaceae		
3963	<i>Fagonia</i> L. <i>F. sinaica</i> Boiss. var. <i>minutistipula</i> (Engl.) Hadidi (Leistner 1967)	H:SV
3965	<i>Zygophyllum</i> L. <i>Z. pubescens</i> Schinz (Leistner 1967) <i>Z. tenue</i> P.E. Glover (3864, 3877)	Ch:R,SV Ch:P,SV
3978	<i>Tribulus</i> L. <i>T. cristatus</i> Presl (Leistner 1967) <i>T. terrestris</i> L. (Leistner 1967) <i>T. zeyheri</i> Sond. (Leistner 1967)	T:R,FS T:FS,SV T:FS
Polygalaceae		
4273	<i>Polygala</i> L. <i>P. hottentotta</i> Presl (Leistner 1967) <i>P. leptophylla</i> Burch. (3678)	H:R,SV Ch:S
Euphorbiaceae		
4299	<i>Phyllanthus</i> L. <i>P. burchellii</i> Muell. Arg. (3896) <i>P. maderaspatensis</i> L. (Leistner 1967)	T:R T:FS

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

	Life form: soil/habitat
	<i>P. niruri</i> L. (PRE) T:S
	<i>P. omahekeensis</i> Dinter & Pax (Leistner & Werger 1973) T:S
	<i>P. pentandrus</i> Schumach. & Thonn. (Leistner & Werger 1973) T:S
4433	<i>Jatropha</i> L.
	<i>J. erythropoda</i> Pax & K. Hoffm. (3906) G:S
4448	<i>Clusia</i> L.
	<i>C. natalensis</i> Bernh. ex Krauss (3630) H:SD
4498	<i>Chamaesyce</i> S.F. Gray
	<i>C. glanduligera</i> (Pax) Koutnik (3943) T:R
	<i>C. inequilatera</i> (Sond.) Sójak (3826, 3838) T:FS,P,S
Anacardiaceae	
4594	<i>Rhus</i> L.
	<i>R. marlothii</i> Engl. (Steyn 1984) N:SV
	<i>R. montana</i> Diels (PRE) N:SV
	<i>R. tenuinervis</i> Engl. (3704, 3827, 3869) N:S,SD
Tiliaceae	
4953	<i>Corchorus</i> L.
	<i>C. schimperi</i> Cufod. (Leistner 1967) H:R
4966	<i>Grewia</i> L.
	<i>G. flava</i> DC. (3639) N:FS
	<i>G. retinervis</i> Burret (Leistner 1967) N:FS
Malvaceae	
4983	<i>Abutilon</i> Mill.
	<i>A. austro-africanum</i> Hochr. (Leistner 1967) Ch:FS,SV
4998	<i>Sida</i> L.
	<i>S. ovata</i> Forssk. (Leistner 1967) H:S
5007	<i>Pavonia</i> Cav.
	<i>P. burchellii</i> (DC.) R.A. Dyer (Leistner 1967) H:S
5013	<i>Hibiscus</i> L.
	<i>H. trionum</i> L. (3891) T:P
5013.01	<i>Radyera</i> Bullock •
	<i>R. urens</i> (L.f.) Bullock (3903) H:R
Sterculiaceae	
5047	<i>Melhania</i> Forssk.
	<i>M. burchellii</i> DC. (3671, 3813) H:S
5056	<i>Hermannia</i> L.
	<i>H. abrotanoides</i> Schrad. (3927) H:R
	<i>H. argillicola</i> Dinter ex M. Holzhammer (Leistner & Werger 1973) H:S
	<i>H. bicolor</i> Engl. & Dinter (Leistner & Werger 1973) H:S
	<i>H. burchellii</i> (Sweet) Verdoorn (3645) Ch:S
	<i>H. eenii</i> Bak. f. (Leistner & Werger 1973) H:S,SD
	<i>H. glanduligera</i> K. Schum. (3650) Ch:R,SV
	<i>H. modesta</i> (Ehrenb.) Mast. (3611, 3666, 3672, 3685, 3853) H:FS,SV
	<i>H. pulchella</i> L.f. (Leistner & Werger 1973) H:S
	<i>H. cf. resedifolia</i> (Burch.) R.A. Dyer (Leistner 1967) H:FS, SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
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		Life form: soil/habitat
	<i>H. stricta</i> (E. Mey. ex Turcz.) Harv. (PRE)	Ch:S
	<i>H. tomentosa</i> (Turcz.) Schinz ex Engl. (3657)	H:S
Violaceae		
5271	<i>Hybanthus</i> Jacq.	
	<i>H. densifolius</i> Engl. (Leistner 1967)	T:SV
Thymelaeaceae		
5435	<i>Gnidia</i> L.	
	<i>G. polycephala</i> (C.A. Mey.) Gilg (3722)	H:S
Combretaceae		
5544	<i>Terminalia</i> L.	
	<i>T. sericea</i> Burch. ex DC. (Leistner 1967)	M:S
Apiaceae		
6013	<i>Deverra</i> DC.	
	<i>D. aphylla</i> (Cham. & Schlechtd.) DC. (Leistner 1967)	H:FS,SV
Apocynaceae		
6680	<i>Adenium</i> Roem. & Schult.	
	<i>A. oleifolium</i> Stapf (3916)	G:SV,R
Asclepiadaceae		
6791	<i>Asclepias</i> L.	
	<i>A. buchenaviana</i> Schinz (Van Rooyen <i>et al.</i> 1984)	H:S
	<i>A. fruticosa</i> L. (Leistner 1967)	Ch:FS,SV
6834	<i>Cynanchum</i> L.	
	<i>C. orangeanum</i> (Schltr.) N.E. Br. (3593)	G:S
6862	<i>Orphanthera</i> Wight	
	<i>O. jasminiflora</i> (Decne.) Schinz (3654, 3656)	G:FS
6870	<i>Brachystelma</i> R. Br.	
	<i>B. stenophyllum</i> (Schltr.) R.A. Dyer (Steyn 1984)	G:S,SD
6885	<i>Orbeopsis</i> Leach	
	<i>O. knobelii</i> (Phill.) Leach (Steyn 1984)	S:SV,R
6885	<i>Stapelia</i> L.	
	<i>S. barklyi</i> N.E. Br. (PRE)	S:SV,R
6885	<i>Tridentea</i> Haw.	
	<i>T. marientalensis</i> (Nel) Leach subsp.	
	<i>marientalensis</i> (Leistner 1967)	S:SV,R
6917	<i>Pergularia</i> L.	
	<i>P. daemia</i> (Forssk.) Chiov. var. <i>daemia</i> (3699, 3931)	G:R,SV
6921	<i>Tenaris</i> E. Mey.	
	<i>T. schultzei</i> (Schltr.) Phill. (Steyn 1984)	G:S
6924	<i>Fockea</i> Endl.	
	cf. <i>F.</i> sp. (De Beer collecting nr. 42)	G:SD
Convolvulaceae		
6993	<i>Convolvulus</i> L.	
	<i>C. arvensis</i> L. (Leistner & Werger 1973)	T:S
	<i>C. multifidus</i> Thunb. (Leistner 1959b)	H:SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
 explanation of symbols)

		Life form: soil/habitat
	<i>C. sagittatus</i> Thunb. subsp. <i>sagittatus</i> var. <i>sagittatus</i> (3881, 3882)	H:FS,P
	<i>C. sagittatus</i> Thunb. var. <i>ulosepalus</i> (Hallier f.) Verdc. (Leistner 1967)	H:R,FS
6997	<i>Merremia</i> Dennst. <i>M. tridentata</i> (L.) Hallier f. subsp. <i>angustifolia</i> (Jacq.) Ooststr. (3587, 3588, 3679, 3803, 3823, 3876)	T:S
	<i>M. verecunda</i> Rendle (3607, 3820)	T:S
7003	<i>Ipomoea</i> L. <i>I. bolusiana</i> Schinz (Leistner 1967)	G:SV
	<i>I. hackeliana</i> (Schinz) Hallier f. (Leistner 1967)	T:S
	<i>I. magnusiana</i> Schinz (Leistner 1967)	T:S
Boraginaceae		
7043	<i>Ehretia</i> P. Br. <i>E. rigida</i> (Thunb.) Druce (Leistner 1967)	N:S
7052	<i>Heliotropium</i> L. <i>H. ciliatum</i> Kaplan (3609, 3810)	H:S
	<i>H. curassavicum</i> L. (Leistner 1967)	T:R
	<i>H. lineare</i> (A. DC.) C.H. Wr. (3839, 3944)	Ch:R,P,SV
	<i>H. steudneri</i> Vatke (Leistner 1959b)	T:SV,R
	<i>H. strigosum</i> Willd. (Leistner & Werger 1973)	T:SV,R
Verbenaceae		
7148	<i>Plexipus</i> Rafin <i>P. garipensis</i> (E. Mey.) R. Fernandes (3809)	T:S
	<i>P. pumilus</i> (E. Mey.) R. Fernandes (Leistner 1967)	H:S
Lamiaceae		
7236	<i>Acrotome</i> Benth. <i>A. angustifolia</i> G. Tayl. (3693, 3806)	T:S,SV
	<i>A. inflata</i> Benth. (3619, 3648)	T:SV
7281	<i>Stachys</i> L. <i>S. spathulata</i> Burch. ex Benth. (3721)	H:R
Solanaceae		
7379	<i>Lycium</i> L. <i>L. bosciifolium</i> Schinz (3828, 3858)	N:FS,SV,SD
	<i>L. cinereum</i> Thunb. (sens. lat.) (3842)	N:FS,R,P
	<i>L. hirsutum</i> Dun. (Leistner 1967)	N:FS
	<i>L. oxycarpum</i> Dun. (Leistner 1967)	N:FS
	<i>L. villosum</i> Schinz (3909)	N:SV
7407	<i>Solanum</i> L. <i>S. capense</i> L. (3829)	H:FS,SV,SD
	<i>S. incanum</i> L. (Leistner 1967)	H:R,SV
Scrophulariaceae		
7466	<i>Anticharis</i> Endl. <i>A. linearis</i> (Benth.) Hochst. ex Aschers. (Leistner & Werger 1973)	H:SV
7467	<i>Aptosimum</i> Burch. <i>A. albomarginatum</i> Marloth & Engl. (3850)	Ch:SV,P

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

		Life form: soil/habitat
	<i>A. decumbens</i> Schinz (3811, 3867)	H:S,SV
	<i>A. lineare</i> Marloth & Engl. (3878, 3917)	H:SV,P,R
	<i>A. marlothii</i> (Engl.) Hiern (Leistner 1967)	Ch:R,SV
	<i>A. procumbens</i> (Lehm.) Steud. var. <i>elongatum</i> (Hiern) Codd (Leistner 1959b)	H:FS
	<i>A. procumbens</i> (Lehm.) Steud. var. <i>procumbens</i> (Leistner & Werger 1973)	H:S
	<i>A. pubescens</i> Weber (3631, 3687, 3707)	H:S
	<i>A. spinescens</i> (Thunb.) Weber (3938)	Ch:R,SV
7468	<i>Peliostomum</i> Benth. <i>P. leucorrhizum</i> E. Mey. ex Benth. var. <i>linearifolium</i> Weber (3632, 3663, 3866, 3872)	Ch:P,SV
	<i>P. origanoides</i> E. Mey. ex Benth. (Leistner 1967)	Ch:SV
7517	<i>Manulea</i> L. <i>M. burchellii</i> Hiern ex deser. (Leistner collecting nr. 1889)	T:S
7519	<i>Sutera</i> Roth <i>S. canescens</i> (Benth.) Hiern (Leistner 1967)	T:R,P,SV
	<i>S. microphylla</i> (L.f.) Hiern (3720)	Ch:SD
	<i>S. integerrima</i> (Benth.) Hiern (3886)	H:P
7625	<i>Striga</i> Lour. <i>S. gesnerioides</i> (Willd.) Vatke ex Engl. (Leistner 1967)	Par:SV
Selaginaceae		
7568	<i>Selago</i> L. <i>S. albida</i> Choisy (De Beer collecting nr. 13)	Ch:SV
	<i>S. welwitschii</i> Rolfe var. <i>holubii</i> (Rolfe) Brenan (3907)	H:SV
7568.01	<i>Walafrida</i> E. Mey. <i>W. saxatilis</i> (E. Mey.) Rolfe (3832, 3868)	Ch:P
Bignoniaceae		
7722	<i>Rhigozum</i> Burch. <i>R. trichotomum</i> Burch. (Leistner 1967)	N:FS
7723	<i>Catophractes</i> D. Don <i>C. alexandri</i> D. Don (Leistner 1967)	N:SV
Pedaliaceae		
7771	<i>Harpagophytum</i> DC. ex Meissn. <i>H. procumbens</i> (Burch.) DC. ex Meissn. subsp. <i>procumbens</i> (3625, 3652)	G:S
7777	<i>Sesamum</i> L. <i>S. cf. alatum</i> Thonn. (3591, 3612)	T:S
	<i>S. capense</i> Burm. f. subsp. <i>capense</i> (Leistner 1967)	T:SV
	<i>S. triphyllum</i> Welw. ex Aschers. var. <i>grandiflorum</i> (Schinz) Merxm. (Leistner 1959b)	T:S
	<i>S. triphyllum</i> Welw. ex Aschers. var. <i>triphyllum</i> (3703, 3801)	T:S
7780	<i>Dicerocaryum</i> Boj. <i>D. eriocarpum</i> (Decne.) Abels (3615)	G:SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
 explanation of symbols)

		Life form: soil/habitat
Acanthaceae		
7946	<i>Ruellioopsis</i> C.B. Cl. <i>R. setosa</i> (Nees) C.B. Cl. (Leistner & Werger 1973)	Ch:R,P
7973	<i>Barleria</i> L. <i>B. rigida</i> Nees (3921)	H:R,SV
7980	<i>Blepharis</i> Juss. <i>B. mitrata</i> C.B. Cl. (Leistner 1967)	Ch:R
8094.01	<i>Monechma</i> Hochst. <i>M. divaricatum</i> (Nees) C.B. Cl. (3653, 3659, 3902) <i>M. genistifolium</i> (Engl.) C.B. Cl. subsp. <i>australe</i> (P.G. Mey) ined. (3922) <i>M. genistifolium</i> (Engl.) C.B. Cl. subsp. <i>genistifolium</i> (Leistner 1959b) <i>M. incanum</i> (Nees) C.B. Cl. (Leistner 1967)	Ch:R H:R,SV Ch:SV Ch:S
Rubiaceae		
8136.06	<i>Kohautia</i> Cham. & Schlechtd. <i>K. cynanchica</i> DC. (3883, 3932) <i>K. cf. lasiocarpa</i> Klotzsch (3618) <i>K. ramosissima</i> Brem. (Leistner 1967)	H:R,SV,P H:SV H:S
Cucurbitaceae		
8563	<i>Dactyliandra</i> Hook. f. <i>D. welwitschii</i> Hook. f. (Steyn 1984)	G:S
8568	<i>Kedrostis</i> Medik. <i>K. africana</i> (L.) Cogn. (Leistner 1967) <i>K. capensis</i> (Sond.) A. Meeuse (Leistner & Werger 1973)	H:S H:S
8569	<i>Corallocarpus</i> Welw. ex Hook. f. <i>C. bainesii</i> (Hook. f.) A. Meeuse (Leistner collecting nr. 2945)	H:S
8590	<i>Acanthosicyos</i> Welw. ex Hook. f. <i>A. naudinianus</i> (Sond.) C. Jeffrey (3616)	G:S
8591	<i>Momordica</i> L. <i>M. balsamina</i> L. (Leistner 1967)	G:S
8598	<i>Citrullus</i> Eckl. & Zeyh. <i>C. lanatus</i> (Thunb.) Matsumura & Nakai (Leistner 1967)	T:FS
8599	<i>Cucumis</i> L. <i>C. africanus</i> L.f. (3854)	T:FS
8608	<i>Trochomeria</i> Hook. f. <i>T. debilis</i> (Sond.) Hook. f. (3890)	G:SD
8628	<i>Coccinia</i> Wight & Arn. <i>C. rehmannii</i> Cogn. var. <i>rehmannii</i> (3908)	G:SD
Asteraceae		
8740	<i>Erlangea</i> Sch. <i>E. misera</i> (Oliv. & Hiern) S. Moore (3589, 3831)	T:S
8862	<i>Pteronia</i> L. <i>P. mucronata</i> DC. (3840) <i>P. unguiculata</i> S. Moore (Van Rooyen <i>et al.</i> 1984)	Ch:SV Ch:SV
8887	<i>Amellus</i> L. <i>A. strigosus</i> (Thunb.) Less. (Leistner 1967)	T:R,SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for
 explanation of symbols)

		Life form: soil/habitat
8919	<i>Felicia</i> Cass. <i>F. hyssopifolia</i> (Berg.) Nees (Leistner 1967) <i>F. muricata</i> (Thunb.) Nees (Van Rooyen <i>et al.</i> 1984)	Ch:FS Ch:FS
8926	<i>Conyza</i> Less. <i>C. scabrida</i> DC. (PRE)	T:R
8929	<i>Nolletia</i> Cass. <i>N. arenosa</i> O. Hoffm. (3714, 3912)	H:S
8930	<i>Chrysocoma</i> L. <i>C. ciliata</i> (Leistner 1959b) <i>C. obtusata</i> (Thunb.) E. Bayer (3633, 3669)	Ch:S Ch:P
8939	<i>Blumea</i> DC. <i>B. gariepina</i> DC. (Leistner 1967)	N:R,P,SV
8943	<i>Pechuel-oeschea</i> O. Hoffm. <i>P. leubnitziae</i> (Kuntze) O. Hoffm. (De Beer collecting nr. 74)	N:R
8967	<i>Ifloga</i> Cass. <i>I. molluginoides</i> (DC.) Hilliard (Leistner & Werger 1973)	T:S
9006	<i>Helichrysum</i> Mill. <i>H. argyrosphaerum</i> DC. (3716) <i>H. arenicola</i> M.D. Henderson (Leistner 1967) <i>H. dregeanum</i> Sond. & Harv. (Leistner 1959b) <i>H. micropoides</i> DC. (Leistner collecting nr. 2905)	T:FS T:S Ch:FS T:S
9051	<i>Rosenia</i> Thunb. emend. Bremer <i>R. humilis</i> (Less.) Bremer (3636)	Ch:R,P
9090	<i>Geigeria</i> Griesselich <i>G. brevifolia</i> (DC.) Harv. (3887) <i>G. filifolia</i> Mattf. (3672a) <i>G. obtusifolia</i> L. Bol. (PRE) <i>G. ornativa</i> O. Hoffm. (3627, 3706, 3856) <i>G. pectidea</i> (DC.) Harv. (3897)	Ch:SD Ch:SV Ch:SV Ch:SV,P Ch:R,SV
9320	<i>Eriocephalus</i> L. <i>E. aspalathoides</i> DC. (3835) <i>E. pubescens</i> DC. (Leistner 1967)	Ch:P Ch:FS,SV
9366	<i>Pentzia</i> Thunb. <i>P. globosa</i> Less. (Leistner & Werger 1973) <i>P. incana</i> (Thunb.) Kuntze (3923, 3946) <i>P. spinescens</i> Less. (3884)	Ch:S Ch:SV,R Ch:P
9411	<i>Senecio</i> L. <i>S. arenarius</i> Thunb. (Leistner 1967) <i>S. consanguineus</i> DC. (3698, 3717) <i>S. eenii</i> (S. Moore) Merxm. (3674, 3700)	T:S T:S T:SV
9425	<i>Dimorphotheca</i> Vaill. ex Moench <i>D. polyptera</i> DC. (3603, 3712, 3911)	T:S
9427	<i>Osteospermum</i> L. <i>O. leptolobum</i> (Harv.) T. Norl. (PRE) <i>O. muricatum</i> E. Mey. ex DC. subsp. <i>muricatum</i> (3879, 3929) <i>O. scariosum</i> DC. var. <i>scariosum</i> (PRE)	H:S H:R,P,SV H:P
9435	<i>Hirpicium</i> Cass. <i>H. echinus</i> Less. (3598, 3680, 3825) <i>H. gazanioides</i> (Harv.) Roessl. (3577)	H:SV T:SV

Table 3 (Continued)
 Check list of flowering plants of the Kalahari Gemsbok National Park (See text for explanation of symbols)

		Life form: soil/habitat
	<i>H. gorterioides</i> (Oliv. & Hiern) Roessl. subsp. <i>gorterioides</i> (PRU)	T:SV
9438	<i>Berkheya</i> Ehrh. <i>B. ferox</i> O. Hoffm. var. <i>tomentosa</i> Roessl. (Leistner 1967)	N:S
9441	<i>Platycarpha</i> Less. <i>P. carlinoides</i> Oliv. & Hiern (3675, 3899)	H:R
9501	<i>Dicoma</i> Cass. <i>D. capensis</i> Less. (3576) <i>D. schinzii</i> O. Hoffm. (3613, 3818)	H:S H:S

maephyte value and the increase in the hemicyptophyte value (Werger 1986). This is probably due to differences in their root systems and the greater ability of hemicyptophytes to utilise sporadic or light rains (Werger 1986). The high therophyte value seems to be correlated with increasing aridity rather than soil texture (Rutherford & Westfall 1986; Werger 1986).

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