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THE CHIMANIMANI MOUNTAINS: AN UPDATED CHECKLIST

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SUMMARY

Extending over 530 km^2 on both sides of the Mozambique–Zimbabwe border, and primarily defined by its underlying geology, the Chimanimani massif is renowned for its montane vegetation and a high number of endemic taxa. A detailed vascular plant checklist from the area above 1200 m altitude was produced by Goodier and Phipps in 1961, but focussed mostly on the Zimbabwe side. Here we present a revision of that checklist with updated nomenclature and family circumscriptions, incorporating many recent additional records particularly from Mozambique. It is recognised that a fully comprehensive list for the montane area on both sides of the border would probably use a lower limit of 800 m and cover moist forests in more detail. The revised checklist covers 977 taxa, 956 of them native, from 142 families (including ferns and gymnosperms); the 74 Chimanimani strict montane endemics, 7.7% of the flora, are indicated along with 19 near-endemic taxa. Comparison with checklists for other montane massifs in the Flora Zambesiaca area shows that the Chimanimani is not particularly species-rich, however it covers a smaller area with lesser altitudinal range. Despite the lower number of species recorded, the number of endemics on the Chimanimanis is significantly greater. Aspects of the botanical significance of the area are discussed.

KEY WORDS: checklist – endemics – phytogeography – Zimbabwe

INTRODUCTION

The Chimanimani mountains, straddling the Mozambique–Zimbabwe border between 19°36' and 20°04' S, have long held fascination for botanists on account of their plant species diversity and the exceptionally high number of endemic taxa (Timberlake *et al.* 2016b). Although the first known plant collections from the mountains were by Charles Swynnerton in 1906, the heyday of collecting and documentation was from 1948 to 1966, culminating in a series of publications on the mountains' ecology (Phipps & Goodier 1962), plant species composition (Goodier & Phipps 1958, 1961), endemics (Wild 1964) and phytogeography (Wild 1966). Apart from the study by Dutton and Dutton (1975), and more recently the Trans-Frontier Conservation Area (TFCA) Management Plan (Ghiurghi, Dondeyne & Bannermann 2010), most of our knowledge and understanding of the mountains has come from the Zimbabwe side. Knowledge of the Mozambique side, which comprises around three-quarters of the total extent, has been limited and based primarily on extrapolation. To redress this imbalance, the Critical Ecosystem Partnership Fund (CEPF) recently provided funding for a botanical study of the Mozambique side resulting in over 1000 plant collections and an improved understanding, which particularly focussed on endemic and/or threatened species (Timberlake *et al.* 2016b).

Two checklists of the montane flora of the Chimanimani mountains have been produced, both by Rawdon Goodier and Jim Phipps using an altitudinal lower limit of 4000 feet (c. 1200 m) and with the main focus on the Zimbabwe portion. The initial list (Goodier & Phipps 1958) mentions 573 taxa, while the later revision (Goodier & Phipps 1961), compiled after much more collecting in the mountains, has 859 taxa, some of them of uncertain identity. The improved knowledge and understanding now available for the flora of the Mozambique side has allowed us to revise these checklists.

THE CHIMANIMANI MOUNTAINS

The Chimanimani massif itself, rising out of the Central African Plateau and forming part of the eastern continental escarpment (Clark, Barker & Mucina 2011), is effectively defined by its underlying geology, consisting of Frontier Series sediments of the Umkondo Group over 1785 million years old that have been metamorphosed and subjected to extensive folding (Watson 1969). The main constituent rock types are nutrient-deficient quartzites and the richer schists; it is the more extensive quartzites that give rise to the rugged scenery while schist generally supports rolling grassland.

Covering an area of approximately 530 km^2 above 500–700 m altitude in the south and east and 1000–1200 m in the north and west, the mountains extend about 50 km north-south and are up to 20 km wide. The main peaks are situated along the central north -south spine and are over 2000 m high (Mt Binga is 2436 m), although the majority of the massif is at an altitude of 1000–1800 m. Annual rainfall figures are not available but are likely to be around 2500–3000 mm/year on the upper plateau and peaks (Timberlake *et al.* 2016b), much higher than those recorded in the rainshadow below in Chimanimani town. In the higher parts rainfall can occur throughout the year while low, moisture-laden cloud is common above 1500 m, even in the dry season.

The major determinant of vegetation type and composition is substrate and soil (Phipps & Goodier 1962); a vegetation map with an outline of the main types is available for the Zimbabwe side (Goodier & Phipps 1962). Slopes below 1200–1400 m are generally covered in miombo woodland dominated by *Brachystegia tamarindoides* subsp. *microphylla* on quartzite and by *Brachystegia spiciformis* on schist. Above 1200 m the main vegetation comprises scrub, grassland or lithophytic communities. Ericaceous scrub, often found between boulders, is confined to quartzite and supports many of the endemic taxa, while on schist a more open shrub grassland with *Protea* species and *Morella chimanimaniana* is found. Grassland is perhaps the most widespread formation across the plateau with differences in grass species seen on different soil types; it also supports a number of the endemic taxa. Rock ledges and quartzite crags also support many endemic and interesting taxa. In gullies and favourable moister habitats, patches of Afromontane evergreen forest (often somewhat stunted) are found, normally 1 to 5 ha in extent. Species found here can be quite different from those found elsewhere.

THE CHECKLIST

The checklist presented here is based primarily on the second, revised list published in Kirkia (Goodier & Phipps 1961) that covered areas on quartzite and schist above an altitude of 4000 feet (c. 1200 m). To ensure comparability, the current list also uses a 1200 m lower altitudinal limit, although it is clear that in the eastern and southern parts of the massif in Mozambique, a montane flora can be found down to around 800 m and some of the quartzite endemics can be found down as low as 350 m. Some species recorded on recent trips down to 1000 m are therefore included here, although the geological substrate basis is retained. Records from the Flora of Mozambique and Flora of Zimbabwe websites (Hyde *et al.* 2017a, 2017b) are also included.

Specimens of uncertain identity, cited in the original checklist only by genus and collector number, have been checked where possible in the Kew (K) or Harare (SRGH) herbaria and identified to species. Where it has not been possible to locate the specimen or confirm the identification, the original record has been omitted. One specimen, usually from Zimbabwe, is cited for each record, and a second added in many instances if there is a recent collection from Mozambique.

Although grouped under Pteridophytes, Gymnosperms, Monocotyledons and Dicotyledons, families otherwise follow the APG III system (Angiosperm Phylogeny Group 2009) and the Pteridophyte Phylogeny Group (2016), and are listed alphabetically. For convenience genera and species are also listed alphabetically under each family;

nomenclature generally follows that in the African Plants Database (http://www.ville-ge.ch/musinfo/bd/cjb/africa/index.php). Species authorities are abbreviated following Brummitt and Powell (1992). Where a taxon is believed to be endemic or near-endemic to the Chimanimani mountains this is indicated with an **E** or **NE**, respectively. Following Timberlake *et al.* (2016b), endemics are considered to be those taxa confined solely to quartzite and schist substrates of the Chimanimani massif, while near-endemics are those taxa found in the Chimanimani mountains but also in immediately adjacent areas such as commercial farmland and forestry plantations in Chimanimani and Chipinge districts, the Banti, Cashel and Himalaya areas in Zimbabwe and Chirinda Forest, or in nearby montane or upland areas in Mozambique such as Rotanda and Tsetserra. Species known to be introduced are indicated with an asterisk (*****).

The revised checklist contains 977 taxa with 105 Pteridophytes, 4 Gymnosperms and 868 flowering plants (Table 1). Of these, 21 (2.1%) are introductions, and of the 956 native, non-introduced species, 74 (7.7%) are believed to be endemic and a further 19 (2.0%) are near-endemic. These figures differ slightly from those given in Timberlake *et al.* (2016b) as only taxa from above 1000–1200 m are included here. The largest families represented in the checklist are shown in Table 2.

Table 1. Number of taxa, endemics and introductions in the Chimanimani checklist, by group.

	No. taxa	**No. endemics**	**No. introduced**
Pteridophytes	105	-	-
Gymnosperms	4	-	1
Monocotyledons	311	22	2
Dicotyledons	557	52	18
TOTAL	977	74	21

DISCUSSION

Coverage

The original Goodier & Phipps checklists (1958, 1961) were primarily focused on the Zimbabwe side of the Chimanimani mountains, covering only around a quarter of their total extent. Subsequent studies (Timberlake *et al.* 2016b) have not shown any obvious difference in species distribution across the border, although quartzite outcrops, which are where most of the endemics are found, extend to a much lower altitude (800 m) on the Mozambique side, lower than the altitudinal limit set here. A future, more comprehensive, checklist should retain the geological definition (quartzite plus schist substrates only) used by Goodier and Phipps but have a lower altitudinal limit of perhaps 800 m (although not too much below this even though the substrate may be the same) in order to avoid unnecessarily including lowland forest species.

Of greater significance is the probable under-representation of certain habitats and features in the list. Goodier & Phipps (1961) recognise that moist forest patches – of which there are many although they are limited in extent (see Müller 2006, Timberlake *et al.* 2016b: 28, 39) – were not adequately covered in their checklist. This situation has not been greatly improved upon as the 2014–2016 collecting trips carried out by the authors and others focussed primarily on endemics and species of restricted distribution. As the flora of moist forest is significantly different from that of scrub, grassland and crags, many additional species will probably be added to the list when the Afromontane forest patches are studied in more detail. It is believed that if this were done, and the altitudinal limit reduced to 800 m, the Chimanimani checklist may well exceed 1200 taxa.

One other habitat that has not been well studied, and for obvious accessibility reasons, are the steep gorges. These are rare on the Zimbabwe side but much more common in the southern section in Mozambique along the middle reaches of the Rio Mufomodzi and Rio Murera.

Table 2. Top 14 families represented in the Chimanimani checklist with more than 10 taxa each.

Family	**No. taxa**
Orchidaceae	97
Asteraceae	92
Poaceae	79
Leguminosae (all subfamilies)	63
Rubiaceae	56
Cyperaceae	31
Lamiaceae	30
Asparagaceae	21
Iridaceae	19
Aspleniaceae (Pteridophyta)	18
Pteridaceae (Pteridophyta)	17
Apocynaceae	17
Asphodeleaceae	17
Orobanchaceae	16

Moist forests and woodlands lie along the foothills of the Chimanimanis and are particularly well-developed in the south and east. Found at altitudes of 150–600 m, below the lower range of this list, these forests are rich in species and contain some not found elsewhere in Zimbabwe, although they may be more widespread in Mozambique. A preliminary checklist was first completed in the 1970s by staff at the National Herbarium in Harare and shows 786 taxa for these low altitude forests and other lowland habitats, but it is not clear what upper altitudinal limit (if any) was used. From some of the species listed (e.g. *Leucospermum saxosum* and *Syncolostemon flabellifolius*) it may well have included some montane areas. The list was updated in 1999 as regards nomenclature as part of a Visitor's Guide to the Lower Rusitu Valley in Zimbabwe (Timberlake 2000) covering 784 taxa (58 pteridophytes, 2 gymnosperms, 222 monocotyledons and 502 dicotyledons), but the guide was never published. More recently, a study along the Mozambique foothills gave a partial list of 532 taxa (Timberlake *et al.* 2016a), few of which are likely to extend to the montane area.

Phytogeography and Endemism

Analysis of the similarities of the Chimanimani flora to those from elsewhere, or of any phytogeographical links, is not attempted here. On the basis of its species composition, Wild (1964), and others before and after such as Weimark (1941), White (1978) and van Wyk & Smith (2001), have grouped the Chimanimani flora with that of Nyanga, Vumba, Mt Gorongosa and even massifs further north such as Mt Mulanje in Malawi. However, in some regards the flora also has similarities to the fynbos vegetation of the equally nutrient-deficient Cape Mountains in South Africa, as seen, for example, in the presence of *Erica* species and the restio *Platycaulos*.

The revised checklist shows 74 endemics and 19 near-endemics, although it only includes taxa found above 1200 m altitude; some endemics only known from lower altitudes (see Timberlake *et al.* 2016a, 2016b) are not included here. Owing to this altitudinal limitation, and the lack of separation between strict endemics, near-endemics

and so-called Umkondo sandstone endemics, the earlier published figure of 70 taxa endemic to the Chimanimani mountains given in Mapaura & Timberlake (2002) and Mapaura (2002) is not strictly comparable. The actual number of montane endemics now known from the area is slightly higher; the recent Mozambique study lists seven possible new species to science (Timberlake *et al.* 2016b: Table 6.4), none of which are listed in Mapaura (2002).

Conservation

Although this checklist covers only the upper, montane parts of the Chimanimani massif, it should be recognised that it is the whole Chimanimani mountain area, together with the lowland forests, woodlands and wetlands in the south and on the Mozambique side, that are of international conservation significance. The species-rich lowland moist forests and wetlands are under the most threat (Timberlake *et al.* 2016a), even though a significant proportion of them lie inside the Chimanimani Trans-Frontier Conservation Area (TFCA). Most of the forests and wetlands, however, lies in the buffer zone rather than the more highly-protected core zone.

Nearly all the area covered by the checklist is formally protected as Chimanimani National Park in Zimbabwe or as the Reserva Nacional de Chimanimani in Mozambique. Together these make up the core zone of the Chimanimani TFCA (Anon. n.d., Ghiurghi *et al.* 2010). The only area covered by the present checklist and not fully protected is about 330 ha in the Mussapa Gap area (1100–1250 m altitude), which was presumably excised to allow for existing fields and settlement. However, despite this level of protection, in 2004 there was a massive influx of (illegal) gold miners, particularly on the Mozambique side (Dondeyne *et al.* 2009). Before 2006 the numbers of miners were estimated at 10,000 (Ndunguru *et al.* 2006), but had decreased to around 1000 by 2016 (Timberlake *et al.* 2016b). Apart from gold-panning activity along many of the larger streams, and a probable increase in the incidence of wildfires, this large influx of people seems to have had a surprisingly minor impact on most plant populations (Timberlake *et al.* 2016b).

The possible threat to species with restricted distribution has been looked at by carrying out IUCN Red List conservation assessments on 82 species (Shah 2016, Timberlake *et al.* 2016b: Annex 2). Over half were considered to be Least Concern despite nearly all of them having a globally restricted distribution of 380 km^2 (the estimated extent of quartzite substrate above 500–1000 m altitude) or less. Many species that were considered to be under threat (Vulnerable or Endangered), particularly the near-endemics, were assessed as such owing to habitat clearance elsewhere in their range. However, a number of others were considered to be possibly affected by a greater incidence of wildfire resulting from the presence of the illegal gold miners. Only in a few cases was habitat destruction considered the main threat.

Comparison with Other Mountains

The total number of taxa from the Chimanimani mountains listed here (977) is somewhat lower than the 1472 taxa recorded from the Nyanga massif (Clark *et al.*, this volume), the 1319 taxa recorded from Mt Mulanje in southern Malawi (Strugnell 2006) and the 1891 taxa from the Nyika plateau in northern Malawi (Burrows & Willis 2005). Although, not surprisingly, it exceeds the total of 605 taxa from the partial checklist available for Mt Gorongosa in central Mozambique (Müller *et al.* 2008). The comparison has limitations as the Nyanga checklist covers a larger area of 2181 km^2 above 1000–1500 m altitude, while the Nyika study covers a much larger and more tropical area of around 3200 km^2, all of which is above 1800 m. The Mulanje study area covers 640 km^2, similar to that of the Chimanimanis, but over a greater altitudinal range (approximately 700 to 3000 m) and with moist forest being more comprehensively covered. It is probably the nutrient poverty of the soils, coupled with the smaller extent of species-rich moist forest, that is the reason for the comparative species poverty of the Chimanimani mountains.

However, the Chimanimani supports a significantly higher number of strict endemics, 74 taxa out of a total of 956 native taxa given in the checklist (7.7%), than is found in the Nyanga area (21 endemics; 1.4%), on Mt Mulanje (71 endemics; 5.4%) or on the Nyika plateau (33 endemics; 1.7%). This is undoubtedly due to the very nutrient-poor and phosphorous-deficient quartzite substrate that has encouraged local vicariant speciation (Wild 1964); the other mountains are derived from significantly less nutrient-deficient granite, syenite or dolerite rocks.

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This checklist is dedicated to Rawdon Goodier and Jim Phipps, who compiled the first checklist of Chimanimani plants in 1958 primarily based on their own extensive collections.

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CHECKLIST OF THE CHIMANIMANI MOUNTAINS

The checklist lists all flowering plants and ferns recorded from above 1200 m altitude. Where two specimen citations are given, one is for Mozambique and one for Zimbabwe.

E = endemic; NE = near-endemic; * = alien species

PTERIDOPHYTA

Anemiaceae

Anemia lepigera (Baker) Christenh.	Swynnerton 611a
Anemia nudiuscula (J.P.Roux) Christenh.	Ballings & Wursten 2315
Anemia simii Tardieu	Ballings & Wursten 2190
Anemia vestita (Baker) Christenh.	Ballings & Wursten 2232

Aspleniaceae

Asplenium aethiopicum (Burm.f.) Bech.	Phipps 452, Ballings & Wursten 2209
Asplenium anisophyllum Kunze	Chase 3913
Asplenium cf. *blastophorum* Hieron.	Mitchell 381
Asplenium boltonii Brause & Hieron.	Mitchell 341
Asplenium dregeanum Kunze	Mitchell 506
Asplenium erectum Willd.	Mitchell 511
Asplenium friesiorum C.Chr.	Ballings & Wursten 2244
Asplenium formosum Willd.	Ballings & Wursten 2194
Asplenium lobatum Pappe & Rawson	Ballings & Wursten 1504
Asplenium mannii Hook.	Mitchell 314, Massunde 261
Asplenium monanthes L.	Mitchell 308
Asplenium obscurum Blume	Mitchell 405
Asplenium protensum Schrad.	Mitchell 523
Asplenium rutifolium (P.J.Bergius) Kunze	Ballings & Wursten 2261
Asplenium sandersonii Hook.	Mitchell 324
Asplenium simii A.F.Braithw.& Schelpe	Mitchell 267
Asplenium stuhlmannii Hieron.	Ballings & Wursten 2242
Asplenium theciferum Humb., Bonpl.& Kunth	Mitchell 344

Athyriaceae

Athyrium newtonii Baker	Chase 3052

Blechnaceae

Blechnum attenuatum (Sw.) Mett.	Chase 3015
Blechnum capense Burm.f.	Ballings & Wursten 2311
Blechnum tabulare (Thunb.) Kuhn	Phipps 313, Ballings & Wursten 2251

Cyatheaceae

Cyathea capensis (L.f.) Sm.	Mitchell 328
Cyathea dregei Kunze	Phipps 287

Dennstaedtiaceae

Blotiella glabra (Bory) R.M.Tryon	Mitchell 395
Blotiella natalensis (Hook.) R.M.Tryon	Chase 3051
Pteridium aquilinum (L.) Kuhn subsp. *capense* (Thunb.) C.Chr.	Mitchell 346

Dryopteridaceae

Dryopteris athamantica (Kunze) Kuntze	Phipps 379
Dryopteris kilimensis (Kuhn) Kuntze	Phipps 471
Dryopteris pentheri (Krasser) C.Chr.	Phipps 459
Elaphoglossum acrostichoides (Hook.& Grev.) Schelpe	Ballings & Wursten 2288
Elaphoglossum aubertii (Desv.) T.Moore	Whellan 1530
Elaphoglossum marojejyense Tardieu	Phipps 656
Elaphoglossum kuhnii Hieron.	Mitchell 529

Elaphoglossum lancifolium (Desv.) C.V.Morton	Watmough 97, Banze 458
Elaphoglossum lastii (Baker) C.Chr.	Chase 3014
Elaphoglossum macropodium (Fée) T.Moore	Wursten 92
Polystichum zambesiacum Schelpe	Whellan 2184
Gleicheniaceae	
Dicranopteris linearis (Burm.f.) Underw.	Ballings & Wursten 2248
Gleichenia polypodioides (L.) Sm.	Ballings & Wursten 2250
Sticherus umbraculiferus (Kunze) Ching	Ballings & Wursten 2262
Hymenophyllaceae	
Abrodictyum rigidum (Sw.) Ebihara & Dubuisson	Ballings & Wursten 2310
Crepidomanes melanotrichum (Schltdl.) J.P.Roux	Mitchell 286
Didymoglossum erosum (Willd.) J.P.Roux	Mitchell 320
Hymenophyllum capense Schrad.	Mitchell 339
Hymenophyllum capillare (Desv) Copel. var. *alternialatum* (Pic.Serm.) Faden	Mitchell 530
Hymenophyllum kuhnii C.Chr.	Ballings & Wursten 2306
Hymenophyllum sibthorpioides (Willd.) Kuhn	Mitchell 321
Hymenophyllum tunbridgense (L.) Sm.	Phipps 658, Ballings & Wursten 2307
Polyphlebium borbonicum (Bosch.) Ebihara & Dubuisson	Ballings & Wursten 2199
Lindsaeaceae	
Lindsaea odorata Roxb.	Wursten 1051
Lycopodiaceae	
Huperzia dacrydioides (Baker) Pic.Serm.	Mitchell 343
Huperzia gnidioides (L.f.) Trevis	Ballings & Wursten 2286
Huperzia ophioglossoides (Lam.) Rothm.	Mitchell 503
Huperzia verticillata (L.f.) Trevis	Wild 2953
Lycopodiella caroliniana (L.) Pic.Serm.	Ballings & Wursten 2279
Lycopodiella cernua (L.) Pic.Serm.	Phipps 277, Ballings & Wursten 2275
Lycopodiella sarcocaulon (Kuhn) Pic.Serm.	Mitchell 227, Timberlake 6185
Lycopodium clavatum L.	Mitchell 348
Lygodiaceae	
Lygodium kerstenii Kuhn	Watmough 101
Marattiaceae	
Ptisana fraxinea (Sm.) Murdock var. *salicifolia* (Schrad.) Murdock	Mitchell 329
Nephrolepidaceae	
Nephrolepis undulata (Afzel.) J.Sm.	Phipps 473
Oleandraceae	
Oleandra distenta Kunze	Ballings & Wursten 2207
Ophioglossaceae	
Ophioglossum vulgatum L. subsp. *africanum* J.E.Burrows	Goodier & Phipps 280
Osmundaceae	
Osmunda regalis L.	Ballings & Wursten 2263
Todea barbara (L.) T.Moore	Ballings & Wursten 2270
Polypodiaceae	
Grammitis nanodes (Peter) Ching	Mitchell 364
Lepisorus excavatus (Willd.) Ching	Ballings & Wursten 2200
Lepisorus schraderi (Mett.) Ching	Mitchell 334
Loxogramme abyssinica (Baker) M.G.Price	Mitchell 298
Melpomene flabelliformis (Poir.) A.R.Sm.& Moran	Phipps 657

Pleopeltis macrocarpa (Willd.) Kaulf.	Ballings & Wursten 2201
Pyrrosia rhodesiana (C.Chr.) Schelpe	Müller 3451

Pteridaceae

Adiantum lunulatum Burm.f.	Ballings & Wursten 2192
Adiantum mendoncae Alston	Mitchell 404
Adiantum poiretii J.E.Wikstr.	Mitchell 524
Cheilanthes buchananii (Baker) Domin	Phipps 324, Ballings & Wursten 2226
Cheilanthes inaequalis (Kunze) Mett.	Banze 451
Cheilanthes multifida (Sw.) Sw.	Ballings & Wursten 2301
Cheilanthes quadripinnata (Forssk.) Kuhn	Swynnerton
Cheilanthes viridis (Forssk.) Sw. var. *glauca* (Sim) Schelpe & N.C.Anthony	Mitchell 330
Pellaea calomelanos (Sw.) Link var. *calomelanos*	Mitchell 299, Banze 452
Pellaea calomelanos (Sw.) Link. var. *swynnertoniana* (Sim) Schelpe	Ballings & Wursten 2195
Pellaea doniana Hook.	Mitchell 330
Pellaea pectiniformis Baker	Ballings & Wursten 2222
Pityrogramma argentea (Willd.) Domin	Ballings & Wursten 2252
Pteris cretica L.	Mitchell 302
Pteris catoptera Kunze	Mitchell 304
Vittaria isoetifolia Bory	Ballings & Wursten 2196
Vitaria volkensii Hieron.	Mitchell 325, Wursten 1067

Schizaeaceae

Schizaea pectinata (L.) Sw.	Ballings & Wursten 2292
Schizaea tenella Kaulf.	Ballings & Wursten 2312

Selaginellaceae

Selaginella dregei (Presl) Hieron.	Ballings & Wursten 2206
Selaginella goudotiana Spring var. *abyssinica* (Spring) Bizarri	Phipps 331, Ballings & Wursten 2213
Selaginella kraussiana (Kunze) A.Braun	Swynnerton 805
Selaginella mittenii Baker	Ballings & Wursten 2202

Tectariaceae

Arthropteris monocarpa (Cordem.) C.Chr.	Mitchell 305
Arthropteris orientalis (J.F.Gmel.) Posth.	Mitchell 233, Osborne 1205

Thelypteridaceae

Christella dentata (Forssk.) Brownsey & Jermy	Mitchell 505
Christella cf. gueinziana (Mett.) Holttum	Ballings & Wursten 2191
Thelypteris confluens (Thunb.) C.V.Morton	Phipps 373

GYMNOSPERMAE

Cupressaceae

Widdringtonia nodiflora (L.) Powrie	Ballings & Wursten 2266

Pinaceae

* *Pinus patula* Schlect.& Cham.	Timberlake 6151

Podocarpaceae

Podocarpus elongatus (Aiton) Pers.	Timberlake 6002
Podocarpus milanjianus Rendle	Swynnerton 1962, Timberlake 6164

MONOCOTYLEDONAE

Aloaceae (see Asphodelaceae)

Amaryllidaceae

Cryptostephanus vansonii I.Verd.	Matimele 2077
Cyrtanthus breviflorus Harv.	Wild 4580
Cyrtanthus rhodesianus Rendle	Swynnerton 769

Anthericaceae (see Asparagaceae)

Arecaceae

	Phoenix reclinata Jacq.	Phipps (s.r.)
	Raphia farinifera (Gaertn.) Hyl.	Ballings & Wursten (photo)

Asparagaceae

	Albuca kirkii (Baker) Brenan	Mapaura 641
	Albuca abyssinica Jacq.	Wursten (photo)
	Asparagus asparagoides (L.) Wight	Phipps
E	*Asparagus chimanimanensis* Sebsebe	Matimele 2056
	Asparagus setaceus (Kunth) Jessop	Phipps 466
	Asparagus virgatus Baker	Phipps 464
	Behnia reticulata (Thunb.) Didr.	Swynnerton 1098
	Chlorophytum cf. *blepharophyllum* Baker	Hadj-Hammou 30
NE	*Chlorophytum pygmaeum* (Weim.) Kativu subsp. *rhodesianum* (Rendle) Kativu	Goodier 510, Timberlake 6014
	Dipcadi marlothii Engl.	Wursten 1074
	Dipcadi viride (L.) Moench	Mapaura 737
	Drimia elata Willd.	Chase 2947
	Eriospermum flagelliforme (Baker) J.C.Manning	Taylor 1795
E	*Eriospermum mackenii* (Hook.f.) Baker subsp. *phippsii* (Wild) P.L.Perry	Phipps 840, Timberlake 6030
	Eucomis autumnalis (Mill.) Chitt.	Hall 234
	Ledebouria revoluta (L.f.) Jessop	Wild 3535, Timberlake 5999
	Ledebouria sp.	Ballings & Wursten 1523
	Merwilla lazulina (Wild) Speta	Chase 2917
	Ornithogalum tenuifolium F.Delaroche subsp. *tenuifolium*	Ballings & Wursten 1519
E	*Sansevieria pedicellata* la Croix	Wild 5638
	Schizocarphus nervosus (Burch.) van der Merwe	Timberlake 5995
	Urginea nyasae Rendle	Sturgeon in SRGH 30517

Asphodelaceae

	Aloe arborescens Mill.	Wursten (photo)
	Aloe chabaudii Schönland var. *chabaudii*	Leach 9043
	Aloe cryptopoda Baker	Matimele 2078
E	*Aloe hazeliana* Reynolds var. *hazeliana*	Goodier 1002, Wursten 1076
E	*Aloe hazeliana* Reynolds var. *howmanii* (Reynolds) S.Carter	Hadj-Hammou 29
E	*Aloe munchii* Christian	Reynolds 8225
NE	*Aloe musapana* Reynolds	Goodier 1007, Matimele 2099
E	*Aloe plowesii* Reynolds	Timberlake 6010
	Aloe rhodesiana Rendle	Crook 258
	Aloe swynnertonii Rendle	Matimele 2052a
E	*Aloe wildii* (Reynolds) Reynolds	Wild 3541, Banze 449
	Bulbine abyssinica A.Rich.	Mapaura 895
	Bulbine latifolia (L.f.) Roem.& Schult.f.	Hadj-Hammou 34
	Dianella ensifolia (L.) DC.	Mapaura 700
	Kniphofia linearifolia Baker	Hall 423, Osborne 1184
	Kniphofia splendida E.A.Bruce	Mapaura 697
	Trachyandra saltii (Baker) Oberm.	Goodier 509

Behniaceae (see Asparagaceae)

Burmanniaceae

	Burmannia madagascariensis Mart.	Wild 2948, Osborne 1188

Colchicaceae

	Gloriosa superba L.	Phipps 462
	Wurmbea angustifolia B.Nord.	Hall 425

Commelinaceae

Aneilema aequinoctiale (P.Beauv.) Kunth	Phipps 499
Commelina africana L. var. *africana*	Goodier & Phipps 285, Mapaura 704
Commelina africana L. var. *krebsiana* (Kunth) C.B.Clarke	Hall 362
Commelina aspera Benth. var. *aspera*	Mapaura 650
Commelina diffusa Burm.f.	Mapaura 736
Commelina pycnospatha Brenan	Mapaura 643
Cyanotis barbata D.Don	Mapaura 668
Cyanotis foecunda Hassk.	Phipps 314, Mapaura 723
Cyanotis sp. near *lapidosa* E.Phillips	Mapaura 681
Murdannia simplex (Vahl) Brenan	Goodier 140, Timberlake 5962

Cyperaceae

Ascolepis capensis (Kunth) Ridl.	Phipps 237
Bulbostylis burchellii (Ficalho & Hiern) C.B.Clarke	Child 6
Bulbostylis collina (Kunth) C.B.Clarke	Phipps 262
Bulbostylis hispidula (Vahl) R.W.Haines	Mapaura 690
Bulbostylis oritrephes (Ridl.) C.B.Clarke	Goodier & Phipps 8
Bulbostylis macra (Ridl.) C.B.Clarke	Phipps 670
Carex spicato-paniculata C.B.Clarke	Phipps 288, Mapaura 658b
Carex steudneri Boeck.	Goodier 173
Coleochloa setifera (Ridl.) Gilly	Goodier & Phipps 211, Timberlake 5978
Costularia natalensis C.B.Clarke	Timberlake 5966
Cyperus albostriatus Schrad.	Phipps 325
Cyperus denudatus L.f. var. *denudatus*	Phipps 374
Cyperus distans L.f.	Hall 448
Cyperus margaritaceus Vahl	Goodier & Phipps 134
Cyperus obtusiflorus Vahl var. *obtusiflorus*	Phipps 384
Cyperus rupestris Kunth	Goodier & Phipps 241
Cyperus schinzii Boeck.	Phipps 318a
Cyperus tenax Boeck.	Phipps 345
Ficinia gracilis Schrad.	Wild 3620
Ficinia stolonifera Boeck.	Goodier 495
Fuirena pubescens Kunth	Phipps 410
Fuirena stricta Steud. var. *stricta*	Timberlake 5985
Isolepis fluitans (L.) R.Br.	Phipps 279, Timberlake 6156
Kyllinga odorata Vahl	Hall 446
Pycreus aethiops (Ridl.) C.B.Clarke	Phipps 237a
Rhynchospora rugosa (Vahl) Gale	Phipps 360
Schoenoplectus corymbosus (Roem.& Schult) J.Raynal	Timberlake 6158
Schoenoxiphium sparteum (Wahlenb.) C.B.Clarke	Goodier & Phipps 361
Scleria catophylla C.B.Clarke	Phipps 250
Scleria bulbifera A.Rich.	Goodier 478
Scleria flexuosa Boeck.	Phipps 691

Dioscoreaceae

Dioscorea schimperiana Kunth	Wursten (photo)

Dracaenaceae (see Asparagaceae)

Eriocaulaceae

	Eriocaulon africanum Hochst.	Wild 3579
E	*Mesanthemum africanum* Hassk.	Timberlake 5969
	Sygonanthus wahlbergii (Korn.) Ruhland	Noel 2141
	Sygonanthus welwitschiiii (Rendle) Ruhland	Ballings & Wursten 2304

Eriospermaceae (see Asparagaceae)
Hemerocallidaceae (see Asphodelaceae)
Hyacinthaceae (see Asparagaceae)

Hypoxidaceae

	Hypoxis angustifolia Lam.	Goodier 219, Mapaura 671
	Hypoxis filiformis Baker	Mutasa 3
	Hypoxis nyasica Baker	Wild 2967
	Hypoxis parvifolia Baker	Goodier & Phipps 338
	Hypoxis rigidula Baker	Goodier & Phipps 205, Massunde 239
	Hypoxis sp. A of FZ	Mutasa 4

Iridaceae

	Aristea abyssinica Pax	Phipps 677
	Aristea ecklonii Baker	Wursten 1060a
	Aristea woodii N.E.Br.	Phipps 346
	Crocosmia aurea (Hook.) Planch. subsp. *aurea*	Hall 424
	Dierama formosum / *plowesii* group	Timberlake 6031
E?	*Dierama plowesii* Hilliard	Plowes 3150
	Dietes iridioides (L.) Klatt	Mapaura 636
	Gladiolus atropurpureus Baker	Timberlake 6043
	Gladiolus crassifolius Baker	Ballings & Wursten 2260
	Gladiolus dalenii Van Geel subsp. *dalenii*	Phipps 431
E	*Gladiolus juncifolius* Goldblatt	Grosvenor 177
	Gladiolus mossambicensis Baker	Mutasa 11
E	*Hesperantha ballii* Wild	Ballings & Wursten 2300
	Lapeirousia erythrantha (Klatt) Baker	Goodier 183
	Moraea muddii N.E.Br.	Whellan 2153
	Moraea schimperi (Hochst.) Pic.Serm.	Crook M151
	Moraea stricta Baker	Grosvenor 225, Timberlake 6034
	Moraea thomsonii Baker	Wild 3550
	Radinosiphon leptostachya (Baker) N.E.Br.	Phipps 298, Hadj-Hammou 46

Juncaceae

	Juncus dregeanus Kunth subsp. *bachitii* (Steud.) Hedberg	Goodier & Phipps 357

Musaceae

*	Musa sp.	Timberlake (s.r.)

Orchidaceae

	Aerangis mystacidii (Rchb.f.) Schltr.	Ball (s.r.)
	Angraecopsis parviflora (Thouars) Schltr.	Ball 220
	Angraecum chamaeanthus Schltr.	Ball 281
E	*Angraecum chimanimaniense* G.Will.	Ball 412
	Angraecum conchiferum Lindl.	Ball 356
	Angraecum minus Summerh.	Ball 282
	Angraecum sacciferum Lindl.	Ball 353
	Ansellia africana Lindl.	Ball (s.r.)
	Bolusiella sp.	Ball 354
	Brachycorythis buchananii (Schltr.) Rolfe	Phipps 429
	Brachycorythis inhambanensis (Schltr.) Schltr.	Ball 190
	Brachycorythis ovata Lindl. subsp. *welwitschii* (Rchb.f.) Summerh.	Ball 422
	Brachycorythis pleistophylla Rchb.f. subsp. *pleistophylla*	Mapaura 722
	Brachycorythis tenuior Rchb.f.	Ball 218
	Brownleea maculata P.J.Cribb	Ballings & Wursten 2322
	Brownleea parviflora Lindl.	Ball 283
	Bulbophyllum ballii P.J.Cribb	Ball 258
	Bulbophyllum elliotii Rolfe	Ballings & Wursten (photo)
	Bulbophyllum fuscum Lindl. var. *melinostachyum* (Schltr.) J.J.Verm.	Ball 229
	Bulbophyllum humblotii Rolfe	Ball 316
	Bulbophyllum maximum (Lindl.) Rchb.f.	Ball 151
	Bulbophyllum sandersonii (Hook.f.) Rchb.f. subsp. *sandersonii*	Hall 221

	Bulbophyllum scaberulum (Rolfe) Bolus	Ball 251
	Bulbophyllum unifoliatum De Wild. subsp. *infracarinatum* (G.Will.) J.J.Verm.	Ball 986
	Cynorkis anisoloba Summerh.	Ball 244
	Cynorkis debilis (Hook.f.) Summerh.	Ballings & Wursten 2193
	Cynorkis kassneriana Kraenzl.	Ball 243
	Cynorkis kirkii Rolfe	Ball 424
	Cyrtorchis praetermissa Summerh.	Ball (s.r.)
	Disa aconitoides Sond. subsp. *concinna* (N.E.Br.) H.P.Linder	Ball 426
	Disa baurii Bolus	Wild 3556
	Disa brevicornis (Lindl.) Bolus	Ball 550
E	*Disa chimanimaniensis* (H.P.Linder) H.P.Linder	Ball 577
	Disa equestris Rchb.f.	Ball 450
	Disa hircicornis Rchb.f.	Phipps 430
	Disa fragrans Schltr. subsp. *fragrans*	Phipps 645, Hadj-Hammou 40
	Disa ornithantha Schltr.	Goodier 195
	Disa patula Sond. var. *transvaalensis* Summerh.	Phipps 391
	Disa saxicola Schltr.	Goodier 174
	Disa versicolor Rchb.f.	Phipps 391a
	Disa zimbabweensis H.P.Linder	Ball 549
	Eulophia longisepala Rendle	Ball 461
	Eulophia saxicola P.J.Cribb & G.Will.	Ball 425
	Eulophia tenella Rchb.f.	Hall 215
	Eulophia tuberculata Bolus	Garley 168
	Habenaria anaphysema Rchb.f.	Phipps 369
	Habenaria falcicornis (Lindl.) Bolus var. *caffra* (Schltr.) Renz & Schelpe	Ball 236
	Habenaria macrostele Summerh.	Goodier 198
	Habenaria singularis Summerh.	Ball 238
	Habenaria subaequalis Summerh.	Ball 237
	Holothrix macowaniana Rchb.f.	Ball 579
	Holothrix orthoceras (Harv.) Rchb.f.	Ball 286
	Holothrix villosa Lindl.	Ball 583
	Jumellea walleri (Rolfe) la Croix	Ball 278
	Liparis bowkeri Harv.	Hall 226
	Liparis chimanimaniensis G.Will.	Hall 410
	Neobolusia ciliata Summerh.	Hall 225
E	*Oligophyton drummondii* H.P.Linder & G.Will.	Drummond 8930
	Orthochilus eustachyus (Rchb.f.) Bytebier	Goodier & Phipps 343
	Orthochilus foliosus (Lindl.) Bytebier	Ball 432
	Orthochilus mechowii Rchb.f.	Mutasa 7
	Orthochilus milnei (Rchb.f.) Bytebier	Ball 555
	Platylepis glandulosa (Lindl.) Rchb.f.	Ball 741
	Polystachya adansoniae Rchb.f.	Wursten 1061
	Polystachya albescens Ridl. subsp. *imbricata* (Rolfe) Summerh.	Ball 181
	Polystachya caespitifica Engl. subsp. *hollandii* (L.Bolus) P.J.Cribb & Podzorski	Ball 289
	Polystachya concreta (Jacq.) Garay & H.R.Sweet	Ngoni 234
	Polystachya cultriformis (Thouars) Spreng.	Ball (s.r.)
	Polystachya dendrobiiflora Rchb.f.	Wursten 1064
	Polystachya fusiformis (Thouars) Lindl.	Ball 607
	Polystachya subumbellata P.J.Cribb & Podzorski	Beasley 234
	Polystachya transvaalensis Schltr.	Ball (s.r.)
NE	*Polystachya valentina* la Croix & P.J.Cribb	Ball 246, Timberlake 6028
	Rangaeris muscicola (Rchb.f.) Summerh.	Ball 223
	Rhipidoglossum rutilum (Rchb.f.) Schltr.	Holmes 139
	Satyrium aberrans Summerh.	Ball 546
	Satyrium breve Rolfe	Ball 415
	Satyrium buchananii Schltr.	Philcox et al. 9027

	Satyrium chlorocorys Rolfe	Hadj-Hammou 52
	Satyrium compactum Summerh.	Ball 187
	Satyrium flavum la Croix	Ball 946
	Satyrium longicauda Lindl.	Phipps 441
	Satyrium mirum Summerh.	Ball 561
	Satyrium neglectum Schltr. var. *neglectum*	Phipps 375
	Satyrium oliganthum Schltr.	Goodier & Phipps 355
	Satyrium trinerve Lindl.	Phipps 413
E	*Schizochilus calcaratus* P.J.Cribb & la Croix	Whellan 2211
NE	*Schizochilus lepidus* Summerh.	Hall 377
	Solenangis conica (Schltr.) L.Jonss.	Holmes 152
	Stenoglottis zambesiaca Rolfe	Hall 297
	Tridactyle bicaudata (Lindl.) Schltr.	Ball 277, Shah 3
	Tridactyle inaequilonga (De Wild.) Schltr.	Ball 297
	Tridactyle tricuspis (Bolus) Schltr.	Ball 193
	Tridactyle tridactylites (Rolfe) Schltr.	Ball 191
	Tridactyle verrucosa P.J.Cribb	Fibeck & Phiri s.n.
	Vanilla polylepis Summerh.	Ball 844
	Ypsilopus erectus (P.J.Cribb) P.J.Cribb & J.L.Stewart	Ball 245

Poaceae

	Alloteropsis semialata (R.Br.) Hitchc. var. *ecklonii* Stapf	Goodier & Phipps 167
	Andropogon eucomus Nees subsp. *eucomus*	Phipps 236
	Andropogon eucomus Nees subsp. *huillensis* (Rendle) Sales	Phipps 272
	Andropogon mannii Hook.f.	Phipps 2842
	Andropogon perligulatus Steud.	Phipps 278a
	Andropogon schirensis A. Rich.	Phipps 350, Timberlake 5971
	Aristida adscensionis L.	Timberlake 6180
	Aristida junciformis Trin.& Rupr. subsp. *macilenta* (Henr.) Melderis	Sturgeon in SRGH 30759
	Aristida leucophaea Henr.	Goodier & Phipps 54
	Aristida recta Franch.	Phipps 269, Mapaura 691
	Bewsia biflora (Hack.) Gooss.	Phipps 382
	Bothriochloa radicans (Lehm.) A.Camus	Timberlake 6190
	Brachyachne fulva Stapf	Goodier & Phipps 142
	Chloris pycnothrix Trin.	Goodier & Phipps 295
	Ctenium concinnum Nees	Matimele 2088
	Cymbopogon nardus (L.) Rendle	Phipps (s.r.)
	Danthoniopsis pruinosa C.E.Hubb.	Timberlake 5963
E	*Danthoniopsis chimanimaniensis* (Phipps) Clayton	Timberlake 5990
	Digitaria diagonalis (Nees) Stapf	Phipps 381
	Digitaria gazensis Rendle	Phipps 243
	Digitaria nitens Rendle	Goodier & Phipps 315
	Digitaria setifolia Stapf	Goodier & Phipps 275
	Diheteropogon amplectens (Nees) Clayton var. *amplectens*	Timberlake 6176
	Diheteropogon filifolius (Nees) Clayton	Goodier & Phipps 139
	Eleusine coracana (L.) Gaertn.	Child 11
	Elionurus muticus (Spreng.) Kuntze	Goodier & Phipps 133, Timberlake 5997b
	Eragrostis acraea De Winter	Goodier & Phipps 333, Timberlake 6181
	Eragrostis caniflora Rendle	Goodier & Phipps 193
	Eragrostis capensis (Thunb.) Trin.	Phipps 242
E	*Eragrostis desolata* Launert	Goodier & Phipps 24, Matimele 2052
	Eragrostis mollior R.E.Fr.	Phipps 328, Mapaura 662
	Eragrostis racemosa (Thunb.) Steud.	Phipps 252, Timberlake 6032
	Eragrostis tenuifolia (A.Rich.) Steud.	Goodier & Phipps 299
	Eragrostis tincta S.M.Phillips	Phipps 367
	Eragrostis volkensii Pilg.	Goodier & Phipps 19
	Eriochrysis brachypogon (Stapf) Stapf	Phipps 271
	Festuca costata Nees	Goodier 504
	Hyparrhenia cymbaria (L.) Stapf	Goodier 996

	Hyparrhenia newtonii (Hack.) Stapf var. *newtonii*	Hadj-Hammou 41
	Isachne mauritiana Kunth	Goodier 1002
	Ischaemum fasciculatum Brongn.	Phipps 296
	Koeleria capensis (Steud.) Nees	Goodier 505
	Loudetia simplex (Nees) C.E.Hubb.	Phipps 270, Timberlake 6174
	Melinis nerviglumis (Franch.) Zizka	Goodier & Phipps 136, Mapaura 678
	Melinis repens (Willd.) Zizka subsp. *repens*	Phipps 257, Mapaura 703
	Microchloa altera (Rendle) Stapf	Goodier & Phipps 143
	Microchloa caffra Nees	Goodier 508
	Monocymbium ceresiiforme (Nees) Stapf	Phipps 297
	Oplismenus hirtellus (L.) P.Beauv.	Phipps (s.r.)
	Panicum brazzavillense Franch.	Phipps 357
	Panicum dregeanum Nees	Phipps 241
	Panicum ecklonii Nees	Goodier & Phipps 135
	Panicum eickii Mez	Mapaura 689
	Panicum inaequilatum Stapf & C.E.Hubb.	Phipps 317
	Panicum natalense Hochst.	Wursten 1072
	Pentaschistis natalensis Stapf	Phipps 660
	Phragmites australis (Cav.) Trin.	Goodier & Phipps 287
*	*Poa annua* L.	Goodier & Phipps 298
	Pogonarthria squarrosa (Roem.& Schult.) Pilg.	Goodier & Phipps 301
	Pogonochloa greenwayi C.E.Hubb.	Chase 2979
	Rhytachne rottboellioides Desv.	Goodier & Phipps 122, Timberlake 6041
	Rytidosperma davyi C.E.Hubb.	Goodier & Phipps 204
	Sacciolepis spiciformis (A.Rich.) Stapf	Goodier & Phipps 18
	Schizachyrium sanguineum (Retz.) Alston	West 3623
	Setaria megaphylla (Steud.) Durand.& Schinz	Goodier & Phipps 83
	Setaria sphacelata (Schumach.) Stapf & M.B.Moss	Phipps 305
	Sporobolus centrifugus (Trin.) Nees	Goodier & Phipps 184
	Sporobolus pyramidalis P.Beauv.	Goodier & Phipps 297
	Sporobolus subtilis Kunth	Phipps 266
	Styppeiochloa gynoglossa (Gooss.) De Winter	Goodier & Phipps 20
	Themeda triandra Forssk.	Phipps 245
	Trachypogon spicatus (L.f.) Kuntze	Goodier & Phipps 121, Mapaura 732
	Tragus berteronianus Schult.	Goodier & Phipps 296
	Trichanthecium brazzavillense (Franch.) Zuloaga & Morrone	Mapaura 661
	Trichopteryx dregeana Nees	Goodier & Phipps 57
	Trichopteryx stolziana Henr.	Phipps 688, Mapaura 657
	Tristachya nodiglumis K.Schum.	Phipps 481
	Tristachya leucothrix Nees	Goodier & Phipps 291, Timberlake 5998
	Urelytrum agropyroides (Hack.) Hack.	Phipps 414

Restionaceae

E	*Platycaulos quartziticola* (H.P.Linder) H.P.Linder	Ballings & Wursten 2308

Smilaceae

	Smilax anceps Willd.	Swynnerton 1099, Massunde 240

Strelitziaceae

	Strelitzia caudata R.A.Dyer	Munch 127

Velloziaceae

E	*Xerophyta argentea* (Wild) L.B.Sm.& Ayensu	Ballings & Wursten 2298
	Xerophyta viscosa Baker	Timberlake 6016

Xanthorrhoeaceae (see Asphodelaceae)

Xyridaceae

	Xyris angularis N.E.Br.	Phipps 240
E	*Xyris asterotricha* Lock	Goodier 185, Hadj-Hammou 44
	Xyris congensis Büttner	Timberlake 5988

Xyris erubescens Rendle	Goodier & Phipps 243, Timberlake 6022
Xyris gerrardii N.E.Br.	Miss Weiste 9125
Xyris obscura N.E.Br.	Hadj-Hammou 22
Xyris rehmannii L.A.Nilsson	Phipps 440
Xyris schliebenii Poelln.	Hadj-Hammou 23
E *Xyris* sp nov.	Hadj-Hammou 59

Zingiberaceae

Afromomum angustifolium (Sonn.) K.Schum.	Hall 252
Aframomum albiflorum Lock	Wursten (photo)

DICOTYLEDONAE

Acanthaceae

Asystasia gangetica (L.) T.Anderson subsp. *micrantha* (Nees) Ensermu	Ballings & Wursten (s.r.)
Brillantaisia cicatricosa Lindau	Finlay SRGH 12664
Dicliptera clinopodia Nees	Phipps (s.r.)
Hypoestes aristata (Vahl) Roem.& Schult.	Noel 2039
Justicia betonica L.	Whellan 1267
Justicia striata (Klotzsch) Bullock	Phipps 490
Mellera lobulata S.Moore	Wild 3576
Phaulopsis imbricata (Forssk.) Sweet subsp. *imbricata*	Noel 2175
Pseuderanthemum subviscosum (C.B.Clarke) Stapf	Wild 3575
Thunbergia alata Sims	Phipps 472

Achariaceae

Kiggelaria africana L.	Swynnerton 2039
Rawsonia lucida Harv.& Sond.	Goodier & Phipps 170

Amaranthaceae

* *Amaranthus* sp.	Timberlake (s.r.)
Celosia trigyna L.	Phipps 474a
Centemopsis gracilenta (Hiern) Schinz	Wild 3581
Cyathula cylindrica Moq.	Goodier 995

Anacardiaceae

Rhus chirindensis Baker f.	Phipps 491
Rhus lucida L.	Swynnerton 635
Rhus natalensis Krauss	Wild 3637
Rhus tumulicola S.Moore var. *tumulicola*	Sturgeon in SRGH 30616

Annonaceae

Artabotrys monteiroae Oliv.	Swynnerton 1764

Aphloiaceae

Aphloia theiformis (Vahl) Benn.	Swynnerton 634

Apiaceae

Afrosciadium rhodesicum (Cannon) P.J.D.Winter	Phipps 428
Alepidea amatymbica Eckl.& Zeyh.	Goodier & Phipps 332
Alepidea peduncularis A.Rich.	Phipps 434, Mapaura 683
Centella asiatica (L.) Urb.	Wursten (photo)
E *Centella obtriangularis* Cannon	Wursten 1083
Diplolophium buchananii (Oliv.) C.Norman subsp. *swynnertonii* (Baker f.) Cannon	McCosh 3, Banze 406
Heteromorpha arborescens (Spreng.) Cham.& Schltdl. var. *abyssinica* (A.Rich.) H.Wolff	Noel 2185
Heteromorpha arborescens (Spreng.) Cham.& Schltdl. var. *montana* P.J.D.Winter	Ballings & Wursten 2274
Hydrocotyle sibthorpioides Lam.	Noel 2161

Apocynaceae

	Asclepias aurea (Schltr.) Schltr.	Goodier & Phipps 242
	Asclepias cucullata (Schltr.) Schltr. subsp. *scabrifolia* (S.Moore) Goyder	Mutasa 2
	Asclepias fimbriata Weim.	Goodier & Phipps 198
E	*Asclepias graminifolia* (Wild) Goyder	Goodier & Phipps 199, Timberlake 5977
	Asclepias palustris (K.Schum.) Schltr.	Wild 3610
NE	*Aspidoglossum glabellum* Kupicha	Wursten 1054
	Aspidoglossum nyasae (Britten & Rendle) Kupicha	Phipps 500
	Ceropegia racemosa N.E.Br. subsp. *glabra* H.Huber	Osborne 1206
E	*Ceropegia* sp. nov. near *C. linearis*	Kelly 74, Osborne 1190
	Cryptolepis oblongifolia Schltr.	Phipps 492
	Gomphocarpus swynnertonii (S.Moore) Goyder & Nicholas	Goodier & Phipps 137, Wursten 1068
	Mascarenhasia arborescens A.DC.	Mapaura 638
E	*Raphionacme chimanimaniana* Venter & R.L.Verh.	Phipps 839
	Raphionacme splendens Schltr. subsp *splendens*	Wursten (photo)
	Secamone alpini Schult.	Ballings & Wursten 1520
	Sisyranthus imberbis Harv.	Goodier & Phipps 325, Wursten 1059
	Tabernaemontana stapfiana Britten	Goodier & Phipps 347

Aquifoliaceae

	Ilex mitis (L.) Radlk.	Goodier 144, Ballings & Wursten 2258

Araliaceae

	Cussonia spicata Thunb.	Swynnerton 2092, Massunde 259
	Schefflera goetzenii Harms	Massunde 263
	Schefflera umbellifera (Sond.) Baill.	Ballings & Wursten 2211

Asclepiadaceae (see Apocynaceae)

Asteraceae

*	*Acanthospermum australe* (Loefl.) Kuntze	Goodier & Phipps 317
	Adenostemma caffrum DC.	Phipps 427
*	*Ageratum conyzoides* L.	Wursten (photo)
	Anisopappus chinensis Hook.& Arn. subsp. *buchwaldii* (O.Hoffm.) S.Ortiz, Paiva & Rodr.Oubiña var. *dentatus* (DC.) S.Ortiz, Paiva & Rodr.Oubiña	Hadj-Hammou 11
	Anisopappus kirkii (Oliv.) Brenan	Wild 2876
E	*Anisopappus paucidentatus* Wild	Ballings & Wursten 2313
	Aspilia pluriseta Schweinf. subsp. *pluriseta*	Hall 445
E	*Aster chimanimaniensis* Lippert	Phipps 2841
	Aster harveyanus Kuntze subsp. *nyikensis* Lippert	Mutasa 6
	Athrixia fontinalis Wild	Wild 4602
	Berkheya setifera DC.	Phipps 420
	Berkheya zeyheri (Sond.& Harv.) Oliv.& Hiern	Munch 191
*	*Bidens pilosa* L.	Hall 444
	Bidens schimperi Walp.	Hadj-Hammou 12
	Blumea axillaris (Lam.) DC.	Taylor 1745
	Bothriocline inyangana N.E.Br. var. *inyangana*	Hall 352
	Chrysanthemoides monilifera (L.) Norl. subsp. *septentrionalis* Norl.	Goodier 640, Massunde 270
	Cineraria deltoidea Sond.	Ballings & Wursten 2216
	Cineraria pulchra Cron	Ballings & Wursten 2240
*?	*Conyza aegyptiaca* (L.) Aiton	Hall 262
*	*Conyza canadensis* (L.) Cronquist	Phipps 309
	Conyza pinnata (L.f.) Kuntze	Phipps 423
	Conyza welwitschii (S.Moore) Wild	Phipps 365
	Crassocephalum picridifolium S.Moore	Osborne 1181
	Crassocephalum rubens (Jacq.) S.Moore var. *rubens*	Hall 434
	Crassocephalum uvens (Hiern) S.Moore	Phipps 268, Osborne 1182

	Dichrocephala integrifolia (L.f.) Kuntze subsp. *integrifolia*	Goodier & Phipps 293
	Dicoma anomala Sond.	Chase 6903
	Emilia caespitosa Oliv.	Ballings & Wursten 2189
	Emilia discifolia (Oliv.) C.Jeffrey	Munch 124
	Euryops transvaalensis Klatt subsp. *setilobus* (N.E.Br.) B.Nord.	Wild 2972
*	*Galinsoga* cf. *parviflora* Cav.	Timberlake (s.r.)
	Gerbera ambigua (Cass.) Sch.Bip.	Taylor 1774
	Gerbera piloselloides (L.) Cass.	Matimele 2097
	Gerbera viridifolia (DC.) Sch.Bip. subsp. *viridifolia*	Munch 168
	Gnaphalium purpureum L.	Goodier & Phipps 294
NE	*Gutenbergia westii* (Wild) Wild & G.V.Pope	Hadj-Hammou 13
	Haplocarpha scaposa Harv.	Munch 172
	Helichrysum adenocarpum DC. subsp. *adenocarpum*	Weiste in SRGH 9141, Fijamo 52
E	*Helichrysum africanum* (S.Moore) Wild	Ballings & Wursten 2291
	Helichrysum aureum (Houtt.) Merr. var. *monocephalum* (DC.) Hilliard	Wursten 1042
	Helichrysum buchananii Engl.	Phipps 364, Osborne 1174
	Helichrysum cephaloideum DC.	Phipps 393
	Helichrysum forskahlii (J.F.Gmel.) Hilliard & B.L.Burtt	Ballings & Wursten 2295
	Helichrysum goetzeanum O.Hoffm.	West 3617
	Helichrysum kilimanjari Oliv.	Wild 2960
	Helichrysum kraussii Sch.Bip.	Phipps 704
	Helichrysum lepidissimum S.Moore	Munch 74
E	*Helichrysum maestum* Wild	Munch 278
	Helichrysum mimetes S.Moore	Fijamo 57
E	*Helichrysum moorei* Staner	Ballings & Wursten 2224
	Helichrysum nitens Oliv.& Hiern subsp. *nitens*	Ballings & Wursten 2237
	Helichrysum nudifolium (L.) Less. var. *nudifolium*	Phipps 246
	Helichrysum nudifolium (L.) Less. var. *pilosellum* (L.f.) Beentje	Wild 2917
NE	*Helichrysum rhodellum* Wild	Finlay 7
	Helichrysum setosum Harv.	Wild 2942
	Helichrysum sulfureofuscum Baker	Phipps 687
	Helichrysum umbraculigerum Less.	Phipps 400
	Hypericophyllum compositarum Steetz	Munch in SRGH 2109
	Kleinia galpinii Hook.f.	Leach 9059
	Launaea rarifolia (Oliv.& Hiern) Boulos var. *rarifolia*	Wursten 1075
	Lopholaena brickellioides S.Moore	Timberlake 5964
E	*Lopholaena* sp. nov.	Weiste in SRGH 9136
	Nidorella resedifolia DC. subsp. *microcephala* (Steetz) Wild	Phipps 335
	Schistostephium crataegifolium (DC.) Harv.	Goodier & Phipps 46, Timberlake 5993
	Schistostephium oxylobum S.Moore	Phipps 653, Ballings & Wursten 2283
E	*Senecio aetfatensis* B.Nord.	Nordenstam 9292
	Senecio erubescens Aiton var. *erubescens*	Phipps 250a, Osborne 1173
	Senecio gazensis S.Moore	Munch 190
	Senecio inornatus DC.	Phipps 344a
	Senecio latifolius DC.	Phipps 385
	Senecio lydenburgensis Hutch.& Burtt Davy	Hall 280
	Senecio milanjiensis S.Moore	Banze 441
	Senecio oxyriifolius DC.	Swynnerton 1946
	Senecio proprior S.Moore	Wursten 1066
	Senecio tamoides DC.	Wursten (photo)
	Senecio variabilis Sch.Bip.	Wursten 1043
*	*Sonchus oleraceus* (L.) L.	Timberlake (s.r.)
	Spilanthes mauritiana (Pers.) DC.	Hall 449
	Stomatanthes africanus (Oliv.& Hiern) R.M.King & H.Rob.	Goodier & Phipps 6, Osborne 1168
*	*Tagetes minuta* L.	Massunde 272
	Tolpis capensis (L.) Sch.Bip.	Phipps 320

*	*Vernonanthura phosphorica* (Vell.) H.Rob.	Mapaura 901
	Vernonia bainesii Oliv.& Hiern subsp. *bainesii*	Weiste in SRGH 9125
	Vernonia calvoana (Hook.f.) Hook.f. subsp. *meridionalis* (Wild) C.Jeffrey	Munch 126
	Vernonia galpinii Klatt	Swynnerton 1829
	Vernonia gerberiformis Oliv.& Hiern subsp. *gerberiformis* var. *gerberiformis*	Wild 2964
	Vernonia hirsuta (DC.) Walp.	Munch 171, Wursten 1082
E	*Vernonia muelleri* Wild subsp. *muelleri*	Matimele 2051
	Vernonia natalensis Walp.	Goodier & Phipps 7
E	*Vernonia nepetifolia* Wild	Wild 2951, Hadj-Hammou 47
	Vernonia wollastonii S.Moore	Phipps 467a

Balsaminaceae

	Impatiens cecilii N.E.Br. subsp. *cecilii*	Phipps 419, Osborne 1187
E	*Impatiens salpinx* Schulze & Launert	Ballings & Wursten 2282

Begoniaceae

	Begonia sonderiana Irmsch.	Ballings & Wursten 2203

Brassicaceae

	Coronopus integrifolius (DC.) Spreng.	Goodier & Phipps 300

Buddlejaceae (see Scrophulariaceae)

Cactaceae

	Rhipsalis baccifera (J.Mill.) Stearn	Phipps 235, Timberlake 6017

Campanulaceae

	Cyphia alba N.E.Br.	Goodier 497
	Cyphia mazoensis S.Moore	Ballings & Wursten 2241
E	*Lobelia cobaltica* S.Moore	Wursten 1078
	Lobelia erinus L.	Timberlake 5994
	Lobelia goetzei Diels	Munch 195
	Monopsis decipiens (Sond.) Thulin	Taylor 1744
	Wahlenbergia abyssinica (A.Rich.) Thulin	Wursten 1060b
	Wahlenbergia capillacea A.DC. subsp. *tenuior* (Engl.) Thulin	Wild 2190, Matimele 2064
	Wahlenbergia subaphylla (Baker) Thulin subsp. *scoparia* (Wild) Thulin	Ballings & Wursten 2299
	Wahlenbergia undulata (L.f.) A.DC.	Banze 465
	Wahlenbergia virgata Engl.	Goodier 484

Cannabaceae

*	*Cannabis sativa L.*	Mapaura 899

Caryophyllaceae

	Corrigiola drymariodes Baker f.	Wursten 1096
E	*Dianthus chimanimaniensis* S.S.Hooper	Phipps 838
	Drymaria cordata (L.) Roem.& Schult. var. *cordata*	Wursten (photo)
	Polycarpaea corymbosa (L.) Lam.	Swynnerton 1804
	Silene burchellii DC. var. *angustifolia* Sond.	Goodier & Phipps 485, Mapaura 738

Cecropiaceae

	Myrianthus holstii Engl.	Finlay in SRGH 12662

Celastraceae

	Gymnosporia heterophylla (Eckl.& Zeyh.) Loes.	Goodier & Phipps 155
	Maytenus acuminata (L.f.) Loes. var. *acuminata*	Phipps 280, Mapaura 920
	Pterocelastrus echinatus N.E.Br.	Matimele 2058

Chrysobalanaceae		
	Parinari curatellifolia Benth.	Goodier & Phipps (s.r.)
Clusiaceae		
	Garcinia kingaensis Engl.	Wild 3552
Connaraceae		
	Agalaea pentagyna (Lam.) Baill.	Hyde (s.r.)
Cornaceae		
	Curtisia dentata (Burm.f.) C.A.Sm.	Swynnerton 637
Crassulaceae		
	Crassula alba Forssk. var *alba*	McCosh 7
	Crassula alticola R.Fern.	Goodier 210, Hadj-Hammou 31
	Crassula lanceolata (Eckl.& Zeyh.) Walp. subsp. *transvaalensis* (Kuntze) Toelken	Ballings & Wursten 2223
	Crassula nodulosa Schönland	Mapaura 718
	Crassula setulosa Harv. var. *setulosa*	Osborne 1155
	Crassula swaziensis Schönland subsp. *swaziensis* var. *swaziensis*	Mapaura 719
	Crassula vaginata Eckl.& Zeyh.	Goodier 177, Ballings & Wursten 2249
	Kalanchoe lanceolata (Forssk.) Pers.	Phipps (s.r.)
E	*Kalanchoe velutina* Britten subsp. *chimanimaniensis* (R.Fern.) R.Fern.	Ballings & Wursten 2296
Cucurbitaceae		
	Peponium chirindense (Baker f.) Cogn.	Wursten (photo)
	Zehneria minutiflora (Cogn.) C.Jeffrey	Timberlake 5975
Dipsacaceae		
*?	*Scabiosa columbaria* L.	Phipps 380
Droseraceae		
	Drosera burkeana Planch.	Phipps 333
	Drosera dielsiana Exell & J.R.Laundon	Goodier & Phipps 232, Ballings & Wursten 2255
	Drosera madagascariensis DC.	Osborne 1169
Ebenaceae		
	Diospyros whyteana F.White	Goodier & Phipps 165, Matimele 2079
	Euclea divinorum Hiern	Goodier & Phipps 171
Ericaceae		
	Erica hexandra (S.Moore) E.G.H.Oliv.	Wursten 1037
	Erica johnstoniana Britten	Ballings & Wursten 2285
NE	*Erica lanceolifera* S.Moore	Swynnerton 1288
	Erica mannii (Hook.f.) Beentje subsp. *pallidiflora* (Engl.) E.G.H.Oliv.	Munch 202
NE	*Erica pleiotricha* S.Moore var. *blaerioides* (Wild) R.Ross	Ballings & Wursten 2264
NE	*Erica pleiotricha* S.Moore var. *pleiotricha*	Wild 3597
	Erica simii (S.Moore) E.G.H.Oliv.	Goodier 165, Hadj-Hammou 20
	Erica silvatica (Engl.) Beentje	Goodier 211, Wursten 265
	Erica whyteana Britten	Swynnerton 1063
E	*Erica wildii* Brenan	Wild 3643
Erythroxylaceae		
	Erythroxylum emarginatum Thonn.	Swynnerton 1364

Escalloniaceae (see Iteaceae)

Euphorbiaceae (see also Peraceae & Phyllanthaceae)

	Acalypha caperonioides Baill.	Goodier & Phipps 292
NE	*Euphorbia crebrifolia* S.Carter	Mapaura 720
	Euphorbia cyparissioides Pax	Goodier & Phipps 324
	Euphorbia depauperata A.Rich. var. *depauperata*	Munch 111
	Euphorbia griseola Pax subsp. *griseola*	Phipps 841
E	*Euphorbia rugosiflora* L.C.Leach	Wild 3545
	Euphorbia citrina S.Carter	Watmaugh 50
	Macaranga capensis (Baill.) Sim	Phipps s.n.
	Macaranga mellifera Prain	Goodier & Phipps 152
	Suregada procera (Prain) Croizat	Swynnerton 1115

Flacourtiaceae (see Achariaceae, Aphloiaceae or Salicaceae)

Gentianaceae

	Anthocleista grandiflora Gilg	Timberlake (s.r.)
	Canscora alata (Roth) Wall.	Hadj-Hammou 1
	Chironia gratissima S.Moore	Taylor 1749
	Exacum oldenlandioides (S.Moore) Klack.	Ballings & Wursten 2186
	Sebaea grandis (E.Mey.) Steud.	Goodier 154, Ballings & Wursten 2188
	Sebaea leiostyla Gilg	Hadj-Hammou 42
	Sebaea longicaulis Schinz	Munch 293
	Swertia welwitschii Engl.	Hall 428

Geraniaceae

	Geranium incanum Burm.f. subsp. *nyassense* (R.Knuth) J.R.Laundon	Phipps 371
	Geranium ocellatum Cambess.	Goodier 994
	Pelargonium graveolens L'Hér.	Thompson 8
	Pelargonium luridum (Andrews) Sweet	Goodier 217, Timberlake 6020

Gesneriaceae

	Streptocarpus eylesii S.Moore subsp. *eylesii*	Phipps 465
NE	*Streptocarpus grandis* N.E.Br. subsp. *septentrionalis* Hilliard & B.L.Burtt	Phipps 493, Ballings & Wursten 2198
	Streptocarpus hirticapsa B.L.Burtt	Ballings & Wursten 2234
	Streptocarpus michelmorei B.L.Burtt	Munch 371
E	*Streptocarpus montis-bingae* Hilliard & B.L.Burtt	Pereira, Sarmento & Marques 1317
E	*Streptocarpus* sp. nov. near *S. grandis* N.E.Br.	Ballings & Wursten 2246

Gerrardinaceae

	Gerrardina eylesiana Milne-Redh.	Ballings & Wursten 2265

Haloragaceae

	Laurembergia repens P.J.Bergius subsp. *brachypoda* (Hiern) Oberm.	Goodier & Phipps 23

Hypericaceae

	Harungana madagascariensis Poir.	Goodier 135
	Hypericum aethiopicum Thunb. subsp. *sonderi* (Bredell) N. Robson	Munch 193
	Hypericum lalandii Choisy	Phipps 273
	Hypericum roeperianum A.Rich.	Goodier & Phipps 349

Icacinaceae

	Apodytes dimidiata Arn. var. *dimidiata*	Hall 283
	Cassinopsis tinifolia Harv.	Mapaura 712

Iteaceae

	Choristylis rhamnoides Harv.	Goodier & Phipps 172

Lamiaceae

	Aeollanthus buchnerianus Briq.	Phipps 436, Hadj-Hammou 6
	Aeollanthus rehmannii Gürke	Wursten (photo)
E	*Aeollanthus viscosus Ryding*	Goodier 194, Ballings & Wursten 2204
	Clinopodium myrianthum (Baker) Ryding	Philcox et al. 9023
	Haumaniastrum dissitifolium (Baker) A.J.Paton	Phipps 337, Mapaura 708
	Leonotis ocymifolia (Burm.f.) Iwarsson var. *ocymifolia*	Noel 2082
	Leonotis ocymifolia (Burm.f.) Iwarsson var. *raineriana* (Vis.) Iwarsson	Mapaura 686
	Micromeria imbricata (Forssk.) C.Chr. var. *imbricata*	Hall 431a
	Platostoma rotundifolium (Briq.) A.J.Paton	Phipps 421
	Plectranthus autranii (Briq.) Erhardt, Götz & Seybold	Hadj-Hammou 45
	Plectranthus bojeri (Benth.) Hedge	Wild 2880
E	*Plectranthus caudatus* S.Moore	Swynnerton 2010, Ballings & Wursten 2227
	Plectranthus chimanimaniensis S.Moore	Swynnerton 2019, Ballings & Wursten 2229
	Plectranthus hadiensis (Forssk.) Spreng.	Phipps 498
	Plectranthus hereroensis Engl.	Weiste in SRGH 9102
	Plectranthus kapatensis R.E.Fr.	Hadj-Hammou 10
	Plectranthus lanuginosus (Hochst.) Agnew	Crouch (photo)
	Plectranthus laxiflorus Benth.	Noel 2074
	Plectranthus sessilifolius A.J.Paton	Wild 2195, Ballings & Wursten 2273
	Plectranthus swynnertonii S.Moore	Phipps 461, Osborne 1185
	Plectranthus thyrsoideus (Baker) B.Mathew	Ballings & Wursten 2231
	Rotheca myricoides (Hochst.) D.A.Steane & Mabb.	Hall 297
	Stachys aethiopica L.	Ballings & Wursten 2239
	Stachys didymantha Brenan	Banze 433
	Stachys natalensis Hochst. var. *natalensis*	Phipps 285, Osborne 1157
E	*Syncolostemon flabellifolius* (S.Moore) A.J.Paton	Mapaura 684
E	*Syncolostemon oritrephes* (Wild) D.F.Otieno	Taylor 1816
NE	*Syncolostemon ornatus* (S.Moore) D.F.Otieno	Wild 3553
E	*Syncolostemon* sp. nov. near *S. teucrifolius* (Hochst.) D.F.Otieno	Mapaura 727
	Tetradenia riparia sensu lato (Hochst.) Codd	McCosh 14

Lauraceae

	Cassytha filiformis L.	Timberlake 6025

Leguminosae: Caesalpinioideae

	Brachystegia spiciformis Benth.	Goodier & Phipps 314, Timberlake 5965
	Brachystegia tamarindoides Benth. subsp. *microphylla* (Harms) Chikuni	Timberlake 6009
	Brachystegia spiciformis Benth. X *B. microphylla*	Timberlake 5992
	Chamaecrista kirkii (Oliv.) Standl. var. kirkii	Hall 263
	Chamaecrista mimosoides (L.) Greene	Taylor 1814
	Chamaecrista polytricha (Brenan) Lock var. *polytricha*	Mapaura 728
	Chamaecrista wittei (Ghesq.) Lock	Mapaura 645

Leguminosae: Mimosoideae

	Acacia abyssinica Benth. (= *Vachellia abyssinica* (Benth.) Kyal.& Boatwr.)	Wursten (photo)
	Acacia sieberiana DC. var. *woodii* (Burtt Davy) Keay & Brenan	Hyde (s.r.)
	Albizia adiantifolia (Schumach.) W.Wight	Hyde (s.r.)

Leguminosae: Papilionoideae

E	*Aeschynomene aphylla* Wild	Ballings & Wursten 2278
E	*Aeschynomene chimanimaniensis* Verdc.	Grosvenor 396, Mapaura 909
	Aeschynomene gazensis Baker f.	Munch 121
E	*Aeschynomene grandistipulata* Harms	Mapaura 656
	Aeschynomene inyangensis Wild	Wild 4567

	Aeschynomene nodulosa (Baker) Baker f. var. *nodulosa*	Wild 2925
	Argyrolobium rupestre (E.Mey.) Walp. subsp. *rupestre*	Goodier & Phipps 334
	Argyrolobium tomentosum (Andrews) Druce	Phipps 701
	Calpurnia aurea (Aiton) Benth. subsp. *aurea*	Goodier & Phipps 150
	Canavalia africana Dunn	Ballings & Wursten 1515
	Craibia brevicaudata (Vatke) Dunn subsp. *baptistarum* (Büttner) J.B.Gillett	Chase 2957
	Crotalaria alexandri Baker f.	Mapaura 634
	Crotalaria anthyllopsis Baker	Mapaura 637
	Crotalaria caudata Baker	Carter & Coates Palgrave 2168, Matimele 2089
	Crotalaria cephalotes A.Rich.	Mapaura 635
	Crotalaria collina Polhill	Phipps 329, Timberlake 6157
	Crotalaria gazensis Baker f.	Matimele 2090
	Crotalaria insignis Polhill	Corby 1367
	Crotalaria laburnifolia L. subsp. *laburnifolia*	Wild 2931
E	*Crotalaria phylicoides* Wild	Mapaura 687
	Dalbergia nitidula Baker	Hodgson 43/57
	Desmodium setigerum (E.Mey.) Harv.	Hall 447
	Dumasia villosa DC. var. *villosa*	Hall 366
	Eriosema montanum Baker f.	Goodier & Phipps 356
	Eriosema shirense Baker f. var. *shirense*	Goodier & Phipps 141
	Indigofera cecilii N.E.Br.	Mapaura 725
	Indigofera chimanimaniensis Schrire	Mavi 668
	Indigofera lyallii Baker subsp. *lyallii*	Ballings & Wursten 2210
	Indigofera oxalidea Baker	Phipps 255
	Indigofera paniculata Pers. subsp. *gazensis* (Baker f.) J.B.Gillett	Wursten (photo)
E	*Indigofera* sp. nov. near *I. chimanimaniensis*	Hadj-Hammou 55, Massunde 258
	Kotschya thymodora (Baker f.) Wild subsp. *thymodora*	Wild 2895
	Kotschya sp. no. A sensu Verdcourt	Wild 1937
	Lotus discolor E.Mey. subsp. *discolor*	Noel 2070
	Lotus wildii J.B.Gillett	Wild 2975
	Otholobium foliosum (Oliv.) C.H.Stirt. subsp. *gazense* (Baker f.) Verdc.	Munch 125
	Pearsonia aristata (Schinz) Dummer	Munch in SRGH 21015
	Pearsonia grandifolia (Bolus) Polhill subsp. *latibracteolata* (Dummer) Polhill	Goodier 481
NE	*Pearsonia mesopontica* Polhill	Matimele 2085
	Pseudarthria hookeri Wight & Arn. var. *hookeri*	Phipps 435
	Pterocarpus angolensis DC.	Ballings & Wursten (s.r.)
NE	*Rhynchosia chimanimaniensis* Verdc.	Munch 85
	Rhynchosia clivorum S.Moore subsp. *pycnantha* (Harms) Verdc.	Swynnerton 1461
	Rhynchosia monophylla Schltr.	Goodier 639, Mapaura 710
E	*Rhynchosia stipata* Wild	Mapaura 685
	Sphenostylis erecta (Baker f.) Baker subsp. *obtusifolia* (Harms) Potter & Doyle	Phipps 456
	Tephrosia aequilata Baker	Wild 4589
NE	*Tephrosia chimanimaniana* Brummitt	Noel 2023, Timberlake 6159
NE	*Tephrosia longipes* Meisn. var. *drummondii* (Brummitt) Brummitt	Mutasa 10
	Tephrosia meisneri Hutch. & Burtt Davy	Phipps 454
	Teramnus uncinatus (L.) Sw. subsp. *ringoetii* (De Wild.) Verdc.	Hall 483
	Vigna schlechteri Harms	Goodier 480
	Vigna gazensis Baker f.	Mapaura 676
	Vigna vexillata (L.) A.Rich. var. *angustifolia* (Schumach.) Baker	Thompson 34

Lentibulariaceae

Genlisea hispidula Stapf	Phipps 403, Osborne 1189
Utricularia appendiculata E.A.Bruce	Phipps 412
Utricularia livida E.Mey.	Timberlake 5984
Utricularia pentadactyla P.Taylor	Mapaura 660
Utricularia subulata L.	Timberlake 6160

Linderniaceae

Craterostigma lanceolatum (Engl.) Skan	Goodier & Phipps 43
Stemodiopsis buchananii Skan var. *pubescens* Philcox	Mapaura 651

Lobeliaceae (see Campanulaceae)

Loganiaceae

Strychnos spinosa Lam.	Goodier & Phipps 303

Loranthaceae

Helixanthera woodii (Schltr.& K.Krause) Danser	Goodier & Phipps 179, Ballings & Wursten 2220

Malvaceae

Dombeya burgessiae Harv.	Phipps (s.r.)
Hibiscus burtt-davyi Dunkley	Mapaura 667
Hibiscus surattensis L.	Goodier 1005
Pavonia columella Cav.	Munch 95
Sparrmannia ricinocarpa (Eckl.& Zeyh.) Kuntze	Goodier 138
Triumfetta pilosa Roth var. *effusa* (Harv.) Wild	Phipps 399
Waltheria indica L.	Swynnerton 2057

Melastomataceae

Antherotoma naudinii Hook.f.	Phipps 689, Ballings & Wursten 2271
Antherotoma senegambiensis (Guill.& Perr.) Jacq.-Fél.	Ballings & Wursten 2269
Heterotis canescens (R.A.Graham) Jacq.-Fél.	Goodier 215
Dissotis princeps (Kunth) Triana var. *princeps*	Goodier & Phipps 51, Ballings & Wursten 2256
E *Dissotis pulchra* A.Fern.& R.Fern.	Ballings & Wursten 2277
E *Dissotis swynnertonii* (Baker f.) A.Fern.& R.Fern.	Ballings & Wursten 2235

Meliaceae

Ekebergia benguelensis C.DC.	Goodier & Phipps 319
Ekebergia capensis Sparrm.	Munch 347

Melianthaceae

Bersama abyssinica Fresen.	Phipps (s.r.)
Bersama swynnertonii Baker f.	Ballings & Wursten 2247

Menyanthaceae

Nymphoides thunbergiana (Griseb.) Kuntze	Goodier & Phipps 288

Molluginaceae

Corrigiola drymarioides Baker f.	Wursten 1096
Psammotropha myriantha Sond.	Phipps 406

Monimiaceae

Xymalos monospora (Harv.) Baill.	Swynnerton 1112

Moraceae

Ficus craterostoma Mildbr.& Burret	Wursten (photo)
Ficus natalensis Hochst.	Timberlake 6195

Myricaceae		
E	*Morella chimanimaniana* Verdc.& Polhill	Timberlake 6173
	Morella pilulifera (Rendle) Killick	Wild 2862, Shah 9
Myrothamnaceae		
	Myrothamnus flabellifolius Welw.	Mapaura 649
Myrsinaceae		
	Maesa lanceolata Forssk.	Wild 2877, Massunde 252
	Myrsine africana L.	Swynnerton ?633
	Rapanea melanophloeos (L.) Mez	Goodier & Phipps 210
Myrtaceae		
*	*Eucalyptus* cf. *grandis* W.Hill	Timberlake s.n.
	Eugenia malangensis (O.Hoffm.) Nied.	Goodier & Phipps 10, Wursten 1086
	Eugenia natalitia Sond.	Goodier & Phipps 177, Wursten 1047
	Syzygium cordatum C.Krauss	Goodier & Phipps 266, Massunde 260
	Syzygium guineense (Willd.) DC. subsp. *afromontanum* F.White	Goodier & Phipps 304, Hadj-Hammou 9
	Syzygium masukuense (Baker) R.E.Fr. subsp. *pachyphyllum* F.White	Matimele 2069
Ochnaceae		
	Ochna confusa Burtt Davy & Greenway	Wild 3547
	Ochna holstii Engl.	Goodier & Phipps 174
Oleaceae		
	Jasminum brachyscyphum Baker	Goodier & Phipps 302
E	*Olea chimanimani* Kupicha	Matimele 2068
Onagraceae		
	Epilobium capense Hochst.	Phipps 376a
Orobanchaceae		
	Alectra picta (Hiern) Hemsl.	Phipps 684, Matimele 2073
	Alectra sessiliflora Kuntze	Ballings & Wursten 2238
NE	*Buchnera chimanimaniensis* Philcox	Hadj-Hammou 15
	Buchnera henriquesii Engl.	Taylor 1777
	Buchnera lastii Engl. subsp. *lastii*	Goodier & Phipps 128
	Buchnera multicaulis Engl.	Goodier 512
E	*Buchnera subglabra* Philcox	Ballings & Wursten 2281
	Buchnera wildii Philcox	Ballings & Wursten 2317
	Cycnium adonense Benth. subsp. *adonense*	Munch 196
	Gerardiina angolensis Engl.	Ballings & Wursten 2294
	Graderia scabra (L.f.) Benth.	Goodier & Phipps 282, Mapaura 726
	Sopubia mannii Skan var. *tenuifolia* (Engl.& Gilg.) Hepper	Hadj-Hammou 48
	Sopubia simplex (Hochst.) Hochst.	Goodier 479
	Striga asiatica (L.) Kuntze	Weiste in SRGH 9134
	Striga bilabiata (Thunb.) Kuntze	Phipps 342
	Striga elegans Benth.	Weiste in SRGH 9150
Oxalidaceae		
	Oxalis semiloba Sond. subsp. *semiloba*	Phipps 302, Hadj-Hammou 24
Passifloraceae		
	Basananthe pseudostipulata W.J.De Wilde	Mapaura 666
Penaeaceae		
E	*Olinia vanguerioides* Baker f. subsp. nov.	Matimele 2094

Peraceae

	Clutia abyssinica Jaub.& Spach. var. *abyssinica*	Wild 2976
	Clutia monticola S.Moore var. *monticola*	Wild 2965
	Clutia paxii Pax	Goodier 2063
E	*Clutia punctata* Wild	Wild 4582
E	*Clutia sessilifolia* Radcl.-Sm.	Goodier 180, Mapaura 679
	Clutia swynnertonii S.Moore	Hall 299

Periplocaceae (see Apocynaceae)

Phyllanthaceae

	Antidesma vogelianum Müll.Arg.	Mapaura 644
	Bridelia micrantha (Hochst.) Baill.	Goodier 611a
E	*Phyllanthus bernierianus* Müll.Arg. var. *glaber* Radcl.-Sm.	Ballings & Wursten 2309
	Phyllanthus graminicola S.Moore	Wild 2959
	Phyllanthus hutchinsonianus S.Moore	Hadj-Hammou 39
	Phyllanthus manicaensis Radcl.-Sm.	Wild 2970
	Phyllanthus myrtaceus Sond.	Wursten 1035
	Phyllanthus nummulariifolius Poir. var. *nummulariifolius*	Phipps 463
	Uapaca kirkiana Müll.Arg. var. *kirkiana*	Hall 516
	Uapaca sansibarica Pax	Timberlake 5987

Phytolaccaceae

*	*Phytolacca octandra* L.	Wursten (photo), Massunde 273

Piperaceae

	Peperomia tetraphylla (G.Forst.) Hook.& Arn.	Hadj-Hammou 8
	Piper capense L.f. var. *capense*	Phipps (s.r.)

Pittosporaceae

	Pittosporum viridiflorum Sims	Matimele 2093

Polygalaceae

	Muraltia flanaganii Bolus	Finlay in SRGH 12652
	Polygala gazensis Baker f.	Goodier & Phipps 36, Mapaura 713
	Polygala hottentotta C.Presl	Goodier 499
	Polygala latipetala N.E.Br.	Johnson 212
	Polygala ohlendorfiana Eckl.& Zeyh.	Goodier 488
	Polygala petitiana A.Rich.	Hadj-Hammou 5
	Polygala producta N.E.Br.	Mapaura 647
	Polygala sphenoptera Fresen.	Phipps 286a
	Polygala spicata Chodat	Phipps 239, Wursten 1056
	Polygala virgata Thunb. var. *decora* (Sond.) Harv.	Swynnerton 2042
	Polygala wilmsii Chodat	Wursten 1032
	Polygala zambesiaca Paiva	Osborne 1193

Polygonaceae

	Persicaria strigosa (R.Br.) H.Gross	Phipps 343

Primulaceae

	Ardisiandra wettsteinii R.Wagner	Wild 3627

Proteaceae

	Faurea rochetiana (A.Rich.) Pic.Serm.	Mapaura 903
	Faurea rubriflora Marner	Swynnerton ?639
	Faurea saligna Harv.	Swynnerton ?1796
	Leucospermum saxosum S.Moore	Mapaura 659
	Protea caffra Meisn. subsp. *gazensis* (Beard) Chisumpa & Brummitt	Goodier & Phipps 8a, Mapaura 900
E	*Protea enervis* Wild	Chase 6902
	Protea petiolaris (Hiern) Baker & C.H.Wright subsp. *elegans* Chisumpa & Brummitt	Goodier & Phipps 56

Protea welwitschii Engl.	Matimele 2086
Protea wentzeliana Engl.	Ballings & Wursten 2259
Putranjivaceae	
Drypetes reticulata Pax	Massunde 267
Ranunculaceae	
Anemone transvaalensis (Szyszyl.) Burtt Davy	Ballings & Wursten 2284
Clematis villosa DC. subsp. *kirkii* (Oliv.) Brummitt	Phipps 433
*? *Ranunculus multifidus* Forssk.	Phipps 425
Rhamnaceae	
Phylica ericoides L.	Wild 3603
Phylica paniculata Willd.	Swynnerton 632a, Massunde 247
Rhamnus prinoides L'Hér.	Hall 294
Rhizophoraceae	
Cassipourea malosana (Baker) Alston	Goodier & Phipps 153, Timberlake 6163
Rosaceae	
Alchemilla kiwuensis Engl.	Goodier & Phipps 279
Cliffortia nitidula (Engl.) R.E.& T.C.E.Fr.	Munch 207
Rubus pinnatus Willd.	Goodier & Phipps 358
Rubus rigidus Sm.	Timberlake 6027
Rubiaceae	
Aidia micrantha (K.Schum.) F.White var. *msonju* (K.Krause) Petit	Goodier 998, Mapaura 711
Anthospermum ammannioides S.Moore	Ballings & Wursten 2212
Anthospermum herbaceum L.f.	Hall 285
Anthospermum ternatum Hiern subsp. *randii* (S.Moore) Puff	Phipps 409
Anthospermum vallicola S.Moore	Ballings & Wursten 2243
Anthospermum whyteanum Britten	Goodier 142, Ballings & Wursten 2268
Canthium inerme (L.f.) Kuntze	Phipps 395, Wursten 1085
Canthium oligocarpum Hiern subsp. *angustifolium* Bridson	Goodier & Phipps 359, Ballings & Wursten 2320
Cephalanthus natalensis Oliv.	Timberlake 6042
Coptosperma neurophyllum (S.Moore) Degreef	Matimele 2050
E *Empogona* sp. nov. near *E. congesta*	Wursten 1070
Fadogia homblei De Wild.	Goodier & Phipps 186, Wursten 1041
Galium bussei K.Schum.& K.Krause var. *glabrum* Brenan	Phipps 432
Galopina circaeoides Thunb.	Ballings & Wursten 2215
Hymenodictyon floribundum (Hochst.& Steud.) B.L.Rob.	Goodier & Phipps 181, Osborne 1176
Keetia gueinzii (Sond.) Bridson	Wursten 1087
Keetia venosa (Oliv.) Bridson	Ballings & Wursten 2208
Kohautia amatymbica Eckl.& Zeyh.	Goodier & Phipps 183, Wursten 1060c
Lasianthus kilimandscharicus K.Schum. subsp. *kilimandscharicus*	Wursten 1046
Mitrasacmopsis quadrivalvis Jovet	Ballings & Wursten 2218
Mussaenda arcuata Poir.	Phipps (s.r.)
Oldenlandia angolensis K.Schum. var. *angolensis*	Phipps 253
E *Oldenlandia cana* Bremek.	Goodier 901, Hadj-Hammou 63
Oldenlandia herbacea (L.) Roxb. var. *herbacea*	Phipps 489
Oldenlandia rupicola (Sond.) Kuntze var. *rupicola*	Ballings & Wursten 2245
Oldenlandia tenella (Hochst.) Kuntze	Ballings & Wursten 2314
Otiophora inyangana N.E.Br. subsp. *inyangana*	Goodier 216, Hadj-Hammou 38
E *Otiophora inyangana* N.E.Br. subsp. *parvifolia* (Verdc.) Puff	Phipps 669, Ballings & Wursten 2225
Otiophora lanceolata Verdc.	Wursten 1031
Otiophora scabra Zucc. subsp. *scabra*	Phipps 495, Ballings & Wursten 2217

	Otomeria elatior (DC.) Verdc.	Phipps 250
	Oxyanthus speciosus DC. subsp. *stenocarpus* (K.Schum.) Bridson	Goodier & Phipps 148
	Pauridiantha symplocoides (S.Moore) Bremek.	Wursten 1090
	Pachystigma pygmaeum (Schltr.) Robyns	Goodier 486
	Pavetta comostyla S.Moore subsp. *comostyla* var. *comostyla*	Goodier & Phipps 144
	Pavetta radicans Hiern	Ballings & Wursten 1509
	Pavetta umtalensis Bremek.	Goodier & Phipps 328, Ballings & Wursten 2302
	Pentas purpurea Oliv. subsp. *purpurea*	Phipps 259
	Pentas zanzibarica (Klotzsch) Vatke subsp. *zanzibarica*	Wursten 1069
	Pentanisia schweinfurthii Hiern	Phipps 254, Wursten 1055
	Pentanisia sykesii Hutch. subsp. *otomerioides* Verdc.	Phipps 343a
	Polysphaeria lanceolata Hiern var. *lanceolata*	Mapaura & Wursten (photo)
	Psychotria zombamontana (Kuntze) E.M.A.Petit	Wursten 1049
	Psychotria mahonii C.H.Wright	Goodier 150
	Psydrax kraussioides (Hiern) Bridson	Hadj-Hammou 45
	Richardia scabra L.	Wursten (photo)
	Rubia cordifolia L. subsp. *conotricha* (Gand.) Verdc.	Hall 300
	Rutidea orientalis Bridson	Wursten 1048
E	*Rytigynia* sp. D sensu Bridson	Goodier & Phipps 149
	Rytigynia umbellulata (Hiern) Robyns	Wursten 1030
NE	*Sericanthe* sp. B (Chimanimani taxon) sensu Bridson	Ballings & Wursten 2303
	Spermacoce natalensis Hochst.	Phipps 474
	Spermacoce subvulgata (K.Schum.) J.G.Garcia	Ballings & Wursten 2187
	Tricalysia coriacea (Benth.) Hiern subsp. *angustifolia* (J.G.Garcia) Robbr.	Wursten 1033
	Tricalysia pallens Hiern	Wild 3525
	Vangueria apiculata K.Schum.	Hall 4, Massunde 268

Rutaceae

	Toddalia asiatica (L.) Lam.	Goodier & Phipps 159
	Teclea nobilis Delile	Swynnerton 1322

Salicaceae

	Dovyalis lucida Sim	Wild 3634

Santalaceae

	Osyridicarpos schimperianus A.DC.	Hadj-Hammou 62
E	*Thesium bundiense* Hilliard	Goodier & Phipps 124
E	*Thesium chimanimaniense* Brenan	Munch 71, Osborne 1198
E	*Thesium dolichomeres* Brenan	Wursten 1039
	Thesium nigricans Rendle	Goodier 159, Mapaura 664
E	*Thesium pygmaeum* Hilliard	Phipps 340, Ballings & Wursten 2293
	Thesium whyteanum Rendle	Ballings & Wursten 2257

Sapindaceae

	Allophylus chaunostachys Gilg	Noel 2047
	Dodonaea viscosa Jacq. subsp. *angustifolia* (L.f.) J.G.West	Noel 1980
	Zanha golungensis Hiern	Goodier & Phipps 156

Sapotaceae

	Englerophytum magalismontanum (Sond.) T.D.Penn.	Phipps s.n.

Scrophulariaceae (see also Linderniaceae, Orobanchaceae & Stilbaceae)

	Buddleja salviifolia (L.) Lam.	Goodier & Phipps (s.r.)
	Diclis tenella Hemsl.	Goodier 993, Hadj-Hammou 21
	Freylinia tropica S.Moore	Taylor 1769
	Hebenstretia comosa Hochst.	Wild 2969

	Jamesbrittenia carvalhoi (Engl.) Hilliard	Wild 3628
E	*Selago anatrichota* Hilliard	Phipps 387, Matimele 2065
	Selago goetzei Rolfe subsp. *ambigua* Hilliard	Wild 2859, Fijamo 38
	Selago anatrichota × *S. goetzei*	Goodier & Phipps 26, Hadj-Hammou 61
	Teedia lucida (Sol.) Rudolphi	Timberlake 5981
	Zaluzianskya tropicalis Hilliard	Weiste in SRGH 9148, Banze 434

Selaginaceae (see Scrophulariaceae)

Solanaceae

*	*Nicandra physalodes* (L.) Gaertn.	Hall 443
*	*Physalis peruviana* L.	Goodier & Phipps 320
	Solanum anguivi Lam.	Goodier & Phipps 161
*	*Solanum lycopersicum* L.	Timberlake (s.r.)
	Solanum retroflexum Dunal	Mapaura 680

Sterculiaceae (see Malvaceae)

Stilbaceae

	Halleria lucida L.	Goodier & Phipps 173

Thymelaeaceae

	Dais cotinifolia L.	Goodier & Phipps 158
	Gnidia fastigiata Rendle	Wild 3632
	Gnidia kraussiana Meisn. var. *kraussiana*	Phipps 424
	Gnidia microcephala Meisn.	Munch 183
	Passerina montana Thoday	Goldsmith 15/73
	Peddiea africana Harv.	Goodier & Phipps 168, Ballings & Wursten 2214
E	*Struthiola montana* B.Peterson	Goodier & Phipps 269, Wursten 1036
	Struthiola rhodesiana B.Peterson	Munch 296, Banze 426

Tiliaceae (see Malvaceae)

Valerianaceae

	Valeriana capensis Thunb. var. *capensis*	Phipps 426

Verbenaceae

	Lantana trifolia L.	Phipps 377

Vitaceae

	Cyphostemma buchananii (Planch.) Wild & R.B.Drumm.	Hall 314
	Cyphostemma montanum Wild & R.B.Drumm.	Mapaura 677
	Rhoicissus rhomboidea (Harv.) Planch.	Swynnerton 1381
	Rhoicissus tridentata (L.f.) Wild & R.B.Drumm.	Hall 289, Mapaura 914