A checklist of the plants of the Karkloof Forest, Natal midlands

J.O. WIRMINGHAUS*

Keywords: checklist, Karkloof, forest, Natal

ABSTRACT

A checklist of the plants of the Karkloof Forest is presented. Of the 400 taxa recorded, seven are bryophytes, 69 are pteridophytes, four are gymnosperms and 320 are angiosperms. At least 17 of the plants recorded are localized or uncommon in Natal. Two of these are endemic to the area.

UITREKSEL

'n Kontrolelys van plante van die Karkloofwoud word verskaf. Van die 400 taksons wat aangeteken is, is sewe broodte, 69 pteridoenie, vier gimnosperme en 320 angiosperme. Minstens 17 van die aangetekende plante is tot sekere lokaliteitbeperk of is seldsaam in Natal. Twee hiervan is endemies in die gebied.

INTRODUCTION

Rycroft (1941) carried out the first detailed study of the Karkloof Forest's vegetation and provides a preliminary checklist of the plants. Taylor (1961) gives a brief account of the plant communities of the Karkloof Forest although his paper is directed at its conservation. More recently Moll (1976) included the Karkloof Forest in his vegetation survey of the Three Rivers region, Natal. Other than the above, little has been published on the area, despite the fact that it is one of the largest remaining patches of mistbelt forest in Natal.

The absence in regional herbaria of records of species commonly seen in the area highlighted the need for a comprehensive checklist of the forest plants.

STUDY AREA AND METHODS

The Karkloof Forest lies in the Natal midlands and covers an estimated area of 6 000 ha (Cooper 1985). It extends in length for 40 km, from about 22 km north of Howick (29°17'S. 30°09'E) to 13 km northeast of New Hanover (29°14'S. 30°28'E), and comprises a number of forest patches restricted mainly to the steep eastward side of the Karkloof Range. The forest ranges in altitude from 800 m near the Karkloof and Umgeni River confluence up to 1 700 m on the upper slopes of Mt Gilboa.

Most of the forests in the midlands region, including the Karkloof, fall under Acocks's (1988) Veld Type 5 ('Ngongoni Veld). In addition to mist, the forest receives a mean annual rainfall of about 1 600 mm (1 300–2 200 mm) (Rycroft 1944; Oatley 1978; pers. obs.) falling mostly in summer. Predominant winds in the summer months are southeasterly but in winter, as along most of the escarpment, northwesterly berg winds predominate. Rycroft (1944) attributes the stunted growth of forest trees in the northwestern Karkloof and the deaths of numerous young forest trees each year to these latter hot, dry winds.

Rycroft (1941) recorded 246 species in his preliminary checklist of the forest plants but did not mention any voucher specimens. He lists 45 species of pteridophytes, four gymnosperms, 25 monocotyledons and 172 dicotyledons.

Little is published of temperatures within the forest but Oatley (1978) recorded some data over a two year period. From his data the mean annual maximum temperature is 18.0°C (range 15.2–20.9°C) measured in February, and the mean minimum is 8.4°C (range 4.6–12.2°C) in July.

Most of the collecting for this survey was done near the Farms Mbona and Chard which form part of the Blinkwater forest patch. Other sites in the Karkloof were also visited during the survey for the purpose of completeness. All specimens are lodged at NU. In addition to my specimens, any records of plants from other collectors, which were found in NU, are included. Of these, E.J. Moll has possibly contributed the most. Much of his collecting was carried out in the forest near the Farms The Start, Benvie and Ehlatini. Even though every effort was made to make the checklist as comprehensive as possible, there will be a number of species that have been overlooked. Bryophytes were only occasionally collected during this survey, and field observations indicate that many more taxa occur in the forest than this checklist suggests.

RESULTS AND DISCUSSION

Rycroft (1941) recorded 246 species in his preliminary checklist of the forest plants but did not mention any voucher specimens. He lists 45 species of pteridophytes, four gymnosperms, 25 monocotyledons and 172 dicotyledons.

Of the 400 taxa (266 genera, 115 families) recorded in the Karkloof Forest during this survey, seven (1.8%) are bryophytes, 69 (17.3%) are pteridophytes, four (1.0%) are gymnosperms and 320 (80.0%) are angiosperms. Of the angiosperms, 67 (46.8%) are monocotyledons and 253 (63.3%) are dicotyledons. Plant families containing more than one percent of the total number of species are listed in order of numerical importance in Table 1. The genera of plants with four or more (> 1%) species are Asplenium (11 spp.), Senecio, Solanum (7 spp.), Blechnum, Cheilanthes, Plectranthus, Streptocarpus (5 spp.), Canthium, Lycopodium, Maytenus, Protasparagus and

* Dept. of Zoology & Entomology, University of Natal, P.O. Box 375, Pietermaritzburg 3200.

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Dumortiera hirsuta
Riccia fluitans
RICCIACEAE
BRYOPHYTA

forest margins; 2, forest gaps or small clearings; 3, forest floor; 4, forest understorey; 5, forest canopy; 6, next to streams in forest.

for each species recorded. These are derived either from herbarium specimen labels or from personal field observations and are as follows: 1.

is given. Introduced and alien species are indicated by an asterisk. In order to make the list more meaningful, habitat annotations have been added.

All voucher specimens cited are specimens collected by J.O. Wirminghaus and housed in NU unless otherwise stated or unless a literature citation

The checklist is arranged according to Gibbs Russell et al. (1985) and Gibbs Russell et al. (1987), and one orchid according to Linder (1989).

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Pteris (4 spp.). No comparative data are available for other mistbelt forests in Natal, but Acocks (1988) also notes the dominance of ferns and other genera such as Plectranthus in the forests of this region.

Although a crude attempt was made to include species habitat preferences on the checklist, no indication of status is shown. Some quantitative data are available but will appear elsewhere (Wirminghaus & Perrin in prep.). At least 17 of the species recorded from the forest were found to be uncommon or to have localized distributions within Natal. The ferns Arachniodes foliosa, Asplenium dregeanum, Asplenium preussii, Blechnum capense, Elaphoglossum aubertii, Loxogramme lanceolata and Symphyogyna podophylla are rare in Natal (Jacobsen 1983) and are known from only one or two sites in the forest. Other plants such as Heliandria zuurbergensis, Lobelia malovenensis, Microstegium nudum, Mikanionipsis cissampelina, Plectranthus elegantulus, Polygonum nepalense and the trees Andraeanum ovalis and Soregada procera, are only known from a few localities within Natal. The herbs Geranium natalense and Plectranthus rhomanii are the only plants known to be endemic to the Karkloof Forest (Codd 1985; Hilliard & Burt 1985).

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BRYOPHYTA:

RICCIACEAE:
Riccia fluitans L., 741, 6

MARCHANTIACEAE:
Dumortiera hirsuta (Sw.) Nees, 655, 6

PALLAVICINACEAE:
Symphyogyna podophylla (Thunb.) Nees & Mout., 855, 6

BRYACEAE:
Bryum argenteum Hedw., 741, 6

Rhodobryum umbraeolatum (Hook.) Schimp. ex Pbr., 641, 3

TABLE 1.—Synopsis of the plant families of the Karkloof Forest with four or more species (> 1%), listed in order of numerical importance together with the number of genera in each family.

| Family               | No. species | No. genera |
|----------------------|-------------|------------|
| Arecaceae            | 2           | 15         |
| Orchidaceae          | 16          | 8          |
| Rubiaceae            | 16          | 9          |
| Adiantaceae          | 13          | 4          |
| Cyperaceae           | 13          | 7          |
| Liliaceae            | 12          | 7          |
| Aspleniaceae         | 11          | 1          |
| Euphorbiaceae        | 11          | 7          |
| Fabaceae             | 11          | 9          |
| Poaceae              | 11          | 8          |
| Lamiaceae            | 10          | 4          |
| Rosaceae             | 8           | 6          |
| Solanaceae           | 8           | 2          |
| Acanthaceae          | 7           | 5          |
| Flacourtaceae        | 7           | 6          |
| Aspidiaceae          | 6           | 4          |
| Celastraceae         | 6           | 2          |
| Scrophulariaceae     | 6           | 6          |
| Anacardiaceae        | 5           | 3          |
| Apiaceae             | 5           | 5          |
| Blechnaceae          | 5           | 1          |
| Gesneriaceae         | 5           | 1          |
| Loganiaceae          | 5           | 3          |
| Rutaceae             | 5           | 5          |
| Dennstaedtiaceae     | 4           | 4          |
| Hymenophyllaceae     | 4           | 2          |
| Juncaceae            | 4           | 2          |
| Lycopodiaceae        | 4           | 1          |
| Polyopodiaceae       | 4           | 3          |
| Rhamnaceae           | 4           | 4          |
| Thymelaeaceae        | 4           | 4          |
| Urticaeae            | 4           | 3          |

family. 42: 171—225.
PTEROBRYACEAE
Calypothecium hochnehnii (C. Muell.) Argent., Son 585, 3

NECKERACEAE
Petrohmmnum nutansense (C. Muell.) Fleisch., Moll 2867, 3

PTEROIDOPHYTA

LYCOPODIACEAE
Lycopodium

ceratium L., 899, 1
clavatum L., F. Bauer n.s., 1

gnidiodes L. f., 801, 6

verticillatum L. f., Fisher 516, 6

SELAGINELLACEAE
Selaginella

vranitsiana (Kunze) A. Braun, 630, 3, 6

mitteni Bak., 654, 3

OPHIOGLOSSACEAE
Ophioglossum polyphyllum A. Br. ex Seub., 903, 3

MARATTIACEAE
Marattia fraxinea J.E. Sm. ex J.F. Gmel. var. salicifolia (Schrad.) C. Chr., 609, 6

SCHIZAEACEAE
Anemia dregeana Kunze. Hilliard 2575, 3

Mohria calthorum (L.) Desv. 805, 1

GLEICHENIACEAE
Gleichenia umbraculifera (Kunze) T. Moore, 608, 1

HYMENOPHYLLACEAE
Hymenophyllum tunbridgense (L.) J.E. Sm., 1166, 6

Trichomanes

borbomum V. d. Bosch. 800, 6

pyxidiferum L. var. melanoschim (Schlecht.) Schelpe, 794, 4, 6

reptans Swartz, 798, 6

CYATHEACEAE
Cyathea
capensis (L. f.) J.E. Sm., 770, 6
dregei Kunze, Ripley 57, 1

DENNSTAEDTIACEAE
Blistiella glabra (Bors) A. F. Truxm, 1089, 4

Histoiperis incisa (Thunb.) J. Sm., 874, 1

Hypelepsis sarpisoria (Schrad.) Kuhn. 608, 2, 3, 6

Pteris aquaticum (L.) Kuhn. Graham 83, 1, 2

VITTARIACEAE
Vittaria isocystifolia Borr. O. Seele s.n., 4

ADIANTACEAE
Adiantum
capillus-veneris L., 856, 6

poiretii Wikstr var. poiretii, 1151, 6

raddianum Presl, 809, 6

Chelaenthes

bergiana Schlecht. ex Kunze, 786, 3, 6

cacilicurus (Langsd. & Fisch.) Schlecht. & N.C. Anthony, 778, 3

eckloniana (Kunze) Mett., 1152, 2

quadripinnata (Forsk.) Kuhn. Rycroft 548, 1

viridis (Forsk.) Swartz var. macrophylla (Kunze) Schelpe & N.C. Anthony, 605, 3

Pellaea calomelanos (Swartz) Link, 1071, 1

Pteris

buchananii Bak. ex Sm., Ripley 53, 3

catoptra Kunze, 611, 3

cretica L., 972, 6

dentata Forsk., Stanton 89, 3

POLYPODIACEAE
Lunogrammum lanceolatum (Swartz) Presl., 780, 4

Pleopeltis

macrorapha (Bors ex Wild.) Kaulf., 779, 4

schadleri (Mett.) Tardieu, 728, 4

Polypondium polypondoides (L.) Hitchc. subsp. ecklonii (Kunze) Schelpe, 739, 4

ASPLENIACEAE
Asplenium

aethiopicum (Burm. f.) Becherer, 776, 3, 6

bouleza Hook. ex Schelpe, 904, 6

dreceanum Kunze, 3082, 6

eiectum Bors ex Wild. var. eitectum, 769, 3, 6

lobatum Pape & Rawson, 1033, 3

lunulatum Swartz., 1064, 3

preussii Hieron., 856, 6

rutilifoliurn (Berg) Kunze, 607, 4

splendens Kunze, 627, 3, 6

theceferum (Kunth) Mett. var. concinnum (Schrad.) Schelpe, 783, 4

THELYPTERIDACEAE
Thelypteris

dentata (Forsk.) E. St. John, 868, 6

guerenziana (Mett.) Schelpe, 867, 6

pozoa (Lag.) Morton, 748, 6

ATHYRIACEAE
Athyrium scandiacum (Wdl.) Presl, 905, 6

Cystopteris fragilis (L.) Bernh., 777, 6

Lunathyrium janicum (Thunb.) Karata, 784, 6

LOMARISPIACEAE
Elaphoglossum

crostaticoides (Hook. & Grev.) Schelpe, 1140, 3

aurea (Dess.) T. Moore, 768, 3, 6

ASPIDIACEAE
Arachniodes foliosa (C. Chr.) Schelpe, 864, 6

Chenitis lanuginosa (Wdl. ex Kauff) Copel., 860, 4

Dryopteris

athomatica (Kunze) Kunze, Graham 67, 3

maculalis (Schlecht.) Kunze, 811, 3

Polystichum

pungens (Kauff) Presl, 610, 3

transvaalense N.C. Anthony, 856, 6

BLEICHNACEAE
Blechnum

austrole L., 1137, 3

capense Borr. f., 806, 1

giganteum (Kauff) Schlecht., 775, 6

inflexum (Kunze) Kuhn, 880, 1

tabulare (Thunb.) Kuhn, 933, 1

GYMNOSPERMAE

ZAMIACEAE
Encephalartos allenstei Lehm., Rycroft (1941), 1

PODOCARPACEAE
Podocarpus

falcatus (Thunb.) R. Br ex Mirb., Hilliard 2026, 5

henkelii Steyf. ex Dallim. & Jacks., Sim 19014, 5

latifolius (Thunb.) R. Br ex Mirb., Sim 19009, 5

ANGIOSPERMAE—MONOCOTYLEDONEA

POACEAE
Macrosteum nudum (Trin.) A. Camus, 734, 3

Paspalum urvillei Steud., 816, 6

Oplismenus hirtellus (L.) Beauv., 725, 3

Panicum

aenoline Nees, Moll 2872, 3

deustum Thunb., Mol 1672, 3

Setaria

megaphylla (Steud.) Dur & Schinz, 750, 1, 2

sphacelata (Schumach.) Mott, 844, 1, 2, 6

Prophytachloa prehensilis (Nees) Schweick., 724, 4

Agrostis lachnantha Nees, 751, 3, 6

Pseudobromus silvaticus K. Schum., 726, 3
CYPEROIDEAE
Cyperus
albostratus Schrad., 861, 3
distans L. f., 752, 3
Pucchulcus circinatus (Peters) Pfeiffer, 615, 6
Marsicus
keniensis (Kiekent.) Hooper, 619, 6
thunbergii (Vahl) Schrad., 823, 1, 2
Kyllinga elatior Kunth., 738, 6
Isoplepis
cernua (Vahl) Roem. & Schult., 1097, 1, 2
costata (Boeck.) A. Rich. var. macra (Boeck.) B.L. Burtt., 1099, 6
sepulcralis Steud., Moll 1076, 6
Schiewenotypium
lehmannii (Nees) Steud., 1090, 3
rufum Nees., 849, 1, 3
Carex
acutiformis Ehrh., Bourquin 344, 3
moseri Nelms., 909, 1, 2

ARACEAE
Zantedeschia aethiopica (L.) Spreng., III8, 1, 2, 6

JUNCACEAE
Juncus
dregeana Kunth., 1096, 1, 2
cfusus L., 791, 6
isomophyllus Spreng., 794, 6
Luzula africana Dyge ex Steud., 1031, 1

I.II.JACEAE
Littonia modesta Hook., 1153, 1
Chlorophytum
comosum (Thunb.) Jacq., 1106, 3
krookarianum Zanhiller, Moll 3470, 3
Kniphofia
buchanamii Bak. Moll 3457, 2
typhoni Bak. subsp. typhon, 795, 2
Dracaena hoekkeriana K. Koch. Rycroft (1941), 1, 3
Protasparagus
aethiopicus (L.) Obertm., 970, 1, 2
nataleensis (Bak.) Obertm., 8130, 5
setaceus (Kunth) Obertm., 675, 3
sp., 565, 3
Myrsinphylum asparagusoides (L.) Wild., 995, 1, 2
Behma reticulata (Thunb.) Dalr., 961, 4

HAEMODORACEAE
Barberetta aurea Harv., 1136, 6

AMARYLLIDACEAE
Scadoxus puniceus (L.) Fris & Nordd., 971, 2, 6
Cliviea minuta Regel., 993, 4
Nerine appendiculata Bak., 843, 1

VELLIOTIDACEAE
Salvietta elegans Balf., 651, 3, 6

DIOCSOBERACEAE
Dioscorea
costulata Kunth., 1061, 1
dregeana (Kunth) Dur. & Schinz var. dregeana, 1097, 4

IRIDACEAE
Dietes
burchelliana Gersner, Moll 3454, 6
iridoides (L.) Sweet ex Klatt., 1133, 3
Crocosma australis Plant., 556, 1, 2, 6

CANNACEAE
Canna indica L., 745, 6

ORCHIDACEAE
Stenoglossis limbata Lindl., 555, 4
Holothrix orthoceras (Harv.) Reichb. f., O'Connor 349, 3
Disperis
laminae Harv., 554, 3
lindleyana Reichb. f., 668, 3
Liparis bowkettii Harv., 848, 3

Polystachya
ottomana Reichb. f., 1050, 4, 5
pubescens Reichb. f., 1081, 4, 5
Bulbophyllum scaberulum Rolfe, in cultivation at NU, 4
Angraecum
conchiferum Lindl., Moll 3368, 4, 5
pussillum Lindl., in cultivation at NU, 4, 5
sacciferum Lindl., in cultivation at NU, 4, 5
Tridactyle bicaudata (Lindl.) Schltr., in cultivation at NU, 4, 5
Diphanimantia caffra (H. Bol) Linder, 1177, 4
Mystacidium
flanaganii (H. Bol.) H. Bol., 543, 4
gracile (Reichb. f.) Harv., 1107, 1, 4
venosum Harv. ex Rolfe, 926, 4

ANGIOSPERMAE – DICOTYLEDONAE

PIPERACEAE
Piper capense L. f., 871, 6
Piperia
retusa (L.) A. Dietr var. retusa, 906, 4
tetraphylla (G. Forst.) Hook. & Arn., 917, 4

ULMACEAE
Celtis africana Burm. f., 1047, 5

MORACEAE
Ficus
craterostoma Warb. ex Mildbr. & Barr., 581, 5
sul Forssk., 968, 1

URTIACEAE
Laportea
alatipes Hook. f., Moll 3522, 3
pedunculata (Weld.) Chew subsp. pedunculata, 743, 6
Droedonia amboinica Wedd., 346, 2, 3
Didymocysta caffra (Thunb.) Fris & Wilmot-Dear., Hilliard & Burtt 11887, 1

VISCACEAE
Viscum nervosum Hochst. ex A. Rich., 538, parasite on Monanthotaxis caffra

SANTALACEAE
Osyrhythos schimperianus (Hochst. ex A. Rich.) A. DC., 920, 2, 6

POLYGONACEAE
Rumex sp. cf. woodii N.E. Br., 1080, 6
Polygonum
nepalense Meinsh., 623, 6
salicicolum Willd., 618, 6

AMARANTHACEAE
Achyranthes ciliaris (L.) All., 760, 6

CARYOPHYLLACEAE
Stellaria sennii Chuen., 990, 2, 6
Drymaria cordata (L.) Willd. subsp. diandra (Blume.) J. Duke., 797, 3, 6

RANUNCULACEAE
Clematis brachiata Thunb., Moll 3526, 5
Ranunculus multifidos Forssk., 1079, 6
Thalictrum rhynotoscarpum Dill. & Rich., Moll 3528, 6

MENISPERMACEAE
Crossanepelis turulosa E. Mey. ex Harv., 789, 4

ANNONACEAE
Monanthotaxis caffra (Sond.) Verde., 1093, 5

TRI Meniaceae
Nymanus mossmora (Harv.) B. Hill., 629, 5

LAURACEAE
Ocotea bullata (Burch.) B. Hill., Moll 3478, 5
Cryptocarya
myrtifolia Stapf., 583, 4, 5
woodii Engl., 584, 4, 5
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PAPAVERACEAE
Papaver aculeatum Thunb.*, 1199, 6

BRASSICACEAE
Cardamine africana L., 907, 6

CRASSULACEAE
Crassula inamdena Schönl. & Bak f., 1134, 3, 6
pellecida L. subsp. albovirescens (Hook f.) Toelken., 757, 6
sp. aff. alba Forssk., 1174, 1

ESCALLONIACEAE
Choristylis rhamnoides Harv., 761, 4, 6

PITTOSPORACEAE
Pittosporum viridiflorum Sims., Moll. 3544, 1, 5

ROSACEAE
Rubus canescens Pursh*, 1071, 1, 2
rossii foliis J.E. Sm.*, 1058, 1, 2
Duchesnea indica (Andr.) Focke*, 746, 6
Alchemilla flavescens Engl., 788, 6
Leucosidea sericea Eckl. & Zeyh., 977, 1
Cliffordia linearifolia Eckl. & Zeyh., 1054, 1
nitidula (Engl.) E.F. & Th. Fries Jr., 982, 6
Prunus africana L., 1158, 5

CONNARACEAE
Cnestis natalensis (Hochst.) Planch. & Sond., 1901, 5

FABACEAE
Acacia
ataxacantha DC., Getliffe 219, 1
mearesi De Wild.*, 981, 1, 2, 6
melanoxylon R. Br.*, Ross 2088, 1, 2
Calpurnia aurea (Ait.) Benth., 1040, 2, 5, 6
Catalpa acuminata Jacq., 985, 3
Argyrolobium tomentosum (Andr.) Druce, 821, 1, 2, 3, 6
Indigofera natalensis H. Bol., 922, 4
Psoralea pinnata L., 925, 1
Desmodium repandum (Höfl.) DC., 612, 1, 2, 6
Dalbergia obwata E. Mey., 1041, 5
Dumasia villosa DC. var. villosa, 754, 2, 6

GERANIACEAE
Geranium
flanaganii Knuth, Hilliard & Burt 13485, 2
natalense Hilliard & Burt 1051, 1
schlechteri Knuth, Hilliard & Burt 13489, 1, 2

OXALIDACEAE
Oxalis
corniculata L., 758, 6
obliquifolia Stead. ex Rich., 1052, 1

RUTACEAE
Zanthoxylum davyi (Verdoorn) Wettm., 1002, 5
Calodendrum capense (L. f.) Thunb., 997, 5
Oricta bavannah (Engl.) Verdoorn, 1090, 4
Vepris lanceolata (Lam.) G. Don., 1078, 5
Claudia ansata (Willd.) Hook. f. ex Benth., 1087, 4, 5

PTEROCARYACEAE
Pterocarya fissa (Thunb.) Radlk., 979, 5

MELIACEAE
Ekebergia capensis Sparrm., 1027, 5

POLYGALACEAE
Polygala confusa MacOwan, 1024, 1, 2, 6

EUPHORBIAEAE
Andrachne ovalis (Sond.) Muell. Arg., Baver 687, 4
Drypetes
gerardii Hutch., Baver 1444, 1, 4
natalensis (Harv.) Hutch., 1076, 4
Micrococa capensis (Ball) Prem., 593, 4, 6

Clutia
katharineae Pax., 1039, 1
polchella L. var. franksi Prain, 803, 2, 4
Surgarea procera (Prain) Cres., Smook 655, 4
Exocaricia moranii (Kuntze) Pax., Moll. 3535, 4
Euphorbia
dumosa E. Mey. ex Boiss., 1053, 1, 2
epiphyllum E. Mey. ex Boiss., Hilliard & Burt 1041, 1, 2
kraussiana Benth. var. kraussiana, 629, 1, 2, 6

CALLITRICHACEAE
Callitrichaceae sp. cf. compressa N.E. Br., 1049, 6

ANACARDIACEAE
Harpephyllum caffrum Benth. ex Krauss, 1148, 5
Protoreus longifolius (Benth.) Engl., 964, 1
Rhus
chirindensis Bak.f., 1069, 5
dentata Thunb., 1056, 1
pyroides Burch. var. gracilis (Engl.) Burch. Davy, 1059, 1

AQUIFOLIACEAE
Ilex mitis (L.) Radlk. var. mitis, 1067, 5, 6

CELASTRACEAE
Maytenus acuminate (L.) Loes., 986, 4
heterophylla (Eckl. & Zeyh.) N.K. Robinson, 1028, 1
mossambicensis (Klotzsch) Brill., var. mossambicensis, 560, 6
undata (Thunb.) Blakely., 1029, 1

Cassine
papillosa (Hochst.) Kuntze, 1004, 4
tetragama (L. f.) Loes., 590, 5, 6

ICACINACEAE
Apodytes dimidiata E. Mey. ex Arn. subsp. dimidiata, 591, 5

SAPINDACEAE
Ailanthus

dregeanae (Sond.) de Winter, 585, 2, 4
melanocarpus (Sond.) Radlk., 872, 5

MELIANTHACEAE
Bersama tianshanensis Oly., 1339, 1

GREYIAEAE
Greyia sutherlandii Hook. & Harv., 1036, 1

BALSAMINACEAE
Impatiens hochstetteri Warb. subsp. hochstetteri, 540, 3

RHAMNACEAE
Scutia myrtina (Burm.f.) Korcz., 1066, 5
Rhamnus prinoides L. Hérit., 927, 1, 4
Phylica punctata Wild., 1037, 1
Helinus integrifolius (Lam.) Kuntze, R.M. Mahon s.n., 5

VITACEAE
Ricevissus
rhomboides (L. f. ex Harv.) Planch., 974, 5
tomentosa (Lam.) Wild & Drum., 1048, 5
Cyrillusprospera sp. cf. cirrhosum (Thunb.) Desc. ex Wild & Drum., 764, 4

TILIACEAE
Sparrmannia rincocarpa (Eckl. & Zeyh.) Kuntze, 1155, 1
Grewia occidentalis L., 1022, 5
Trumetella annua L., 673, 6

MALVACEAE
Abutilon sonneratianum (Cav.) Sweet, 807, 2
Hibiscus pedunculatus L. f., 592, 1, 4

STERCULIACEAE
Dombea tiliaefolia (Endl.) Planch., 938, 1

OCHNACEAE
Ochna
arthorea Burch. ex DC., 906, 5
natalitaa (Messr.) Walp., 978, 5
serrulata (Hochst.) Walp., 559, 4

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Olea capensis L. subsp. macrocarpa (C.H. Wr) Verdoorn, Moll 3489, 5
Jasminum streptopus E. Mey. var. transvaalensis (S. Moore) Verdoorn, Moll 3547, 1, 2, 4

LOGANIAEAE
Strychnos sp. c.f. usambarensis Gilg, 1094, 5
Nuxia floribunda Benth., 1077, 1, 5
Buddleja dysphyllophylla (Benth.) Radlk., 1046, 4
pulchella N.E. Br., 589, 4
salviifolia (L.) Lam., 978, 1, 2

APOCYNACEAE
Carissa breviflora (L.) Dej. ex Brenn var. acuminata (E. Mey.) Could, 996, 4
Strophanthus speciosus (Ward & Harv.) Reber, 537, 4

ASCLEPIADACEAE
Secamone gerrardii Harv. ex Benth., 999, 2, 4, 5
Rictrereuxia turlosa Decne., 732, 4

CONVOLVULACEAE
Cuscuta campestris Yan-ker, 1068, 1

VERBENACEAE
Verbena bonariensis L., 996, 6
Clerodendrum glabrum F. Mey. var. glabrum, Rycroft (1941), 5

LAMIAEAE
Leonotis ovymfolia (Burm. f.) Hawson var. raineriana (Visiani) Iwarsson, 899, 2
Stachys
aethiopica L., 928, 3
caffra E. Mey. ex Benth., Hilliard 2584, 1, 2
tabulosa Max-Omn., 602, 3, 6
Mentha aquatica L., 737, 1, 2
Plectranthus
dolichopodus Briq., 604, 3, 6
elegantulus Briq., 614, 3, 6
fruticosus L.Herit., 691, 4
laxiflorus Benth., 603, 6, 3
rehmanni Guerke, 730, 6

SOLANACEAE
Physalis peruviana L.*, 965, 1, 2
Solanum
acanthoedum E. Mey., 814, 1
aculeatum Don., 1142, 1
aculeatissimum Jacq., 820, 1, 2
didymanthum Don. var. pluriflorum Don., 813, 2
giganteum Jacq., 802, 2
mauritianum Scop.*, 963, 1, 2, 6
nigrum L.*, 1132, 6

SCROPHULARIAEAE
Nemesia silvatica Hilliard & Born, 834, 6
Diclis reptans Benth., 999, 6
Halleria lucida L., 967, 1, 5
Phygelius aequalis Harv. ex Hehn, 1038, 1
Bowesia verticillata (Eckl. & Zsch.) Schinz., 762, 6
Sutera floribunda (Benth.) Kuntze, Ripley 22, 1

SELAGINACEAE
Selago laevigata E. Mey., Gordon-Gray 6371, 1

GESNERIACEAE
Sprengelia
fanniniae Harv. ex C.B. Cl., 1127, 1
gardenii Hook., 765, 3
grandid N.E. Br. subsp. grandis, 766, 3, 6
polyanthus Hook. subsp. verecundus Hilliard, 931, 3, 6
silvaticus Hilliard, 669, 3, 6

ACANTHACEAE
Thunbergia
natalensis Hook., 541, 1, 2, 3
purpurata Harv. ex C.B. Cl., 999, 2
Scleroschiton harveyanus Neev., 763, 2

VIOLACEAE
Rimorea angustifolia (Thouars) Baill., 1032, 4

FLACOURTIACEAE
Rauwolfa lucida Harv. & Sonn., 1167, 4
Kigelia africana L., 3492, 5
Scolopia zeyheri (Nees) Harv., Wells 1870, 5
Trierencia grandifolia (Hochst.) Warb., Moll 3493, 5, 6
Diospyros
lucida Sim., 988, 4
rhamnoides (Burch. ex DC.) Harv., 987, 4
Cavearea gladiflora Mast., 582, 5

PASSIFLORACEAE
Passiflora edulis Sims.*, 1073, 1

ACHARLACEAE
Ceratoseygis laevis (Thunb.) Meuse, Hilliard 5057, 4, 6

BEGONIACEAE
Begonia
geranioides Hook. f., Hilliard 2583, 3, 6
sutherlandi Hook. f., 72, 6

OLINIAEAE
Olina emarginata Bartl. Davy, Moll 3317, 5

THYMELEACEAE
Peddiea africana Harv., 994, 4
Gnidia pulchella Meisn., 1057, 1
Englerodaphne pilosa Bartl. Davy, 600, 4, 5
Dass cotinifolia L., 587, 1, 2, 4

RHIZOPHORACEAE
Cassiopea
gerrardii (Schinz) Alston, 1070, 4
gummiiflua Tul. var. verticillata (N.E. Br.) J. Lewis, 962, 1

COMBRETACEAE
Combretum
edwardsii Exell., 1144, 5
kraussii Hochst., 1065, 5
Quisqualis parviflora Gerr. ex Harv., 998, 5

MYRTACEAE
Eugenia zuluensis Daenmner, 1068, 5
Syzygium gerrardii Harv. ex Hook. f.) Bartl. Davy, Moll 3359, 5
Eucalyptus grandis Hill ex Maid.*, 980, 1, 2

ONAGRAEAE
Oenothera erythrosepala Borbats*, 923, 1

ARALIACEAE
Schefflera umbrellifera (Sond.) Baill., Sim 19638, 5
Cussonia sphaerocarpa Strey, Moll 3348, 5

APIACEAE
Hydrocotyle americana L.*, 818, 2, 6
Centella asiatica (L.) Urb., 620, 3, 6
Sarcocela elata Buch-Ham., 652, 3, 6
Comium fortunum Hilliard & Bartt. var. silvaticum Hilliard & Bartt., 773, 6
Heteromorpha trifoliata (Wendel.) Eckl. & Zsch., 1156, 1

MYRISACEAE
Maesa laevigata Forsk. var. rufescens (A. DC.) Taton, 588, 1
Rapanea melanophloeos (L.) Mez., Wells 1923, 5

SAPOTACEAE
Bequaertiodendron natalense (Sond.) Heine & J.H. Hemsld., 1091, 4

EBENACEAE
Euclrea crispa (Thunb.) Guerke var. crispa, Rycroft (1941), 1, 2
Diospyros
lucida Sim., 988, 4
rhamnoides (Burch. ex DC.) Harv., 987, 4
Cavearea gladiflora Mast., 582, 5

OLEACEAE
Chionanthus flavolata (E. Mey.) Stearn subsp. flavolata, Drewes s.n., 5
Hypoestes aristata (Vahl) Soland. ex Roem. & Schult., 882, 1, 3
Isoglossa hypostiflora Lindau, 1143, 1
Justicia campylostemon (Nees) T. Anders., 562, 4

Rubiaceae
Conostomium natalense (Hochst.) Brem., 558, 3
Burchellia bubalina (L. f.) Sond., 975, 5, 6
Gardenia thunbergia L. f., 1044, 4
Hyperacanthus amoenus (Sims) Bridson, 1092, 4
Rothmannia capensis Thunb., Moll 3511, 5
Globosa (Hochst.) Key, 1043, 4
Oxyanthus speciosus DC., subsp. gerrardii (Sond.) Bridson, 1095, 2
Tricalysia capensis (Meissn.) Sim., 976, 4
Lanceolata (Sond.) Bartlett, 1042, 4
Canthium citatum (Klotzsch) Kuntze, 1072, 4
Trichosanthes anguina (Cham. & Schltdl.) Moll 3494, 4
Pauciflorus (Klotzsch) Kuntze, 1063, 4
Spinosa (Klotzsch) Kuntze, 1138, 1
Psydrax locuples (K. Schum.) Bridson, Moll 3485, 4
Pavetta lanceolata Eckl., 856, 4
Galeopsis circaeoides Thunb., 621, 1, 2

Cucurbitaceae
Zehneria scabra (L. f.) Sond. subsp. scabra, 932, 2, 6
Momordica foetida Schum., Mrs T. Collins s.n., 1
Matricaria nigellifolia DC. var. tenuior DC., 753, 1, 2
Hilliardia burbergensis (Oliv.) B Nord., 787, 1, 2

Campanulaceae
Wahlenbergia madagascariensis A. DC., 1069, 1

Lobeliaceae
Cyphiopsis aspergillodes E. Wimm., Stewart 1789, 6
Lobelia malowensis E. Wimm., 653, 6
Monopis stellarisoides (Pret.) Urb. subsp. stellarisoides, 729, 1, 2, 6

ASTERACEAE
Vernonia

Antischaetoides Sond., 985, 1
MesaphRhiza Less., Moll 3525, 4

Conyza
Scabrida DC., 1054, 1
Sumatrensis (Retz.) E.H. Walker*, 755, 6

Dentekia capensis Thunb., 1086, 1, 2

Achyrocline stenoptera (DC.) Hilliard & Bartlett, 1035, 1, 2

Helichrysum
Cooperi Harv., 747, 1, 2
Mundii Harv., 845, 2

Printzia auriculata Harv., Hilliard 5059, 1

Spilanthes maattifolia (Pers.) DC., 822, 6

Galinsoga parviflora (Pers.) DC., 822, 6

Senecio
deltoides Less., 880, 2, 4
Lygodium Hieron., 853, 6

Macrochilosides Hilliard, 852, 2, 4

Madagascarensis Poir., 790, 1, 6

Panduriformis Hilliard, 721, 2

Peynotera DC., 822, 6

Helichrysum mundii Harv., 845, 2

Crassocephalum crepidioides (Benth.) S. Moore*, 727, 6

Mikaniopsis cissampelina (DC.) C. Jeffrey, 937, 1

Osteospermum herbaceum L. f., Hilliard 2981, 1

Berkheya
Bipinnatifida (Harv.) Rees, subsp. bipinnatifida, 722, 1, 2
Debils MacOwan, 744, 6