Flora Biodiversity Survey Report for A Rocha Dakatcha Nature Reserve, July 2023

Prepared by: Mwadime Nyange

Edited by: Kirao

For: A Rocha Kenya

Summary

A flora biodiversity survey was done at A Rocha Dakatcha Nature Reserve from 15th to 20th July 2023 with the month representing the wet season. The main aim of the survey was to establish the baseline for the study area which involved documenting plant species diversity and vegetation type description and classification within the Nature Reserve and its adjacent areas. This being the wet season, herbs were given considerable effort in documenting them as Dakatcha itself is mostly dry. The preliminary survey results will be useful for future detailed floral assessments. About six main vegetation communities were surveyed during this survey. The survey entailed intense walking through the area while recording plants and doing vegetation descriptions within the Nature Reserve's boundaries and adjacent areas. Plant specimens were collected for species that could not be identified on-site for further identification at the East African Herbarium. Photographs of plants were also taken for further identification and profiling. This important ecosystem hosts several rare and threatened species of flora and fauna and should be considered an area of conservation priority.

Objectives

The objectives of the survey were to:

- Carry out a comprehensive flora diversity survey.
- Identify species of conservation concern
- Carry out vegetation classification.
- Outline threats to the ecosystem and suggest management strategies.
- Collect plant specimens to be deposited at the East African Herbarium (EA)
- Establish baseline data for future comparative studies and monitoring

Methodology

Plant diversity documentation involved intense searches throughout the Nature Reserve and its adjacent areas. Vegetation types were assessed by studying the species composition and vegetation structure at different sample areas/points in the Nature Reserve and its adjacent areas. Species of conservation concern which include rare and threatened plants were determined using information obtained from the International Union for Conservation of Nature (IUCN) and the Convention on International Trade in Endangered Species (CITES) databases. Plant specimens were collected for further identification and preservation at the East African Herbarium.

Results

Species diversity and composition

A total of 224 plant species belonging to 41 families and 152 genera were recorded during the survey. Poaceae (Grass family) had the highest diversity with 41 species representing 18% of the total plants, followed by 18 species each in Fabaceae (Legume family) and 15 species each in Cyperaceae (Sedge family) and Rubiaceae (Coffee family) all the four families representing about 40% of the total recorded plants. The most diverse genus was *Cyperus* with 11 species, followed by *Ipomoea* with 6 species and *Phyllanthus* with 5 species. The three represent the largest genera.

Floral habit diversity

Table 1. Flora habit diversity is represented in percentages.

Habit	**No. of species**	**Percentage**
Trees	6	3%
Shrubs	24	11%
Herbs	155	69%
Climbers	39	17%

Species of conservation concern

In this survey, we consider species included in the IUCN Red List high risk categories, species protected under CITES, and species of trees and shrubs endemic to the country as species of conservation concern.

Table 2. List of IUCN Red List of Threatened Species.

FAMILY	**SPECIES**	**Life form**	**IUCN STATUS**
Euphorbiaceae	*Euphorbia fluminis* S. Carter	Shrub	Endangered (EN)
Annonaceae	*Huberantha stuhlmannii* (Engl.) Chaowasku	shrub	Near Threatened (NT)

Figure 1. Photo of Endangered *Euphorbia fluminis*, is a shrub endemic to coastal Kenya.

CITES species

Appendix I: Includes: Species facing a very high risk of extinction in the wild: **None**

Appendix II: Includes: All species of Orchidaceae; All succulent species of the genus *Euphorbia*; All species of the genus *Aloe* not listed in Appendix I; plus species such as *Prunus africana* and *Osyris lanceolata*

Table 3. List of CITES Species.

Family	**Species**	**Life form**	**CITES**
Asphodelaceae	*Aloe sp.nr rabaiensis* Rendle	Shrub	Appendix II
Euphorbiaceae	*Euphorbia fluminis* S. Carter	Shrub	Appendix II

Figure 2. From left: *Aloe sp.nr rabaiensis* and *Euphoebia fluminis* are both CITES protected species.

Vegetation Classification

The Nature Reserves vegetation can be divided into six main types namely; *Brachystegia* woodland, *Cynometra* forest/thicket, Secondary mixed dry forest, Dry forest/thicket, Secondary bushland/thicket and Secondary *Acacia-Commiphora* bushland and thicket. Most of the nature reserve's vegetation is secondary in nature and has resulted from natural regeneration over the past years after intense tree harvesting mainly for charcoal and building materials or from past clearing for farmlands and a few pristine areas were observed. Micro-habitats such as seasonal water pools and riparian forests/thickets were also observed. Great variation in vegetation composition at different areas of the nature reserve was highly dependent on edaphic factors, rainfall, and human activity.

Habitats sampled during wet Season Survey

Brachystegia Woodland

This vegetation type is characterized by the dominant presence of *Brachystegia spiciformis* species of tree. The canopy is fairly open and allows light to reach the understory shrub layer. The understory might vary in density and composition depending on edaphic factors or human influence.

Figure 3. Typical *Brachystegia* woodland with an open understory with shrubs and grass as dominant life forms.

Cynometra Forest/Thicket

This vegetation type is characterized by the dominant presence of *Cynometra spp.* and *Manilkara sulcata* species of trees. Two types of these unique vegetation communities were identified; one comprised of *Cynometra webberi* as the dominant species of tree. This delicate vegetation type is one of the rarest, and hardest hit by pineapple farming and charcoal burning.

Figure 4. A section of degraded dwarf *Cynometra* forest/thicket because of clearing for pineapple farming.

Secondary Mixed Dry Forest

This vegetation type was characterized by the dominant presence of *Julbernadia, Brachystegia, Manilkara* and *Diospyros* tree species and a fairly dense understory of shrub layer. This vegetation community comprised of transition zones between *Brachystegia* woodland and *Cynometra* forest/thicket or riparian vegetation.

Figure 5. Mixed Dry Forest with *Manilkara sansibarensis, Julbernadia* and *Brachystegia* as the dominant trees.

Dry Forest/Thicket

This vegetation type is characterized by the dominant presence of *Diospyros bussei, Manilkara mochisia, Sideroxylon,* and *Dobera* species of trees with a typical dense shrub understory due to the open nature of its canopy. This vegetation type has suffered high degradation due to poaching of its dominant upper canopy species such as *Diospyros bussei* and *Manilkara mochisia* mainly for charcoal burning.

Secondary Acacia-Commiphora Bushland and Thicket

This vegetation type is characterized by dominant presence of *Acacia* and *Commipora* species of trees. This vegetation type was found to occur mainly in areas that were previously farmlands which all the original vegetation was cleared completely. The dominant species of trees include; *Acacia nilotica, Acacia mellifera, Commipora schimperi* and *Commiphora campestris.*

Figure 6. A section of Secondary *Acacia-Commiphora* bushland and thicket with *Acacia* and *Commiphora* as the dominant trees.

Figure 7. A section of degraded dry forest/thicket

Seasonal wetlands/water pools

These unique habitats form during heavy rainy seasons and comprise mainly of prolific annual herbaceous plants that will complete their life cycle before the dry season prevails. The wetlands sampled were predominantly colonized by grass (Poaceae) and sedge (Cyperaceae) species which form a key and vital role to these unique ecosystems. The dominant grass species observed was *Echinochloa haploclada* and *Oryza punctata* (wild rice species), *Cyperus denudatus* and *Kyllinga polyphylla* were the dominant sedges. This important habitat supports plants which are nesting sites for the rare endemic and endangered Clarke's weaver.

Figure 8. Seasonal wetlands form one of the unique and important habitats that support plants which are nesting sites for the rare endemic and endangered Clarke's weaver.

Threats to its Flora and Fauna

The nature reserve faces several threats to its flora and fauna, the main threat being habitat destruction through clearing of the original vegetation to pave way for farmlands and extensive tree harvesting mainly for charcoal burning. The three main target species of trees being *Diospyros bussei* (Mkulu), *Newtonia hildebrandtii* (Mukami) and *Manilkara mochisia* (Mnago). Poaching of hard wood tree species for timber such as *Afzelia quanzensis* (Mbamba-kofi) and other hard wood species was evident with several sightings of old tree stumps in the nature reserve. Poaching of wildlife was evident as several snares were recovered from the nature reserve by the reserve scouts. Attempts of land grabbing were also evident as sighting of illegal placement of land beacons into the nature reserve's boundaries was observed. There was evidence of past fires and rock harvesting within the nature reserves boundaries, fires might pose a great threat to the delicate *Cynometra* forest/thicket which is very susceptible to fires. Intense

debarking of the rare and threatened *Warburgia stuhlmannii* was observed and posing a threat to its survival.

Figure 9. A heap of hard wood tree species logs cut for charcoal burning was observed in unpurchased land adjacent to the Nature Reserve. This kind of devastating destruction is still on going.

Figure 10. Extensive clearing of land for farming is still a major threat to this fragile ecosystem.

Figure 11. A section of a newly established pineapple farm which is the major threat to dwindling *Cynometra* forest/thicket vegetation community.

Discussion

The nature reserve's 224 plant species recorded during wet season is considered impressive, out of the 224 plant species recorded 155 species are herbaceous and constitute about 70% of the total recorded plants. The number of herbaceous plants such as grasses and forbs were considerably high, this was due to the wet conditions. The grass family (Poaceae) had the highest number of species with a total of 41 which represents 18% of the recorded plants and thus this family plays an important role in providing the much-needed biomass in this delicate ecosystem especially for its various diversity of its fauna and ensuring their survival during the extreme dry seasons. Subsequent surveys will be important for enriching its flora diversity for a comprehensive plant checklist.

During this survey, two threatened species were recorded, among these is the endangered (EN) *Euphorbia fluminis* which is also a coastal Kenya endemic and grouped in the IUCN red list of Threatened species under the high-risk category and the other being *Huberantha stuhlmannii* categorized as Near Threatened (NT), under the low risk category and all are native to tropical East Africa.

There is also a possible new species of *Aloe* and more flowering and fruiting material needs to be gathered for a solid conclusion. It is also an important breeding and forage site for rare and threatened coastal birds such as the Clarke's weaver, Malindi Pipit and Fischer's turaco, these

species are mainly threatened by habitat loss. The micro-habitats such as the seasonal water pools are breeding grounds for the Clarke's weaver and thus playing an important role in the survival of this species.

Conclusion

The nature reserve plant diversity is highly dependent on human intervention and natural regeneration as well as edaphic factors and climatic conditions. High species diversity is expected after subsequent flora surveys. Its conservation will be of great importance considering the immense diversity of flora and fauna it preserves.

Recommendations

- Increase the size and cover of the indigenous vegetation through purchase of land
- Increase the number of skilled security personnel to reduce the rate of poaching
- Controlled increase in number of indigenous plants is encouraged
- Re-Afforestation to increase vegetation cover with native species is highly encouraged
- Organize for a longer wet season survey to capture remaining herbaceous species and higher plants diversity.

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Appendix I

Arocha Kenya Dakacha Nature Reserve wet season survey plant checklist

No.	**family**	**species**	Life form
1	Acanthaceae	*Anisotes tanensis Baden*	Shrub
2	Acanthaceae	*Barleria submollis Lindau*	Herb
3	Acanthaceae	*Crossandra pungens Lindau*	Herb
4	Acanthaceae	*Crossandra subacaulis C.B.Clarke*	Herb
5	Acanthaceae	*Elytraria minor Dokosi*	Herb
6	Acanthaceae	*Justicia calyculata Deflers*	Herb
7	Acanthaceae	*Justicia heterocarpa T.Anderson*	Herb
8	Acanthaceae	*Rhinacanthus dichotomus (Lindau) I. Darbysh.*	Herb
9	Acanthaceae	*Ruellia patula Jacq.*	Herb
10	Acanthaceae	*Sclerochiton vogelii (Nees) T.Anderson ssp. holstii (Lindau) Napper*	Shrub
11	Acanthaceae	*Thunbergia holstii Lindau*	Shrub
12	Adiantaceae	*Pellaea involuta (SW.) Baker*	Herb
13	Asphodelaceae	*Aloe sp. nr. rabaiensis Rendle*	Shrub
14	Amaranthaceae	*Aerva lanata (L.) Juss*	Herb
15	Amaranthaceae	*Amaranthus dubius Thell.*	Herb
16	Amaranthaceae	*Celosia sp.*	Herb
17	Amaranthaceae	*Centemopsis kirkii (Hook.f.) Schinz*	Herb
18	Amaranthaceae	*Nothosaerva brachiata (L.) Wight*	Herb
19	Amaranthaceae	*Psilotrichum sericeum (Roxb.) Dalziel*	Herb
20	Annonaceae	*Artabotrys monteiroae Oliv.*	Climber
21	Annonaceae	*Huberantha stuhlmannii (Engl.) Chaowasku*	Tree
22	Anthericaceae	*Chlorophytum sp.*	Herb
23	Araceae	*Anchomanes abbreviatus Engl.*	Herb
24	Araceae	*Gonatopus petiolulatus (Peter) Bogner*	Herb
25	Apocynaceae	*Ceropegia aristolochioides Decne.*	Climber
26	Apocynaceae	*Ceropegia nilotica Kotschy*	Climber
27	Apocynaceae	*Cryptolepis hypoglauca K.Schum.*	Climber
28	Apocynaceae	*Cynanchum gerrardii (Harv.) Liede ssp. gerrardii*	Climber
29	Apocynaceae	*Edithcolea grandis N. E. Br.*	Herb

30	Apocynaceae	*Pentatropis nivalis (J.F.Gmel.) D.V.Field & J.R.I.*	Climber
31	Boraginaceae	*Hilsenbergia nemoralis (Gürke) J.S.Mill.*	Tree
32	Boraginaceae	*Hilsenbergia teitensis (Gürke) J.S.Mill.*	Tree
33	Boraginaceae	*Heliotropium steudneri Vatke ssp. steudneri*	Herb
34	Cactaceae	*Opuntia monacantha Haw*	Shrub
35	Cleomaceae	*Cleome briquettii Polhill*	Herb
36	Colchicaceae	*Gloriosa superba L.*	Climber
37	Commelinaceae	*Aneilema aequinoctiale Kunth*	Herb
38	Commelinaceae	*Aneilema zebrinum Chiov.*	Herb
39	Commelinaceae	*Commelina erecta L.*	Herb
40	Commelinaceae	*Commelina foliacea Chiov. ssp. foliacea*	Herb
41	Commelinaceae	*Commelina petersii Hassk.*	Herb
42	Commelinaceae	*Cyanotis lanata Benth.*	Herb
43	Commelinaceae	*Cyanotis repens Faden & D.M.Cameron ssp. repens*	Herb
44	Commelinaceae	*Murdannia simplex (Vahl) Brenan*	Herb
45	Asteraceae	*Acanthospermum hispidum DC.*	Herb
46	Asteraceae	*Ageratum conyzoides L.*	Herb
47	Asteraceae	*Bidens pilosa L.*	Herb
48	Asteraceae	*Blepharispermum zanguebaricum Oliv. & Hiern*	Climber
49	Asteraceae	*Conyza bonariensis (L.) Cronquist*	Herb
50	Asteraceae	*Crassocephalum sp.*	Herb
51	Asteraceae	*Gutenbergia pembensis S.Moore*	Herb
52	Asteraceae	*Launaea intybacea (Jacq.) Beauverd*	Herb
53	Asteraceae	*Vernonia cinerea (L.) Less. var. cinerea*	Herb
54	Asteraceae	*Vernonia sp.*	Herb
55	Convolvulaceae	*Astripomoea hyoscyamoides (Vatke) Verdc. var. hyoscyamoides*	Herb
56	Convolvulaceae	*Metaporana densiflora (Hallier f.) N.E.Br.*	Climber
57	Convolvulaceae	*Evolvulus alsinoides (L.) L.*	Herb
58	Convolvulaceae	*Evolvulus nummularius (L.) L.*	Herb
59	Convolvulaceae	*Hewittia malabarica (L.) Suresh*	Climber
60	Convolvulaceae	*Ipomoea aquatica Forssk.*	Climber
61	Convolvulaceae	*Ipomoea coptica (L.) Sweet var. acuta*	Climber
62	Convolvulaceae	*Ipomoea ficifolia Lindl.*	Climber
63	Convolvulaceae	*Ipomoea garckeana Vatke*	Climber
64	Convolvulaceae	*Ipomoea irwinae Verdc.*	Climber
65	Convolvulaceae	*Ipomoea obscura (L.) Ker Gawl. var. obscura*	Climber
66	Convolvulaceae	*Jacquemontia tamnifolia (L.) Griseb.*	Climber
67	Convolvulaceae	*Merremia ampelophylla Hallier f. var. ampelophylla*	Climber
68	Convolvulaceae	*Xenostegia tridentata (L.) D.F. Austin & G.W.Staples ssp.*	Climber
69	Crassulaceae	*Kalanchoe nyikae Engl. ssp. nyikae*	Herb
70	Cucurbitaceae	*Corallocarpus epigaeus (Rottler) C.B.Clarke*	Climber

71	Cucurbitaceae	*Cucumis dipsaceus Spach*	Climber
72	Cucurbitaceae	*Cucumis prophetaram L. ssp. dissectus (Naudin) C.Jeffrey*	Climber
73	Cucurbitaceae	*Cucumis sacleuxii Paill. & Bois*	Climber
74	Cucurbitaceae	*Gerrardanthus lobatus (Cogn.) C.Jeffrey*	Climber
75	Cucurbitaceae	*Kedrostis foetidissima (Jacq.) Cogn.*	Climber
76	Cucurbitaceae	*Peponium vogelii (Hook.f.) Engl.*	Climber
77	Cucurbitaceae	*Zehneria ?thwaitesii (Schweinf.) C.Jeffrey*	Climber
78	Cyperaceae	*Bulbostylis densicaespitosa (Lye) R.W.Haines*	Herb
79	Cyperaceae	*Cyperus denudatus L.f. var. denudatus*	Herb
80	Cyperaceae	*Cyperus ?niveus Retz. var.*	Herb
81	Cyperaceae	*Cyperus ?rotundus L.*	Herb
82	Cyperaceae	*Cyperus amabilis Vahl*	Herb
83	Cyperaceae	*Cyperus compressus L.*	Herb
84	Cyperaceae	*Cyperus distans L.f.*	Herb
85	Cyperaceae	*Cyperus dubius Rottb.*	Herb
86	Cyperaceae	*Cyperus niveus Retz. var. leucocephalus*	Herb
87	Cyperaceae	*Cyperus ?pseudo-vestitus (C.B.Clarke) Kük.*	Herb
88	Cyperaceae	*Cyperus rohlfsii Boeck.*	Herb
89	Cyperaceae	*Cyperus tenax Boeck.*	Herb
90	Cyperaceae	*Kyllinga cartilaginea K.Schum.*	Herb
91	Cyperaceae	*Kyllinga flava C.B.Clarke*	Herb
92	Cyperaceae	*Kyllinga polyphylla Kunth*	Herb
93	Acanthaceae	*Sclerochiton boivinii (Baill.) C.B.Clarke*	Shrub
94	Euphorbiaceae	*Acalypha indica L.*	Herb
95	Euphorbiaceae	*Acalypha lanceolata Willd.*	Herb
96	Euphorbiaceae	*Acalypha neptunica Müll.Arg. var. pubescens (Pax) Hutch.*	Shrub
97	Euphorbiaceae	*Croton menyharthii Pax*	Shrub
98	Euphorbiaceae	*Euphorbia fluminis S.Carter*	Shrub
99	Euphorbiaceae	*Euphorbia hirta L.*	Herb
100	Euphorbiaceae	*Monadenium sp. 1*	Herb
101	Phyllanthaceae	*Meineckia phyllanthoides Baill. ssp. somalensis (Pax) Webster*	Herb
102	Phyllanthaceae	*Phyllanthus amarus Schumach. & Thonn.*	Herb
103	Phyllanthaceae	*Phyllanthus harrisii Radcl.-Sm. ?*	Herb
104	Phyllanthaceae	*Phyllanthus leucanthus Pax*	Herb
105	Phyllanthaceae	*Phyllanthus maderaspatensis L.*	Herb
106	Phyllanthaceae	*Phyllanthus welwitschianus Meull.Arg. var. beillei (Hutch.) A.R.-Sm.*	Shrub
107	Euphorbiaceae	*Ricinus communis L.*	Tree
108	Poaceae	*Andropogon canaliculatus Schumach.*	Herb
109	Poaceae	*Aristida adscensionsis L.*	Herb
110	Poaceae	*Aristida mutabilis Trin. & Rupr.*	Herb
111	Poaceae	*Bothriochloa insculpta (A.Rich.) A.Camus*	Herb

112	Poaceae	*Brachiaria chusqueoides (Hack.) Clayton*	Herb
113	Poaceae	*Brachiaria deflexa (Schumach.) Robyns*	Herb
114	Poaceae	*Brachiaria leucacrantha (K.Schum.) Stapf*	Herb
115	Poaceae	*Cenchrus ciliaris L.*	Herb
116	Poaceae	*Chloris mossambicensis K.Schum.*	Herb
117	Poaceae	*Tetrapogon roxburghiana (Schult.) P.M.Peterson*	Herb
118	Poaceae	*Digitaria argyrotricha (Andersson) Chiov.*	Herb
119	Poaceae	*Digitaria nuda Schumach.*	Herb
120	Poaceae	*Digitaria perrottetii (Kunth) Stapf*	Herb
121	Poaceae	*Digitaria velutina (Forssk.) P.Beauv.*	Herb
122	Poaceae	*Echinochloa colona (L.) Link*	Herb
123	Poaceae	*Echinochloa haploclada (Stapf) Stapf*	Herb
124	Poaceae	*Enteropogon macrostachyus*	Herb
125	Poaceae	*Eragrostis cilianensis (All.) Link ex Lutati*	Herb
126	Poaceae	*Eragrostis ciliaris (L.) R.Br.*	Herb
127	Poaceae	*Eragrostis superba Peyr.*	Herb
128	Poaceae	*Harpachne schimperi A.Rich.*	Herb
129	Poaceae	*Leptochloa obtusiflora Hochst.*	Herb
130	Poaceae	*Leptochloa uniflora A.Rich.*	Herb
131	Poaceae	*Leptothrium ?*	Herb
132	Poaceae	*Leptothrium senegalense (Kunth) Clayton*	Herb
133	Poaceae	*Melinis repens (Willd.) Zizka*	Herb
134	Poaceae	*Oryza punctata Steud.*	Herb
135	Poaceae	*Panicum deustum Thunb.*	Herb
136	Poaceae	*Panicum infestum Peters*	Herb
137	Poaceae	*Panicum laticomum Nees*	Herb
138	Poaceae	*Panicum maximum Jacq.*	Herb
139	Poaceae	*Cenchrus polystachios (L.) Morrone ssp. polystachios*	Herb
140	Poaceae	*Perotis hildebrandtii Mez*	Herb
141	Poaceae	*Perotis patens Gand.*	Herb
142	Poaceae	*Rottboellia cochinchinensis (Lour.) Clayton*	Herb
143	Poaceae	*Sacciolepis curvata (L.) Chase*	Herb
144	Poaceae	*Schoenefeldia transiens (Pilg.) Chiov.*	Herb
145	Poaceae	*Setaria sp.*	Herb
146	Poaceae	*Sorghum arundinaceum (Desv.) Stapf*	Herb
147	Poaceae	*Sporobolus consimilis Fresen.*	Herb
148	Poaceae	*Urochloa panicoides P.Beauv.*	Herb
149	Hypoxidaceae	*Hypoxis angustifolia Lam.*	Herb
150	Lamiaceae	*Aeollanthus zanzibaricus S.Moore*	Herb
151	Lamiaceae	*Basilicum polystachion (L.) Moench*	Herb
152	Lamiaceae	*Endostemon tereticaulis (Poir.) Ashby*	Herb

153	Lamiaceae	*Hoslundia opposita Vahl*	Shrub
154	Lamiaceae	*Leucas tsavoensis Sebald*	Herb
155	Lamiaceae	*Ocimum filamentosum Forssk.*	Herb
156	Lamiaceae	*Orthosiphon pallidus Royle*	Herb
157	Lamiaceae	*Orthosiphon thymiflorus (Roth) Sleesen*	Herb
158	Lamiaceae	*Plectranthus longipes Baker*	Herb
159	Lamiaceae	*Plectranthus sp.*	Herb
160	Fabaceae	*Abrus precatorius L. ssp. africanus Verdc.*	Climber
161	Fabaceae	*Albizia lebbeck (L.) Benth.*	Tree
162	Fabaceae	*Bauhinia tomentosa L.*	Shrub
163	Fabaceae	*Chamaecrista mimosoides (L.) Greene*	Herb
164	Fabaceae	*Clitoria ternatea L.*	Climber
165	Fabaceae	*Crotalaria sp.*	Herb
166	Fabaceae	*Indigofera longimucronata Baker f.*	Herb
167	Fabaceae	*Indigofera trita L.f. var. ?*	Herb
168	Fabaceae	*Indigofera trita L.f. var. scabra*	Herb
169	Fabaceae	*Indigofera vohemarensis (L.) R.Br.*	Herb
170	Fabaceae	*Macrotyloma axillare (E.Mey.) Verdc. var. glabrum*	Climber
171	Fabaceae	*Rhynchosia minima (L.) DC. var. nuda*	Climber
172	Fabaceae	*Sesbania quadrata J.B.Gillett*	Shrub
173	Fabaceae	*Stylosanthes fruticosa (Retz.) Alston*	Herb
174	Fabaceae	*Tephrosia pumila (Lam.) Pers. var. pumila*	Herb
175	Fabaceae	*Tephrosia subtriflora Baker*	Herb
176	Fabaceae	*Teramnus labialis (L.f.) Spreng. ssp. arabicus Verdc.*	Climber
177	Fabaceae	*Vigna unguiculata (L.) Walp. ssp. dekindtiana (Harms) Verdc.*	Climber
178	Lobeliaceae	*Lobelia fervens Thunb. ssp. fervens*	Herb
179	Malvaceae	*Abutilon guineense (Schumach.) Baker f. & Exell*	Herb
180	Malvaceae	*Hibiscus hildebrandtii Sprague & Hutch.*	Herb
181	Malvaceae	*Hibiscus panduriformis Burm.f.*	Herb
182	Malvaceae	*Hibiscus vitifolius L.*	Herb
183	Malvaceae	*Sida alba L.*	Herb
184	Malvaceae	*Sida cordifolia L.*	Herb
185	Malvaceae	*Sida ovata Forssk.*	Herb
186	Menispermaceae	*Cissampelos pareira L.*	Climber
187	Moraceae	*Dorstenia barnimiana Schweinf. var.*	Herb
188	Nyctaginaceae	*Boerhavia erecta L.*	Herb
189	Oleaceae	*Jasminum streptopus E.Mey.*	Climber
190	Piperaceae	*Peperomia rotundifolia (L.) Humb., Bonpl. & Kunth*	Herb
191	Polygalaceae	*Polygala amboniensis Gürke*	Herb
192	Polygalaceae	*Polygala sphenoptera Fresen.*	Herb
193	Portulacaceae	*Portulaca kermesina N.E.Br.*	Herb

194	Portulacaceae	*Portulaca oleracea L.*	Herb
195	Rhamnaceae	*Scutia myrtina (Burm.f.) Kurz*	Climber
196	Rubiaceae	*Chassalia umbraticola Vatke ssp. umbraticola*	Shrub
197	Rubiaceae	*Chazaliella abrupta (Hiern) Petit & Verdc. var. parvifolia Verdc.*	Shrub
198	Rubiaceae	*Coffea sessiliflora Bridson ssp. sessiliflora*	Shrub
199	Rubiaceae	*Kohautia coccinea Royle*	Herb
200	Rubiaceae	*Cordylostigma obtusilobum (Hiern) Groeninckx & Dessein*	Herb
201	Rubiaceae	*Kraussia kirkii (Hook.f.) Bullock*	Shrub
202	Rubiaceae	*Oldenlandia corymbosa L. var. corymbosa*	Herb
203	Rubiaceae	*Oldenlandia fastigiata Bremek. var. fastigiata*	Herb
204	Rubiaceae	*Oldenlandia herbacea (L.) Roxb. var. herbacea*	Herb
205	Rubiaceae	*Oldenlandia johnstonii (Oliv.) K.Schum. ex Engl.*	Herb
206	Rubiaceae	*Pavetta uniflora Bremek.*	Shrub
207	Rubiaceae	*Psychotria punctata Vatke var. tenuis Petit*	Shrub
208	Rubiaceae	*Rothmannia ravae (Chiov.) Bridson*	Tree
209	Rubiaceae	*Spermacoce sp.*	Herb
210	Rubiaceae	*Tarenna supra-axillaris (Hemsl.) Bremek. ssp. supra-axillaris*	Shrub
211	Rutaceae	*Vepris sp.*	Shrub
212	Malvaceae	*Waltheria indica L.*	Herb
213	Malvaceae	*Corchorus aestuans L.*	Herb
214	Malvaceae	*Corchorus pseudo-olitorius Islam & Zaid*	Herb
215	Malvaceae	*Corchorus trilocularis L.*	Herb
216	Turneraceae	*Wormskioldia brevicaulis Urb. var. rolulata (Urb.) J. Lewis*	Herb
217	Verbenaceae	*Lantana camara L.*	Shrub
218	Verbenaceae	*Lantana viburnoides (Forssk.) Vahl var. viburnoides*	Shrub
219	Lamiaceae	*Premna resinosa (Hochst.) Schauer ssp. holstii (Gürke) Verdc.*	Shrub
220	Violaceae	*Hybanthus enneaspermus (L.) F.Muell.*	Herb
221	Vitaceae	*Cissus sciaphila Gilg*	Climber
222	Vitaceae	*Cyphostemma adenocaule (A.Rich.) Wild & R.B.Drumm. ssp. adenocaule*	Climber
223	Vitaceae	*Cyphostemma zimmermannii Verdc.*	Climber
224	Zingiberaceae	*Siphonochilus aethiopicus (Schweinf.) B.L.Burtt*	Herb