
A PRELIMINARY LIST OF THE MOIST FOREST ANGIOSPERM FLORA OF MWANIHANA FOREST RESERVE, TANZANIA¹

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ABSTRACT

A preliminary survey of the Mwanihana Forest Reserve, Tanzania, has yielded 440 angiosperm species. These are listed systematically, and by habitat and habit. The forests are rich in species of restricted distribution, and have affinities to the Guineo-Congolian forests of western Africa.

The Mwanihana Forest Reserve has been the focus of biological study since the discovery of a new taxon of the primate *Cercocebus galeritus* there in 1979 (Homewood & Rodgers, 1981), which prompted a proposal for the area to be given national park status (Rodgers & Homewood, 1982a). In the course of further study, a new species of sunbird (*Nectarinia rufipennis*) has been recorded from the forest (Jensen, 1983), and more than 40 new species of plants have been found. These include *Seychellaria africana*, which represents the first record of the family Triuridaceae from East Africa, and new species in the genera *Uvariopsis* and *Omphalocarpum*, which were not previously known from eastern Africa.

The following account is the result of botanical exploration of the forest in 1984 as part of a National Geographic Society expedition to the area in collaboration with the World Wildlife Fund Tanzania Forest Habitat Evaluation Project. Other aspects of the botany of the forest have been treated elsewhere (Lovett & Thomas, 1986).

The main area of study was the forest on the steep east-facing escarpment slopes above Sanje village at latitude 7°50'S and longitude 36°55'E. These slopes are the eastern edge of the Gologolo Mountains, which are the northern end of the Uzungwa range. In the study area the continuous altitudinal range of the forest is from 450 m to

1,760 m, but it is greater elsewhere on the escarpment. The rainfall is approximately 2,000–2,500 mm a year, with one wet season from November to May, when on average more than 100 mm of rain a month is received. There is a four-month dry season from July to October, when each month receives 50 mm of rain on average, and months of no rain are frequent. At higher altitudes there is a rich epiphytic bryophyte cover, indicating that a mist effect may be important in the water balance. The escarpment is dissected by steep-sided valleys separated by sharp ridge tops. The ridge tops are exposed, and so species normally occurring outside the forest habitat can be found within it. Some of the valley bottoms are flat, though nowhere particularly broad, and it is here that the forest is best developed. Elephant damage is common in the higher altitudes, and buffaloes are also present. Timber is being extracted by pit sawing, and in some areas there is considerable disturbance.

The angiosperm species recorded in the forest are arranged below according to habitat, habit, and in a systematic list. The habitat is divided into four types. The first three—Zanzibar–Inhambane Lowland Forest, Zanzibar–Inhambane Transitional Forest, and Afromontane Rain Forest—correspond to White's (1983) phytogeographic vegetation classification. The fourth division, Ridge Top Forest, is a specific vegetation type of restricted extent,

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being the highest ridge investigated in this study. This habitat is treated separately, as there are a number of species found only there, and it indicates which species of the Afromontane Rain Forest tend towards areas of greater exposure. The systematic list is divided into dicotyledons and monocotyledons, with families arranged alphabetically. Species and genera are arranged alphabetically within the families.

The list of species is far from complete, particularly for herbaceous and shrubby species. Many of the large trees were identified from sterile material gathered during the course of a quantitative ecological survey, and the determinations are included here because the canopy species are not often collected.

SPECIES ARRANGED ACCORDING TO HABITAT AND HABIT

The habitats follow the phytogeographical definitions given by White (1983) with the exception of Ridge Top Forest. Each habitat is given an altitudinal range and a short description of forest structure. The habit of each species is self-explanatory, except that it should be noted that a tree is a single-stemmed woody plant 10 m tall or at least 20 cm in diameter at breast height. The species are arranged alphabetically.

ZANZIBAR-INHAMBANE LOWLAND FOREST

Altitudinal range 450–750 m, canopy height 25–30 m with emergents to 40 m tall. Middle and shrub layer well developed. Herb layer sparse except in disturbed areas, where it is dominated by *Olyra latifolia*.

TREES: *Afrosorsalisia cerasifera*, *Albizia adianthifolia*, *A. glaberrima* var. *glabrescens*, *A. zimmermannii*, *Allophylus melliodorus*, *Angyalocalyx braunii*, *Aningeria pseudoracemosa*, *Anthocleista grandifolia*, *Antiaris toxicaria*, *Baphia semseiana*, *Bequaertiodendron natalense*, *Brachystegia microphylla*, *Calycosiphonia spathicalyx*, *Campylospermum sacleuxii*, *Casearia battiscombei*, *C. ?runssorica*, *Celtis durandii*, *Chaetacme aristata*, *Chionanthus mildbraedii*, *Craibia brevicaudata* subsp. *brevicaudata*, *Croton macrostachyus*, *C. cf. megalocarpoides*, *Dialium holtzii*, *Dichapetalum stuhlmannii*, *Diospyros brucei*, *D. mespiliformis*, *D. zombensis*, *Dracaena usambarensis*, *Drypetes natalensis*, *Elaeis guineensis*, *Enantia kummeriae*, *Erythrophleum suaveolens*, *Ficus cyathistipula* subsp. *cyathistipula*, *F. kirkii*, *F. lutea*, *F.*

quibeba, *F. sur*, *F. thonningii*, *Filicium decipiens*, *Funtumia africana*, *Garcinia buchananii*, *Haplocoeliopsis africana*, *Haplocoelum foliolosum*, *Harungana madagascariensis*, *Homalium longistylum*, *Inhambanella henriquesii*, *Khaya nyasica*, *Lagynias pallidiflora*, *Lecaniodiscus fraxinifolius*, *Lettowianthus stellatus*, *Ludia mauritiana*, *Macaranga capensis* var. *capensis*, *Malacantha alnifolia*, *Milicia excelsa*, *Monodora grandidieri*, *Newtonia paucijuga*, *Odyndea zimmermannii*, *Pachystela brevipes*, *Paramacrolobium coeruleum*, *Parinari excelsa*, *Parkia filicoidea*, *Phyllanthus inflatus*, *Placodiscus* aff. *amaniensis*, *Pteleopsis myrtifolia*, *Pterocarpus milbraedii* subsp. *usambarensis*, *Rhodognaphalon schumannianum*, *Ricinodendron heudelotii*, *Rothmannia fischeri* subsp. *fischeri*, *R. manganjae*, *Sapium ellipticum*, *Schefflerodendron usambarense*, *Sorindeia madagascariensis*, *Stereospermum kunthianum*, *Suregada zanzibariensis*, *Tabernaemontana pachysiphon*, *Terminalia sambesiaca*, *Treculia africana*, *Trichoscypha ulugurensis*, *Trilepisium madagascariense*, *Uvariadendron gorgonis*, *Vangueriopsis longiflora*, *Vitellariopsis cuneata*, *Ziziphus pubescens*.

SMALL TREES AND SHRUBS: *Achyropermum carvalhi*, *Allophylus pervillei*, *Campylospermum sacleuxii*, *Carvalhoa campanulata*, *Chytranthus prieurianus* subsp. *longiflorus*, *Clerodendrum capitatum* var. *capitatum*, *Cremaspora triflora* subsp. *confluens*, *Crotonogynopsis usambarica*, *Didymosalpinx norae*, *Dorstenia kameruniana*, *Ixora tanzaniensis*, *Justicia interrupta*, *Leptactina platyphylla*, *Maytenus undata*, *Memecylon* aff. *myrtillodes*, *Olex gambecola*, *Pavetta ?mzeleziensis*, *P. stenosepala* subsp. *kisarawensis*, *Pleioceras orientale*, *Psychotria schliebenii*, *Psydrax livida*, *Rhus natalensis*, *Rinorea arborea*, *R. ferruginea*, *R. subintegriifolia*, *Sclerochiton obtusisepalus*, *Sloetiopsis usambarensis*, *Tarenna pavettiodes* subsp. *affinis*, *Tricalysia pallens*.

LIANES AND CLIMBERS: *Cissus producta*, *Cnestis confertiflora*, *Culcasia orientalis*, *Entada pursaetha*, *Oncinotis tenuiloba*, *Rhoicissus revoli*, *Salacia lovettii*, *Strychnos angolensis*, *Tetracera* cf. *litoralis*.

HERBS: *Aeolanthus holstii*, *Begonia wakefieldii*, *Brillantaisia madagascariensis*, *Bulbophyllum concatenatum*, *Cheirostylis lepida*, *Chlorophytum sparsiflorum*, *Coelachne africana*, *Crassocephalum crepidioides*, *Diodia sarmentosa*, *Disperis uzungwae*, *Geophila obvallata* subsp. *iodes*,

Habenaria trilobulata, *Impatiens joachimii*, *I. walleriana*, *Justicia glabra*, *J. interrupta*, *Lobelia cymbalarioides*, *L. inconspicua*, *Marantochloa leucantha*, *Mellera lobulata*, *Oldenlandia affinis*, *O. corymbosa* var. *caespitosa*, *Olyra latifolia*, *Pentas longituba*, *Phaulopsis imbricata*, *Pseuderanthemum tunicatum*, *Puelia olyrifor-
mis*, *Saintpaulia ionantha*, *Scadoxus multiflorus*, *Scleria isostephana*, *S. racemosa*, *Sclerochiton obtusisepalus*, *Sida urens*, *Solanecio angulatus*, *Streptocarpus glandulosissimus*, *Utricularia striatula*.

ZANZIBAR—INHAMBANE TRANSITIONAL RAIN FOREST

Altitudinal range 750–1,200 m. Canopy height 25–30 m with emergents to 40 m tall. Taller trees are found in the valley bottoms than on the ridge tops. Middle and shrub layer well developed. Herb layer sparse except in disturbed areas, where it is dominated by a dense growth of Zingiberaceae and Piperaceae.

TREES: *Afrosersalisia cerasifera*, *Aidia micrantha* var. *msonju*, *Albizia adianthifolia*, *A. gum-
mifera*, *Allanblackia stuhlmannii*, *Aningeria pseudoracemosa*, *Anisophylla obtusifolia*, *Anonaceae* gen. nov., *Anthocleista grandifolia*, *Antiaris toxicaria*, *Antidesma vogelianum*, *Beilschmiedia kweo*, *Cassia angolensis*, *Cassipourea gummiiflua*, *Celtis africana*, *Cephalosphaera usambarensis*, *Chrysophyllum gorungosanum*, *C. cf. lanceolatum*, *Cleistanthus polystachyus*, *Cola uloloma*, *Croton sylvaticus*, *Dalbergia boehmii* subsp. *boehmii*, *Dialium holtzii*, *Diospyros amaniensis*, *D. cf. troupinii*, *Dracaena usambarensis*, *Drypetes cf. arguta*, *D. reticulata*, *D. cf. roxburghii*, *D. usambarica* var. *trichogyna*, *Eugenia capensis*, *Funtumia africana*, *Garcinia volkensii*, *Glenniea africana*, *Grewia cf. barombiensis*, *Heinsenia diervilleoides*, *Homalium longistylum*, *Isolona hexaloba*, *Ixora scheffleri*, *Lagynias rufescens* subsp. *angustilobus*, *Leptactina platyphylla*, *Macaranga capensis* var. *capensis*, *Maesa lanceolata*, *Maranthes goetzeniana*, *Maytenus acuminata*, *Memecylon ?brenanii*, *Memecylon* sp. nov., *Mesogyne insignis*, *Milicia excelsa*, *Milletia ?elongistyla*, *Mimusops aedificatoria*, *Myrianthus holstii*, *Newtonia buchananii*, *Ochna holstii*, *Octoknema orientalis*, *Odyndea zimmermannii*, *Omphalocarpum* sp. nov., *Pancovia golungensis*, *Parinari excelsa*, *Parkia filicoidea*, *Phyllanthus inflatus*, *Polyceratocarpus scheffleri*, *Porterandia penduliflora*, *Rawsonia lucida*, *Rothmannia*

urcelliformis, *Sapium ellipticum*, *Sibangea pleioneura*, *Sorindeia madagascariensis*, *Strombosia scheffleri*, *Syzygium guineense* subsp. *afromontanum*, *Tabernaemontana pachysiphon*, *Tarennia pavettoides* subsp. *affinis*, *Trichilia dregeana*, *Trichoscypha ulugurensis*, *Trilepisium madagascariense*, *Uapaca paludosa*, *Vangueriopsis longiflora*, *Xylopia aethiopica*, *X. parvifolia*, *Xymalos monospora*, *Zanha golungensis*.

SMALL TREES AND SHRUBS: *Acalypha psilostachya* var. *psilostachya*, *Alchornea laxiflora*, *Allophylus pervillei*, *Baissea* sp., *Brachystephanus africanus*, *Campylospermum reticulatum*, *Carpolobia* cf. *goetzei*, *Chassalia discolor*, *Clausena anisata*, *Dicranolepis usambarica*, *Dracaena laxissima*, *Erythrococca polyandra*, *Lagynias rufescens* subsp. *angustiloba*, *Lasianthus* sp. nov., *Leptonychia usambarensis*, *Lobelia longisepala*, *Mostuea brunonis* var. *brunonis*, *Ormocarpum* sp. nov., *Oxyanthus pyriformis* subsp. *tanganyikensis*, *O. speciosus* subsp. *stenocarpus*, *Pancovia holtzii*, *Pauridiantha* sp. nov., *Pavetta* sp., *Piper capense*, *P. umbellatum*, *Psychotria lauracea*, *P. schliebenii*, *P. tanganyicensis* var. *ferruginea*, *Pyrostria* sp. nov., *Rauvolfia mannii*, *Rhus longipes*, *Rinorea ferruginea*, *R. ilicifolia* var. *amplexicaulis*, *R. subintegrifolia*, *Schizogygia coffaeoides*, *Tricalysia pallens*, *T.* sp. nov.

LIANES AND CLIMBERS: *Agelaea heterophylla*, *Baissea myrtifolia*, *Culcasia falcifolia*, *Keetia venosa*, *Monanthotaxis buchananii*, *Salacia lovettii*, *S. madagascariensis*, *Tetracera* cf. *litoralis*, *Uncaria africana* var. *africana*, *Uvaria tanzaniae*.

HERBS: *Alectra kirkii*, *Begonia oxyloba* var. *kummeriae*, *Cheirostylis lepida*, *Costus subbiflorus*, *Dorstenia tayloriana* var. *laikipiensis*, *D. warneckei*, *Geniosporum africanum*, *Impatiens confusa* subsp. *longicornu*, *Isoglossa lactea*, *Justicia* aff. *nyassana*, *J. pseudorungia*, *Leptaspis cochleata*, *Lobelia baumannii*, *L. inconspicua*, *Peperomia molleri*, *P. rotundifolia*, *Plectranthus* sp. = *Schlieben 4215*, *Pollia condensata*, *Rungia* sp. ?nov., *Solenostemon* sp. = *Mwasumbi 2720*, *Sphaerostephanos arbuscula* subsp. *africanus*, *Stenandriopsis warneckei*, *Streptocarpus caulescens* var. *pallescens*, *Utricularia livida*.

HEMIPARASITES: *Englerina inaequilatera*.

AFROMONTANE RAIN FOREST

For ease of data presentation, Afromontane Rain Forest is taken here to include the forest type

defined as Afromontane Undifferentiated Forest by White (1983). Altitudinal range 1,200–1,700 m. In valleys and sheltered areas canopy height 25–30 m with emergents to 35 m tall. On ridges and exposed sites canopy height 15–25 m. Middle and shrub layers well developed in tall forest, middle layer not pronounced in exposed forest. Herb layer sparse in tall forest, dominated by Acanthaceae and Gramineae in more open areas.

TREES: *Agauria salicifolia* var. *pyrifolia*, *Albizia gummifera*, *Allanblackia stuhlmannii*, *A. ulugurensis*, *Alsodeiopsis schumannii*, *Aphloia theiformis*, *Beilschmiedia kweo*, *Bequaertiodendron magalismontanum*, *Bersama abyssinica*, *Brachylaena huillensis*, *Bridelia brideliifolia*, *Caloncoba welwitschii*, *Canthium captum*, *Casearia battiscombei*, *Cassipourea gummiflua*, *C. malosana*, *Chrysophyllum gorungosanum*, *Cleistanthus polystachyus*, *Coffea mongensis*, *Cola greenwayi*, *Craibia brevicaudata* subsp. *brevicaudata*, *Craterispermum longipedunculatum*, *Cryptocarya liebertiana*, *Diospyros amaniensis*, *Drypetes* cf. *arguta*, *Faurea saligna*, *Ficalhoa laurifolia*, *Garcinia kingaensis*, *G. volkensii*, *Heinsenia diervilleoides*, *Hirtella megacarpa*, *Isoberlinia scheffleri*, *Isolona hexaloba*, *Ixora scheffleri* subsp. *scheffleri*, *Lasiodiscus usambarensis* var. *usambarensis*, *Macaranga capensis* var. *kilimandscharica*, *Maesa lanceolata*, *Maranthes goetziana*, *Maytenus acuminata*, *Memecylon* ?*brenanii*, *M.* aff. *semsei*, *Myrianthus holstii*, *Myrica salicifolia*, *Mystroxydon aethiopicum*, *Newtonia buchananii*, *Ochna holstii*, *O. kenyensis*, *Ocotea usambarensis*, *Olea capensis*, *Olinia rochetiana*, *Ouratea schusteri*, *Parinari excelsa*, *Pauridiantha paucinervis* subsp. *holstii*, *Phoenix reclinata*, *Polyceratocarpus scheffleri*, *Polyscias fulva*, *Psychotria* aff. *trichoclada*, *Psydrax parviflora* subsp. *rubrocostata*, *Rapanea melanophloeos*, *Rawsonia reticulata*, *Schrebera alata*, *Strombosia scheffleri*, *Strychnos mellodora*, *S. mitis*, *Syzygium cordatum*, *S. guineense* subsp. *afromontanum*, *S. masukuense*, *Trichocladus goetzei*, *Trichoscypha ulugurensis*, *Uvarioidendron* sp. nov., *Uvariopsis bisexualis*, *Vepris stolzii*, *Xylopia aethiopica*, *Xymalos monospora*, *Zanha golungensis*, *Zanthoxylum* sp.

SMALL TREES AND SHRUBS: *Acanthopale pubescens*, *Aidia micrantha* var. *msonju*, *Allophylus macrobotrys*, *Apodytes dimidiata* subsp. *acutifolia*, *Bertiera pauloi*, *Brillantaisia nyanzarum*, *Casearia gladiiformis*, *Chassalia parvifolia*, *Clusia abyssinica* var. *abyssinica*, *Coffea mufindien-*

sis, *Craterispermum longipedunculatum*, *Crotalaria unicella*, *Crotonogynopsis usambarica*, *Dissotis princeps* var. *princeps*, *Erythrococca sanjensis*, *E. ulugurensis*, *Garcinia volkensii*, *Isoglossa bracteosa*, *Lasianthus kilimandscharicus* subsp. *kilimandscharicus*, *L. peduncularis*, *Lasiodiscus usambarensis* var. *usambarensis*, *Lep-tonychia usambarensis*, *Maytenus mossambicensis* subsp. *mossambicensis*, *M. undata*, *Memecylon* aff. *amaniense*, *Memecylon* sp. nov., *Micrococca* cf. *holstii*, *Mimulopsis arborescens*, *M. kilimandscharica*, *Pauridiantha paucinervis* subsp. *holstii*, *P.* sp. nov., *Pavetta lynesii*, *P. mshigeniana*, *P. nitidissima*, *P. stenosepala* subsp. *kisarawensis*, *Peddiea polyantha*, *Pseuderanthemum campylosiphon*, *Psychotria cryptogrammata*, *P. faucicola*, *P. goetzei*, *P. megalopus*, *P. zombamontana*, *P.* sp. nov., *Rauvolfia mannii*, *Rinorea arborea*, *Rytigynia caudatissima*, *R. hirsutiflora*, *R. lichenoxenos* subsp. *glabrituba*, *Sclerochiton obtusisepalus*, *Sericanthe odoratissima* var. *ulugurensis*, *Solanum* aff. *schumannianum*, *Strychnos myrtoides*, *Tarenna uzungwaensis*, *Teclea nobilis*, *Tricalysia pallens*, *Trichilia* sp. nov., *Turrea holstii*, *Uvariopsis* sp. ?nov., *Xymalos monospora*.

LIANES AND CLIMBERS: *Asparagus asparagoides*, *Embelia schimperi*, *Schefflera myriantha*, *Tiliacora funifera*.

HERBS: *Aframomum laxiflorum*, *Alectra kirkii*, *Anisosepalum humbertii*, *Ardisiandra sibthorpioides*, *Begonia* sp. ?nov., *Bulbophyllum* cf. *imbricatum*, *Cheirostylis lepida*, *Cinnabotrys oreophila*, *Cyperus pseudoleptocladus*, *Disperis elaphoceras*, *Dissotis polyantha*, *Dorstenia denticulata*, *D. holstii*, *D. schliebenii*, *Gladiolus rupicola*, *Gymnosiphon usambaricus*, *Impatiens joachimii*, *I. kentrodonta*, *I. rubromaculata* subsp. nov., *I.* sp. nov. aff. *rubromaculata*, *Isoglossa lactea*, *Justicia pseudorungia*, *Liparis* sp. ?nov., *Lobelia baumannii*, *Medinilla engleri*, *Oldenlandia rupicola*, *Plectranthus* sp., *Polystachya ulugurensis*, *Saintpauliopsis lebrunii*, *Sclerochiton obtusisepalus*, *Seychellaria africana*, *Solenostemon* sp., *Streptocarpus glandulosissimus*.

HEMIPARASITES: *Englerina inaequilatera*.

RIDGE TOP FOREST

Altitude 1,760 m. Canopy height 3–6 m. Middle layer absent, the shrub layer composed of many small-diameter poles when under the canopy. Herb layer sparse under canopy, in open areas domi-

TABLE 1. *Taxa recently described from Mwanihana Forest Reserve.*

<i>Disperis elaphoceras</i> Verdc.
<i>D. uzungwae</i> Verdc.
<i>Drypetes usambarica</i> (Pax) Hutch. var. <i>trichogyna</i> A. R.-Sm.
<i>Erythrococca sanjensis</i> A. R.-Sm.
<i>Lagynias rufescens</i> (E. A. Bruce) subsp. <i>angustiloba</i> Verdc.
<i>Pavetta nitidissima</i> Bridson
<i>Rytigynia caudatissima</i> Verdc.
<i>R. hirsutiflora</i> Verdc.
<i>Salacia lovetii</i> Halle & B. Mathew
<i>Seychellaria africana</i> Vollesen
<i>Tarenna uzungwaensis</i> Bridson
<i>Uvaria tanzaniae</i> Verdc.
<i>Uvariopsis bisexualis</i> Verdc.

nated by Gramineae and Pteridophyta. Rich epiphytic bryophyte cover.

TREES: *Afrosersalisia* sp. ?nov., *Allanblackia ulugurensis*, *Aphloia theiformis*, *Apodytes dimidiata* subsp. *acutifolia*, *Bequaertiodendron magalismontanum*, *Cryptocarya liebertiana*, *Diospyros whyteana*, *Faurea saligna*, *Garcinia kingaensis*, *Isobertia scheffleri*, *Maytenus acuminata*, *Newtonia buchananii*, *Ochna holstii*, *Ocotea kenyensis*, *O. usambarensis*, *Olea capensis*, *Olinia rochetiana*, *Rapanea melanophloeos*, *Strychnos mitis*, *Syzygium cordatum*, *Ternstroemia polypetala* var. ?nov., *Trichocladus goetzei*.

SMALL TREES AND SHRUBS: *Agauria salicifolia* var. *pyrifolia*, *Clutia abyssinica* var. *abyssinica*, *Inula stuhlmannii*, *Pauridiantha paucinervis* subsp. *holstii*, *Phyllanthus hutchinsonianus*.

LIANES AND CLIMBERS: *Schefflera myriantha*.

HERBS: *Cryptotaenia calycina*, *Cynorkis anacamptoides*, *C. buchwaldiana* subsp. *braunii*, *C. pleistadenia*, *Polystachya cultriformis*, *P. ?goetzeana*, *P. melantha*, *P. transvaalensis*, *Saintpauliopsis lebrunii*, *Solanecio epidendricus*, *Stolzia leedalii*, *S. nyassana*, *Streptocarpus caulescens* var. *pallescens*, *Tridactyle* sp. nov., *T. sp. nov.* = *Leedal* 6138.

HEMIPARASITES: *Thesium triflorum*.

DISCUSSION

The moist forests of eastern Tanzania and south-eastern Kenya are well known for the high number of species that are found only in that area (Lovett, 1988; Rodgers & Homewood, 1982b). The Mwanihana Forest Reserve is no exception, and a number of new species have been described recently from the locality (Table 1). Many other species are

TABLE 2. *Taxa in the Mwanihana Forest Reserve currently inadequately known to be described, or taxonomic research not yet completed. The following abbreviations are used to refer to collectors: DT = Duncan Thomas, DB = Diane Bridson, RP = Roger Polhill, JL = Jon Lovett. sn = sine numero sterile collections from the ecological survey.*

<i>Afrosersalisia</i> sp. ?nov., JL sn
Annonaceae ?gen. nov. = Ede 65, JL sn
<i>Begonia</i> sp. ?nov., DT 3797
<i>Bulbophyllum</i> cf. <i>imbricatum</i> , DT 3876
<i>Carpolobia</i> cf. <i>goetzei</i> , DT 3758
<i>Diospyros</i> cf. <i>troupinii</i> , JL sn
<i>Drypetes</i> aff. <i>arguta</i> , DT 3913
<i>Grewia</i> cf. <i>barombiensis</i> , DT 3747
<i>Impatiens joachimii</i> var. ?nov., DB 602, DT 3798, JL 271
<i>I. aff. rubromaculata</i> , DT 3846
<i>Justicia</i> aff. <i>nyassana</i> , DB 644
<i>Lasianthus</i> sp. nov., DB 650, DT 3759, JL 235
<i>Liparis</i> sp. ?nov., DT 3874
<i>Memecylon</i> aff. <i>amaniense</i> , DT 3850
<i>M. aff. brenanii</i> , DT 3760, DT 3916
<i>M. aff. myrtilloides</i> , RP 5118
<i>M. aff. semsei</i> , DT 3702
<i>M. sp. nov.</i> , DT 3773
<i>M. sp. nov.</i> , JL 215
<i>Omphalocarpum</i> sp. nov., DT 3652
<i>Ormocarpum</i> sp. nov., JL 384
<i>Pauridiantha</i> sp. nov., DB 648, DT 3680B, DT 3778, DT 3826, DT 3841
<i>Pavetta</i> sp. nov., JL 291
<i>Placodiscus</i> aff. <i>amaniensis</i> , DT 3724
<i>Plectranthus</i> sp., DT 3823
<i>P. sp.</i> = <i>Schlieben</i> 4215, DB 640
<i>Psychotria</i> aff. <i>trichoclada</i> , DT 3836
<i>P. sp. nov.</i> , JL 294
<i>Rawsonia</i> aff. <i>lucida</i> , DT 3638, DT 3966
<i>Rinorea</i> aff. <i>arborea</i> , DT 3894
<i>Rungia</i> sp. ?nov., DT 3625
<i>Solanum</i> aff. <i>schumannianum</i> , DT 3896
<i>Solenostemon</i> sp. = <i>Mwasumbi</i> 2720, DB 641, DT 3771
<i>Tricalysia</i> sp. nov., DB 647
<i>Trichilia</i> sp. nov., JL 232
<i>Tridactyle</i> sp. nov., DT 3763A
<i>T. sp. nov.</i> = <i>Leedal</i> 6138, DT 3764
<i>Uvariadendron</i> sp. nov., JL 222
<i>Uvariopsis</i> sp. nov., DT 3921

inadequately known and more material is needed (Table 2). Undoubtedly further exploration will reveal still more novelties.

The occurrence of species in the Mwanihana Reserve that are only found on other similar mountains demonstrates that the forests of the ancient crystalline mountains of eastern Tanzania form a distinct floristic unit. Examples include *Angylocalyx braunii*, *Aningeria pseudoracemosa*, *Anisophyllea obtusifolia*, *Cephalosphaera usambarensis*, *Allanblackia stuhlmannii*, *Beilschmiedia kweo*, *Isobertia scheffleri*, *Newtonia pau-*

cijuga, *Polyceratocarpus scheffleri*, and *Saintpaulia ionantha*.

The forests also have links with west and central Africa. For example, the species *Cinnobotrys oreophila*, *Crotonognopsis usambarica*, *Isolona hexaloba*, *Olex gambecola*, *Puelia olyrifolmis*, *Rinorea subintegrifolia*, *Saintpauliopsis lebrunii*, *Schefflerodendron usambarensense*, and *Uapaca paludosa* are also found west of the arid corridor that separates the moist forests of eastern Tanzania from the Guineo-Congolian region. At a generic level *Enantia kummeriae*, *Uvariopsis bisexualis*, *Octoknema orientalis*, and *Polyceratocarpus scheffleri* are all restricted to eastern Tanzania but are of predominantly Guineo-Congolian genera.

Links to forests in the south are found in species such as *Diospyros whyteana* and *Syzygium masukuense*, while affinities with Madagascar and the Indian Ocean islands are found in the genera *Aphloia*, *Ludia*, and *Seychellaria*.

The reason for the high level of endemism in the eastern Tanzanian moist forests on ancient crystalline mountains is not difficult to explain. The mountains have probably been in existence since the Cretaceous (Sowerbutts, 1972), and Africa reached its present latitudinal position by the Oligocene (Axelrod & Raven, 1978). The area would therefore have been under the influence of a moist tropical climate for at least 40 million years. During the last 500,000 years there have been periods of pronounced aridity in continental Africa that correspond to glacial maxima (Imbrie & Imbrie, 1980; Pokras & Mix, 1987). During the last glacial maximum (18,000 years B.P.), the temperature of the equatorial Atlantic dropped 4–5°C (van Zinderen Bakker, 1982), whereas that of the Indian Ocean in the area of eastern Tanzania was similar to that at present (Prell et al., 1980). This suggests that during the last glacial maximum the climate of eastern Tanzania was similar to that at present, whereas west and central Africa went through a period of pronounced aridity with a corresponding reduction of forest area (Hamilton, 1982). If this situation reflects that of earlier glacial maxima, then the forests of eastern Tanzania have been remarkably stable in comparison with most of the Guineo-Congolian forests.

Consequently the high level of endemism can be explained by either the extinction of species over much of their range during periods of aridity but their survival in the eastern Tanzanian forests, or by evolution by isolation in the climatically stable eastern forests.

More difficult to explain are the affinities of the eastern Tanzanian forests with the Guineo-Congolian region and Madagascar. It is unclear how

far these are the results of long-distance dispersal or relicts of continuous forest links.

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APPENDIX I

Systematic list of collections. The following abbreviations are used to refer to collectors: DT = Duncan Thomas, DB = Diane Bridson, RP = Roger Polhill, JL = Jon Lovett. sn = *sine numero* sterile collections from the ecological survey.

ANGIOSPERMAE, DICOTYLEDONS

ACANTHACEAE

- Acanthopale pubescens* C. B. Cl., RP 5147
Anisosepalum humbertii (Mildbr.) E. Hossain, DT 3825, JL 299
Brachystephanus africanus S. Moore, DT 3684

Brillantaisia madagascariensis Lindau, DB 610
B. nyanzarum Burkhil, DT 3790
Isoglossa bracteosa Mildbr., RP 5146
I. lactea Lindau s.l., DB 643, DT 3839
I. sp. ?nov., JL 194
Justicia glabra Roxb., JL 281
J. interrupta (Lindau) C. B. Cl., DT 3664, RP 5124
J. aff. nyassana Lindau, DB 644
J. pseudorungia Lindau, DB 646, JL 316
Mellera lobulata S. Moore, DB 592, RP 5156
Mimulopsis arborescens C. B. Cl., DT 3789
M. kilimandscharica Lindau, RP 5149
M. solmsii Schweinf., RP 5148
Phaulopsis imbricata (Forsskal) Sweet, DB 593
Pseuderanthemum campylosiphon Mildbr., RP 5145
P. tunicatum (Afz.) Milne-Redh., DT 3671, JL 186, RP 5115
Rungia sp. ?nov., DT 3625
Saintpauliopsis lebrunii Staner, DT 3805, DT 3898, JL 310
Sclerochiton obtusisepalus C. B. Cl., DB 591, DB 618, DT 3674, DT 3905, JL 315, RP 5114
Stenandariopsis warneckei (S. Moore) Napper, JL 274
Whitfieldia elongata (P. Beauv.) C. B. Cl., DT 3663, RP 5120

ANACARDIACEAE

Rhus longipes Engl., DT 3653, DT 3953
R. natalensis Krauss, DT 3669
Sorindeia madagascariensis DC., DB 639, DB 639A, DT 3610, DT 3639, JL 190
Trichoscypha ulugurensis Mildbr., JL 180

ANNONACEAE

Enantia kummeriae Engl. & Diels, JL sn
Isolona hexaloba (Pierre) Engl. & Diels, RP 5143
I. sp., DT 3899
Lettowianthus stellatus Diels, DT 3753, DT 3937
Monanthotaxis buchananii (Engl.) Verdc., DT 3624, DT 3644
Monodora grandidieri Baill., JL sn
Polyceratocarpus scheffleri Engl. & Diels, DT 3656, DT 3698
Uvaria tanzaniae Verdc., DT 3641
Uvariendron gorgonis Verdc., JL sn
U. sp. nov., JL 222
Uvariopsis bisexualis Verdc., DT 3921, JL 233
Xylopi aethiopica (Dunal) A. Rich., JL sn
X. parviflora (A. Rich.) Benth., JL sn
Annonaceae gen. nov. = Ede 65, JL sn

APOCYNACEAE

Baissea myrtifolia (Benth.) Pichon, DT 3645
Carvalhoa campanulata K. Schum., JL 183
Funtumia africana (Benth.) Stapf, DT 3741
Oncinotis tenuiloba Stapf, DT 3718
Pleioceras orientale Vollesen, JL 179
Rauwolfia mannii Stapf, DT 3791, JL 212
Schizogygia coffaeoides Baill., DB 645, DT 3754
Strophanthus petersianus Klotzsch, DB sn
Tabernaemontana pachysiphon Stapf, JL 211

ARALIACEAE

Polyscias fulva (Hiern) Harms, JL sn
Schefflera myriantha (Baker) Drake, JL sn

BALSAMINACEAE

Impatiens confusa Grey-Wilson subsp. *longicornu* Grey-Wilson, DT 3618
I. joachimii G. M. Schulze var. ?nov., DB 602, DT 3798, JL 271
I. kentrodonta Gilg, DT 3672, DT 3772
I. rubromaculata Warb., subsp. nov., DT 3769
I. aff. rubromaculata Warb., DT 3846
I. walleriana Hook. f., DB 603

BEGONIACEAE

Begonia oxyloba Welw. var. *kummeriae* (Gilg) Irmscher, DT 3617
B. wakefieldii Gilg, JL 272
B. sp. ?nov., DT 3797

BIGNONIACEAE

Stereospermum kunthianum Cham., JL sn

BOMBACACEAE

Rhodognaphalon schumannium A. Robyns, JL sn

CELASTRACEAE

Maytenus acuminata (L. f.) Loess, DT 3643, DT 3810
M. mossambicensis (Klotzsch) Blakelock var. *mossambicensis*, DT 3903
M. undata (Thunb.) Blakelock, DB 601, DB 628, RP 5152, JL 187
Mystroxydon aethiopicum (Thunb.) Loes, DT 3879, DT 3902
Salacia erecta (G. Don) Walp., DB sn
S. lovettii Halle & B. Mathew, DB 638, DB 655, JL 216
S. madagascariensis (Lam.) DC., DT 3642

CHRYSOBALANACEAE

Hirtella megacarpa R. Graham, DT 3901
Maranthes goetzeniana (Engl.) Prance, JL sn
Parinari excelsa Sabine, JL sn

COMBRETACEAE

Pteleopsis myrtifolia (Laws.) Engl. & Diels, JL sn
Terminalia sambesica Engl. & Diels, DT 3719

COMMELINACEAE

Pollia condensata C. B. Cl., JL 279

COMPOSITAE

Brachylaena huillensis O. Hoffm., JL sn
Crassocephalum crepidioides (Benth.) S. Moore, DB 621
Inula stuhlmannii O. Hoffm., DT 3928
Solanecio angulatus (Vahl) C. Jeffrey, DB 620
S. epidendricus (O. Hoffm.) C. Jeffrey, DT 3840, DT 3847B

CONNARACEAE

Agelaea heterophylla Gilg, JL sn
Cnestis confertiflora Gilg, JL sn

DICHAPETALACEAE

Dichapetalum stuhlmannii Engl., DT 3728

DILLENIACEAE

Tetracera cf. *litoralis* Gilg, DB 594, DT 3632

EBENACEAE

Diospyros amaniensis Guerke, DT 3788
D. brucei F. White, JL sn
D. mespiliformis Hochst. ex A. DC., JL sn
D. cf. troupinii F. White, JL sn
D. whyteana (Hiern) F. White, DT 3927
D. zombensis (B. L. Burt) F. White, JL sn

ERICACEAE

Agauria salicifolia (Lam.) Oliver var. *pyrifolia* (Pers.)
Oliver, DT 3926, JL 3096

EUPHORBIACEAE

Acalypha psilostachya Hochst. ex A. Rich. var. *psilostachya*, DT 3690
Alchornea laxiflora (Benth.) Pax & K. Hoffm., DT 3636
Antidesma vogelianum Muell. Arg., DT 3752
Bridelia brideliifolia (Pax) Fedde, DT 3900
Cleistanthus polystachyus Hook. f. ex Planchon, JL sn
Clutia abyssinica Jaub. & Spach var. *abyssinica*, DT 3707, DT 3708, JL 300
Croton macrostachyus Hochst. ex Del., JL sn
C. cf. megalocarpoides Friis & M. Gilbert, DT 3727
C. sylvaticus Hochst. ex Krauss, DT 3756
Crotonogynopsis usambarica Pax, DT 3761, DT 3924, RP 5129
Drypetes natalensis (Harvey) Hutch., JL sn
D. reticulata Pax, JL sn
D. usambarica (Pax) Hutch. var. *trichogyna* A. R.-Sm., JL 219
D. ?arguta (Muell. Arg.) Hutch., DT 3913
D. cf. roxburghii (Wall.) Hurusawa, JL sn
Erythrococca polyandra (Pax & K. Hoffm.) Prain, DT 3751
E. sanjensis A. R.-Sm., DT 3677, DT 3774, DT 3775, DT 3782, DT 3783
E. ulugurensis A. R.-Sm., DT 3762, DT 3770
Macaranga capensis Baill. var. *capensis*, DT 3739
M. capensis Baill. var. *kilimandscharica* (Pax) Friis & M. Gilbert, JL sn
Micrococca cf. *holstii* (Pax) Prain, DT 3833
Phyllanthus hutchinsonianus S. Moore, DT 3803
P. inflatus Hutch., DT 3609, JL 181
Ricinodendron heudelotii (Baill.) Pierre ex Pax, JL sn
Sapium ellipticum (Hochst.) Pax, JL sn
Sibangea pleioneura A. R.-Sm., DT 3651, JL 221
Suregada zanzibariensis Baill., DT 3613
Uapaca paludosa Aubrév. & Léandri, JL sn

FLACOURTIACEAE

Aphloia theiformis (Vahl.) Benn., DT 3705
Caloncoba welwitschii (Oliver) Gilg, JL sn
Casearia battiscombei R. E. Fr., JL sn
C. gladiiformis Mast., DT 3776
C. ?runssorica Mildb., DT 3773, DT 3755
Homalium longistylum Mast., JL sn
Ludia mauritiana Gmelin, Dt 3936
Rawsonia lucida Harvey & Sonder, DT 3650
R. aff. lucida Harvey & Sonder, DT 3638, DT 3966
R. reticulata Gilg, DT 3835, JL 290

GESNERIACEAE

Saintpaulia ionantha H. Wendl., RP 5130
Streptocarpus caulescens Vatke var. *pallescens* Engl., DT 3620, DT 3847
S. glandulosissimus Engl., DB 604, DT 3848, RP 5155

GUTTIFERAE

Allanblackia stuhlmannii (Engl.) Engl., JL sn
A. ulugurensis Engl., JL sn
Garcinia buchananii Baker, JL sn
G. kingaensis Engl., DT 3853
G. volkensii Engl., DT 3649, DT 3912
Harungana madagascariensis Poirét, JL sn

HAMAMELIDACEAE

Trichocladus goetzei Engl., JL sn

ICACINACEAE

Alsodeiopsis schumannii (Engl.) Engl., DT 3915
Apodytes dimidiata E. Meyer ex Arn. subsp. *acutifolia* (Hochst. ex A. Rich.) Cuf., DT 3715, DT 3766

LABIATAE

Achyrospermum carvalhi Guerke, DB 598
Aeolanthus holstii Guerke s.l., DB 617
Geniosporum africanum P. Beauv., DB 635
Plectranthus sp., DT 3823
P. sp. = *Schlieben* 4215, DB 640
Solenostemon sp. ? = *Mwasumbi* 2720, DB 641, DT 3771

LAURACEAE

Beilschmiedia kweo (Mildbr.) A. Robyns & Wilczek, DT 3882
Cryptocarya liebertiana Engl., JL sn
Ocotea kenyensis (Chiov.) A. Robyns & Wilczek, DT 3907
O. usambarensis Engl., JL 301

LEGUMINOSAE

Caesalpinioideae

Brachystegia microphylla Harms, DT 3612
Cassia angolensis Hiern, JL sn
Dialium holtzii Harms, DT 3732, DT 3740
Erythrophleum suaveolens (Guill. & Perr.) Brenan, JL sn
Isobertlinia scheffleri (Harms) Greenway, JL sn
Paramacrolobium coeruleum (Taubert) Leonard, JL sn

Mimosoideae

Albizia adianthifolia (Schumach.) W. F. Wight, DT 3646
A. glaberrima (Schumach. & Thonn.) Benth. var. *glabrescens* (Oliver) Brenan, DT 3734
A. gummifera (J. Gmelin) C. A. Sm., DT 3735A, DT 3736
A. zimmermannii Harms, DT 3640, DT 3731
Entada pursaetha DC., JL sn
Newtonia buchananii (Baker) Gilb. & Bout., JL sn
N. paucijuga (Harms) Brenan, DT 3723
Parkia filicoidea Welw. ex Oliver, DT 3735

Papilionoideae

- Angylocalyx braunii* Harms, DT 3729
Baphia semseiana Brummitt, DT 3668
Craibia brevicaudata (Vatke) Dunn subsp. *brevicaudata*, DT 3730
Crotalaria unicella Lam., RP 5139
Dalbergia boehmii Taub. subsp. *boehmii*, DT 3623
Millettia ?elongatistyla Gillett, DT 3746
Ormocarpum sp. nov., JL 384
Pterocarpus mildbraedii Harms subsp. *usambarensis* (Verdc.) Polh., JL sn
Schefflerodendron usambarense Harms, JL sn

LENTIBULARIACEAE

- Utricularia livida* E. Meyer, DT 3648
U. striatula Sm., DB 605, RP 5121

LOBELIACEAE

- Lobelia baumannii* Engl., DB 642, DT 3804
L. cyambalarioides Engl., DB 606
L. inconspicua A. Rich., DB 607, DT 3621
L. longispala Engl., DT 3616

LOGANIACEAE

- Anthocleista grandiflora* Gilg, JL sn
Mostuea brunonis Didr. var. *brunonis*, DT 3637
Strychnos angolensis Gilg, JL 276
S. mellodora S. Moore, JL sn
S. mitis S. Moore, JL sn
S. myrtoides Gilg & Busse, DT 3829

LORANTHACEAE

- Englerina inaequilatera* (Engl.) Balle ex Polh. & Wiens, DT 3830, JL 288, JL 299

MALVACEAE

- Sida urens* L., DB 633

MELASTOMATACEAE

- Cinnabotrys oreophila* Gilg, DT 3877
Dissotis polyantha Gilg, DT 3794
D. princeps (Kunth.) Triana var. *princeps*, RP 5141
Medinilla ?engleri Gilg, DT 3832
Memecylon ?brenanii A. & R. Fernandes, DT 3760, DT 3916
M. aff. amaniense (Gilg) A. & R. Fernandes, DT 3850
M. aff. myrtilloides Markgraf, RP 5118
M. aff. semsei A. & R. Fernandes, DT 3702
M. sp. nov. DT 3773
M. sp. nov. JL 215

MELIACEAE

- Khaya nyasica* Stapf ex Baker f., JL sn
Trichilia dregeana Sonder, JL sn
T. sp. nov., JL 232
Turraea holstii Guerke, DT 3714

MELIANTHACEAE

- Bersama abyssinica* Fresen., JL sn

MENISPERMACEAE

- Tiliacora funifera* (Miers) Oliver, DT 3914

MONIMIACEAE

- Xymalos monospora* (Harvey) Baill., DT 3786, DT 3787, DT 3843

MORACEAE

- Antiaris toxicaria* Lesch., JL sn
Dorstenia denticulata A. Peter, RP 5151
D. holstii Engl., RP 5153
D. kameruniana Engl., RP 5119
D. schliebenii Mildbr., DT 3796
D. tayloriana Rendle var. *laikipiensis* (Rendle) Hijman, JL 213
D. warneckei Engl., DT 3660
Ficus cyathistipula Warb. subsp. *cyathistipula*, DT 3666
F. kirkii Hutch., JL sn
F. lutea Vahl, JL sn
F. quibeba Welw. ex Ficalho, JL 184
F. sur Forsskal, JL sn
F. thonningii Blume, JL sn
Mesogyne insignis Engl., JL 231
Milicia excelsa (Welw.) Berg, JL sn
Myrianthus holstii Engl., DT 3757
Sloetiopsis usambarensis Engl., DT 3670, DT 3726
Treculia africana Decne., JL sn
Trilepisium madagascariensis DC., JL sn

MYRICACEAE

- Myrica salicifolia* Hochst. ex A. Rich., JL sn

MYRISTICACEAE

- Cephalosphaera usambarensis* (Warb.) Warb., DT 3619

MYRSINACEAE

- Embelia schimperi* Vatke, JL sn
Maesa lanceolata Forsskal, DT 3897
Rapanea melanophloeos (L.) Mez, JL sn

MYRTACEAE

- Eugenia capensis* (Ecklon & Zeyher) Sonder, JL sn
Syzygium cordatum Hochst. ex Krauss, JL sn
S. guineense (Willd.) DC. subsp. *afromontanum* F. White, JL sn
S. masukuense (Baker) R. E. Fries, JL sn

OCHNACEAE

- Campylospermum reticulatum* (P. Beauv.) Farron, JL 214
C. saculeuxii (Tieghem) Farron, DT 3939, JL 217, RP 5122
Ochna holstii Engl., DT 3738, DT 3922
Ouratea schusteri Gilg ex Engl., DT 3834

OLACACEAE

- Octoknema orientalis* Mildbr., JL 287
Olex gambecola Baill., RP 5117
Strombosia scheffleri Engl., JL sn

OLEACEAE

- Chionanthus mildbraedii* (Gilg & Schellenb.) Stearn, RP 5123
Olea capensis L., JL sn
Schrebera alata (Hochst.) Welw., DT 3904

OLINIACEAE

Olinia rochetiana A. Juss., JL sn

PIPERACEAE

Peperomia molleri C. DC., DT 3692, RP 5142

P. rotundifolia (L.) Kunth., DT 3622

Piper capense L. f., JL sn

P. umbellatum L., JL 234

POLYGALACEAE

Carpolobia cf. *goetzei* Guerke, DT 3758

PRIMULACEAE

Ardisiandra sibthorpioides Hook. f., DT 3799

PROTEACEAE

Faurea saligna Harvey, DT 3703

RHAMNACEAE

Lasiodiscus usambarensis Engl. var. *usambarensis*, DT 3828

Ziziphus pubescens Oliver, JL sn

RHIZOPHORACEAE

Anisophyllea obtusifolia Engl. & Brehm., JL sn

Cassipourea gummiflua Tul., JL sn

C. malosana (Baker) Alston, JL sn

RUBIACEAE

Aidia micrantha (K. Schum.) F. White var. *msonju* (Krausse) Petit, DT 3679

Bertiera pauloi Verdc., DT 3842, DT 292

Calycosiphonia spathicalyx (K. Schum.) Robbrecht, DB 658, JL 269

Canthium captum Bullock, JL sn

Chassalia discolor K. Schum., JL 220

C. parviflora K. Schum., DT 3838

Coffea mongensis Bridson, JL sn

C. mufindiensis Hutch. ex Bridson, DT 3819, DT 3914A

Craterispermum longipedunculatum Verdc., DT 3784, DT 3827

Cremaspora triflora (Thonn.) K. Schum. subsp. *confluens* (K. Schum.) Verdc., DB 624

Didymosalpinx norae (Swynnerton) Keay, DB 623

Diodia sarmentosa Sm., DB 632

Geophila obvallata (Schumach.) F. Didr. subsp. *iodes* K. Schum., JL 275

Heinsenia diervilleoides K. Schum., DT 3822

Ixora scheffleri K. Schum. & K. Krausse subsp. *scheffleri*, DT 3852

I. tanzaniensis Bridson, DB 626, RP 5116

Keetia venosa (Oliver) Bridson, DT 3608

Lagynias pallidiflora Bullock, DB 612

L. rufescens (E. A. Bruce) Verdc. subsp. *angustiloba* Verdc., DB 649, JL 289

Lasianthus kilimandscharicus K. Schum. subsp. *kilimandscharicus*, JL sn

L. peduncularis E. A. Bruce, DT 3777

L. sp. nov., DB 650, DT 3759, JL 235

Leptactina platyphylla (Hiern) Wernham, DB 653, DT 3721

Oldenlandia affinis (Roemer & Schultes) DC., DB 597
O. corymbosa L. var. *caespitosa* (Benth.) Verdc., DB 616

O. rupicola (Sonder) Kuntze, DT 3800

Oxyanthus pyriformis (Hochst.) Skeels subsp. *tangan-yikensis* Bridson, DB 636, DT 3745

O. speciosus DC. subsp. *stenocarpus* (K. Schum.) Bridson, DB 651

Pauridiantha bridelioides Verdc., DB sn

P. paucinervis (Hiern) Bremek. subsp. *holstii* (K. Schum.) Verdc., DB 569, DT 3831

P. sp. nov., DB 648, DT 3680B, DT 3778, DT 3826, DT 3841

Pavetta lynesii Bridson, DT 3717, DT 3837

P. mshigeniana Bridson, DT 8678

P. nitidissima Bridson, DT 3851

P. stenosepala K. Schum. subsp. *kisarawensis* (Bremek.) Bridson, DB 599, JL 210, JL 308

P. ?mzeleziensis Bridson, DB 625

P. sp., JL 291

Pentas longituba K. Schum., DB 596

Porterandia penduliflora (K. Schum.) Keay, DT 3611

Psychotria cryptogrammata Petit, JL 227

P. faucicola K. Schum., DT 3844

P. goetzei (K. Schum.) Petit, DT 3716

P. lauracea (K. Schum.) Petit, DB 637

P. megalopus Verdc., DT 3910

P. meridiano-montana Petit var. *angustifolia* Petit, DT 3710

P. schliebenii Petit, DB 627

P. tanganyicensis Verdc. var. *ferruginea* Verdc., JL 278

P. aff. trichoclada Petit, DT 3836

P. sp., JL 294

Psydrax livida (Hiern) Bridson, DB 586, DB 587, DB 588

P. parviflora (Afz.) Bridson subsp. *rubrocostata* (Robyns) Bridson, JL sn

Pyrostria sp. nov., DT 3942

Rothmannia fischeri (K. Schum.) Bullock subsp. *fischeri*, JL 178

R. manganjae (Hiern) Keay, JL sn

R. urcelliformis (Schweinf. ex Hiern) Bullock ex Robyns, DT 3748

Rytigynia caudatissima Verdc., DT 3781

R. hirsutiflora Verdc., DT 3811

R. lichenoxenos (K. Schum.) A. Robyns subsp. *glabri-tuba* Verdc., DT 3779

R. pseudolongicaudata Verdc., DT 3780

Sericanthe odoratissima (K. Schum.) Robbrecht var. *ulu-gurensis* Robbrecht, DT 3680A, DT 3711

Tarennia pavettioides (Harvey) Sim subsp. *affinis* (K. Schum.) Bridson, DB 629, DT 3614, DT 3750

T. uzungwaensis Bridson, DT 3785

Tricalysia pallens Hiern, DB 595, DB 595A, DB 600, DB 611, DB 630, DT 3607, DT 3615, DT 3712, DT 3737

T. sp. nov., DB 647

Uncaria africana G. Don var. *africana*, DT 3758A

Vangueriopsis longiflora Verdc., JL sn

RUTACEAE

Clausena anisata (Willd.) Benth., DT 3941

Teclea nobilis Del., DT 3906

Vepris stolzii Verdoorn, DT 3713

Zanthoxylum sp., JL sn

SANTALACEAE

Thesium triflorum Thunb., DT 3809, JL 309

SAPINDACEAE

- Allophylus macrobotrys* Gilg, DT 3792
A. melliodorus Gilg ex Radlk., JL sn
A. pervillei Blume, DB 656, DT 3635
Chytranthus prieurianus Baill. subsp. *longiflorus* (Verdc.)
 Halle, DT 3940, JL 189
Deinbollia sp., JL sn
Filicium decipiens (Wight & Arn.) Thw., JL sn
Glennia africana (Radlk.) Leenh., DT 3749
Haplocoelopsis africana F. Davis in MS, JL sn
Haplocoelum foliolosum (Hiern) Bullock, JL sn
Lecaniodiscus fraxinifolius Baker, JL sn
Pancovia golungensis (Hiern) Excell & Mendonca, JL sn
P. holtzii Radlk., DT 3633
Placodiscus aff. *amaniensis* Radlk., DT 3724
Zanha golungensis Hiern, JL sn

SAPOTACEAE

- Afrosersalisia cerasifera* (Welw.) Aubrév., DT 3628
Afrosersalisia sp. ?nov., JL sn
Aningeria pseudoracemosa J. Hemsley, DT 3725
Bequaertiodendron magalismontanum (Sonder) Heine
 & J. Hemsley, JL sn
B. natalense (Sonder) Heine & J. Hemsley, DT 3606
Chrysophyllum gorungosanum Engl., JL sn
C. cf. lanceolatum (Bl.) DC., JL sn
Inhambanella henriquesii (Engl. & Warb.) Dubard, JL sn
Malacantha alnifolia (Baker) Pierre, JL sn
Mimusops aedificatoria Mildbr., DT 3845
Omphalocarpum sp. nov., DT 3652
Pachystela brevipes (Baker) Engl., JL sn
Vitellariopsis cuneata (Engl.) Aubrév., DT 3662

SCROPHULARIACEAE

Alectra kirkii Hemsley, DT 3631, RP 5140

SIMAROUBACEAE

Odyndea zimmermannii Engl., JL sn

SOLANACEAE

Solanum aff. *schumannianum* Dammer, DT 3896

STERCULIACEAE

- Cola greenwayi* Brenan, JL sn
C. uloloma Brenan, JL sn
Leptonychia usambarensis K. Schum., DT 3657, DT
 3795

THEACEAE

- Ficalhoa laurifolia* Hiern, JL sn
Ternstroemia polypetala Melchior, var. ?nov., DT 3767

THYMELAEACEAE

- Dicranolepis usambarica* Gilg, JL sn
Peddiea polyantha Gilg, DT 3701

TILIACEAE

Grewia cf. *barombiensis* K. Schum., DT 3747

ULMACEAE

- Celtis africana* Burm. f., JL sn
C. durandii Engl., JL sn
Chaetacme aristata Planchon, JL sn

UMBELLIFERAE

Cryptotaenia calycina C. C. Townsend, DT 3806

VERBENACEAE

Clerodendrum capitatum Schum. & Thonn. var. *capitatum*, DB 631

VIOLACEAE

- Rinorea arborea* (Thouars) Baill., DB 654, DT 3665,
 JL 296
R. aff. arborea (Thouars) Baill., DT 3894
R. ferruginea Engl., DB 609, DB 622, DB 652, JL 185
R. ilicifolia (Welw. ex Oliver) Kuntze var. *amplexicaulis*
 Grey-Wilson, DT 3691
R. subintegrifolia (P. Beauv.) Kuntze, DT 3634, DT
 3938, JL 223

VITACEAE

- Cissus producta* Afz., DB 614
Rhoicissus revouilii Planchon, DT 3720

ANGIOSPERMAE, MONOCOTYLEDONS

AGAVACEAE

- Dracaena laxissima* Engl., JL sn
D. usambarensis Engl., JL 181

AMARYLLIDACEAE

Scadoxus multiflorus (Martyn) Raf., JL sn

ARACEAE

- Amorphophallus* sp., JL sn
Calloopsis volkensii Engl., Carmichael 127
Culcasia falcifolia Engl., JL sn
C. orientalis Mayo, JL sn

BURMANNIACEAE

Gymnosiphon usambaricus Engl., JL 298

CYPERACEAE

- Cyperus pseudoleptocladus* Kukenthal, DT 3897A
Scleria iostephana Nelmes, DB 613
S. racemosa Poirét, DB 619

GRAMINEAE

- Coelachne africana* Pilger, DT 3935
Leptaspis cochleata Thwaites, JL sn
Olyra latifolia L., JL sn
Puelia olyrifformis (Franch) Clayton, DT 3722

IRIDACEAE

Gladiolus rupicola Vaupel, DT 3706

LILIACEAE

Asparagus asparagoides (L.) Wight, DT 3704



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