VOLUME II

PLANT ECOLOGY AND ETHNOBOTANY OF TWO SACRED FORESTS (*KAYAS*) AT THE KENYA COAST

MSc. THESIS BY MOHAMED PAKIA

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Appendix I: Vegetation segments established during the preliminary field survey in *kayas* Mtswakara and Fungo (August - October 1997)

Kaya Mtswakara

Physiognomically, *kaya* Mtswakara consisted of four vegetation types: a relatively dense canopy forest; *Brachystegia* woodland; wooded-grassland; and mangrove forest along the Mwache river. The relatively dense canopy forest, occurred on gentle to steep slopes, and comprised two components differentiated by the dominant tree species, *Cynometra suaheliensis* and *C. webberi* for the *Cynometra* vegetation component, and *Julbernardia magnistipulata* for the *Julbernardia* vegetation component. The *Brachystegia* woodland was characterised by the presence of *Brachystegia spiciformis*, which formed a comparatively low canopy. Termite mounds which occurred within this woodland carried floral elements (such as *Cynometra suaheliensis, C. webberi* and *Dobera loranthifolia*) that were more closely related to the *Cynometra* vegetation component than to *Brachystegia* woodland vegetation. Wooded grassland was characterised by random emergent tree species and scattered shrub species such as *Catunaregam nilotica, Grewia plagiophylla, Hoslundia opposita, Acacia mellifera* and *Ximenia americanum*, in areas mainly dominated by herbaceous species. This vegetation type occurred along the forest edges, and in some cases it was a result of encroachment by small-scale farmlands especially from the western side of the *kaya*. Mangrove forest, which included a variety of mangrove species, had suffered (before this survey) a rapid degradation following abnormally long rains in 1998 that left individual Mangrove trees and associated vegetation dead.

The soils were generally dark sandy-loams on the forest segments and on the wooded grassland, and white sand soils were on the *Brachystegia* woodland. Rock outcrops were common in all vegetation types, but there was a stronger presence of sandstone rock outcrops in the *Brachystegia* woodland which also had a relatively shallow topsoil layer.

Kaya Fungo

Kaya Fungo is an 'island' of forest found between farmland areas and grazing-land. The *kaya* consisted of five physiognomic vegetation segments, namely: (1) mixed forest; (2) *Julbernadia* forest vegetation,; (3) *Acacia* dominated thicket; (4) scrubland vegetation and (5) wooded grassland. A sixth physiognomic vegetation (6) *Brachystegia* woodland was

identified at Mirihi-ya-Kirao, a sacred forest patch culturally linked to *kaya* Fungo, found to the south of *kaya* Fungo.

The mixed forest, standing at about 20 m high with a fairly dense but inconsistent canopy, occupied the central 'core' of the *kaya*. This vegetation type was characterised by several tree species sharing dominance. These species included *Cola minor, Craibia brevicaudata, Combretum schumannii, Afzelia quanzensis* and *Commiphora eminii*. A relatively small stretch of *Julbernardia* forest vegetation occurred towards the southern end of the *kaya*, in an area where *Julbernadia magnistipulata* was the dominant tree species. In the *Acacia* thicket occurring prominently on the northern and north-western parts of the edges of the *kaya* had *Acacia reficiens*, *A. robusta* and *A. nilotica*, as the dominant species. The scrubland vegetation was mainly shrub dominated, but differed from the *Acacia* thicket in that the *Acacia* species were not the dominants. The wooded grassland also occurred in the peripheral areas of the *kaya*, especially in the eastern, southern and western parts, and consisted of scattered shrub species but with clear dominance of herbaceous species.

The *Brachystegia* woodland, characterized by the dominance of *Brachystegia spiciformis*, occurred exclusively in Mirhi-ya-kirao. Based on observations and historical information, the *Brachystegia* woodland vegetation had been subjected to disturbance, through pole cutting, firewood collection and charcoal making. Both forest patches (*kaya* Fungo and Mirihi-ya-kiarao) unlike *kaya* Mtswakara, occurred on a fairly flat area and with a notable absence of outcropping rocks. The soils were generally grey sandy-loams in *kaya* Fungo, and white sands in Mirihi-ya-kirao.

In addition to the preliminary vegetation survey other activities considered necessary during the preliminary survey were consultations with key persons who included local administrators, the *kaya* elders, the community guards and the field assistants.

Appendix II: TWINSPAN classification table for all species recorded in the relevés sampled in *kaya* Mtswakara

Appendix II: TWINSPAN classification table for all species recorded in the releves sampled in kaya Mtswakara

Species	Relevés
	2224411 221222411132233333431 13 344434 114455
	132894567899576667800478236051340115924123948235701
Commiphora Asplenium sub-community	
Asplenium butteneri	22 222 22 22 1
Commiphora edulis	4 3 3 3 3 3 3
Col. No. 3156	22 22 1 1
Adiantum comorensis	222 2 2
Aloe rabaiensis	3 22 3
Euphorbia wakefieldii	4 23 2
Pandanus rabaiensis	343 43
Abutilon zanzibarica	3333
Ricinodendron sub-community	
Grandidiera boivinii	333 14334344432
Pycnocoma littoralis	3 333 3 33333 3 3
Hibiscus faulknerae	1 33 3 35333 1
Cissus quinquangularis	22 3111
Ricinodendron heudelotii	3 4 13 3 3
Sterculia appendiculata	1 333
Commiphora eminii	43 333
Cordia monoica	41 3
Cryptolepis sinensis	1 1113
Uvaria faulknerae	34 3 4443
Thunbergia kirkii	1 2 112
Cola minor	1 3 34
Coffea sp.	3 1 3 3 3 3
Salacia sp.	133 3 3
Cissus sylvicola	3 23 3
Differential species of Scorodophloeus community	
Scorodophloeus fischeri	4554435433456566 3 3 3
Encephalartos hildebrantii	3134333443 34433 3 13 1
Selaginella eublepharis	222222 22 2 2 222 2
Achyranthes aspera	3332 323 2 4 222 3 1 1 2
Rhoicissus tridentata	1 13 3333 13 3
Gyrocarpus americanus	33 3 3 3 333
Acalypha neptunica	43333 23 1 3 3 3
Synadenium pereskiifolium	1 1 3 3 2 1
Nectropetalum kaessneri	3 34 3 34 3
Col. No. 2417	3 3 3 3 4 1 1
Scorodophloeus-Hugonia Transitional species group	
Euphorbia nyikae	3 1 3 3 1 3 3 3
Sanseviera robusta	2 2 1 22 2 2
Buxus obtusifolia	3 3 2 3 33 3
Memecylon fragrans	3 3 4 3333
Markhamia zanzibarica	3 3 333 3
Ochna-Pancovia sub-community	
Ochna thomasiana	33331334 11 11 1
Heinsia crinita	233 31 3 13 3 1 1
Pancovia golungensis	3 34334343 1 3
Ophrypetalum odoratum	4 443
Acridocarpus alopecuris	33 43 31 1
Phyllanthus kaesneri	3 333 4 3
Monodora grandidieri	3 34 3
Dobera sub-community	
Carissa tetramera	3 444 3 3 3 45
Vitellariopsis kirkii	3 4 3 3443 2
Dobera loranthifolia	3 3 43443
Thespesia danis	433 3 3 13
Vernonia wakefieldii	3 3333 3
Tarenna supra axillaris	333 3
Strychnos panganensis	3 43 4 3
Strychnos madagascariensis	33 331 3 31
Euphorbia tirucalli	33 4
Tricalysis ovalifolia	3 4 3 34 3
Salvadora persica	3 333 3 1 1
Differential species of Hugonia community	
Hugonia castaneifolia	3 33333333331 33 3 1
Vepris eugeniifolia	3 131 13 3 3313 3 3 3
Crossandra pungens	1 2 21 22222 22 1 2 2
Suregada zanzibariensis	3 3 34 4 33 333
Schlechterina mitostemmatoides	113 3311 3 313 4 1 3
Julbernardia magnistipulata	455655561 144 63
Sclerochiton vogelii	34343 3 4333 4
Differential species of Asteranthe community group	
Asteranthe asterias	3333 433333334443334333333 3 4 3
Cynometra suaheliensis	3344354545544344 33 3 54456 45
Cissus rotundifolia	1 1321233333 3323323213322 31 1 3 3 1
Combretum illairii	2 343 64 4153543454343344 44 14 3 1
Croton pseudopulchellus	4 23 4656 343 4333 33334 34 3
Craibia brevicaudata	3 43 33543 43 453 43 3 3
Cynometra webberi	43 33 4545433 2 333 3 3
Grewia holstii	33 3343 33 13 31333 3
Mildbraedia carpinifolia	3433 3 3331344 333 3 33 3
Sansevieria arborescens	322 232 4 23 2 22211
Capparis viminea	33 4 3 33 31 31 33 333 1 3 33
Sansevieria kirkii	2 2 2122 21 2 1 12
Panicum sp.	1 224 622 2 242 22 2 12
Manilkara sulcata	33333 143 333 4 3333 3 43
Chlorophytum fillipendulum	222 1 211 11 2 1 1
Maerua triphylla	3 34 33 3 31 31 2 3
Companion species of Asteranthe community group	
Cissus phymatocarpa	13 1 1 13 1 1 2 3
Haplocoelum inoploeum	1 3 3 31 3 333 33 3 3
Psilotrichum scleranthum	42 23 1 32 33 3 33 1
Uvariodendron kirkii	3 3 3 3 1 3 33 1
Strophunthus kombe	31 333 33 3
Dorstenia hildibrandtii	12 22 1 211 1
Stylochaeton salaamicus	2 12 2 12 1 1 1 1
Dichapetalum zenkeri	3 1 33 43 3
Grewia forbesii	3 33 34 3 33 3
Commelina bracteosa	112 2 2 1 2 1
Commiphora lindensis	3 3 3 3
Rytigynia sub-community	
Rytigynia celastroides	323 1 3
Phyllanthus welwitschianus	3223 3
Dichrostachys cinerea	322 4
Hymenodictyon parvifolia	3 33 122 3
Psydrax sub-community	
Psydrax faulknerae	1 3 3333333
Bidens taylorii	25 222
Garcinia livingstonei	3 3 3 4
Differential species of Brachystegia community	
Brachystegia spiciformis	33 551345644444
Manilkara sansibarica	3 3 33333433 3334
Gutenbergia sp.	1 1 242222222 12
Blepharis maderaspatens	2 3 2 2 2 2222 2 1 132 2
Hyperthelia dissoluta	5 5233642 4126
Agathisanthemum bojeri	2 3 22 122 251 2
Murdannia simplex	22 22 1 1 11
Setaria sp.	4 4 5 2
Differential species of Acacia community	
Acacia etbaica	333313
Acacia mellifera	3333
Catunaregam nilotica	334 1
Hoslundia opposita	3 333311
Grewia plagiophylla	3 3 1 4333 3
Allophylus rubifolius	33 133 1
Ximenia americana	1 3 133
Cissampelos pareira	1 1211 1
Terminalia spinosa	3 3311
Bridelia cathartica	3 33
Tinnea aethiopica	1 31 33 1
Diospyros bussei	3 3 3 3 3
Aspilia mossambicensis	22 4 2
Ocimum suave	3 111
Differential species of Hugonia and Brachystegia communities	
Synaptolepis kirkii	23334233333 343333333331131 13
Ancylobotrys petersiana	13333333333333323333243313 33 1
Canthium mombazense	3333333343443 2231334 111334
Monanthotaxis fornicata	344 43333 33 34 3 31
Adenium obesum	1 2 1 11221 32222323 2
Achyrothalamus marginatus	3 3 3 2 4 341 12
Thecocaris bussei	3 1 3 33333 1 1
Uvaria lucida	3 33 3 4 333 4 3 1 33
Diospyros consolatae	3333 3 1 433343313334 3
Psychotria amboniana	3 33433 32333333333333 2
Psydrax recurvifolia	334 3 333 343333334
Psydrax polhillii	1 3 33 3 33313 1 3 3
Pentarhopalopilia umbellulata	1 3311 44 1 33 333 1
Ritchiea capparoides	3 3333 3
Lamprothamnus zanguebaricus	3 123 3 1 33 3
Strychnos spinosa	33 3 33
Artabotrys modestus	3 31 1 4
Differential species of Hugonia, Brachystegia and Acacia communities	
Panicum maximum	12 1 4 22422 222 25344254332 22665 2
Ochna mossambicensis	3 3311113 113333133 3 11 3 131 1
Cyanotis sp. nov.	22 12 2222121112 21 2 2 2 1
Differential species of wet-dry coastal forest	
Asparagus falcatus	3 3313 133133131233 333133333 313 3 1 231
Uvaria acuminata	12 3 12131313333333313331 3 3 33 23 4
Asystesia gangetica	22 2 1 2 2321222 3 223133222 2 22 2
Companion species of wet-dry coastal forest	
Kyllinga sp.	2 222 22 12 12 222 22 2 1 212
Deinbolia borbonica	1 1 1 3 1 13 3121 22
Pyrenacantha vogliana	1 1 3 3 2 1 3 33 13
Premna chrysoclada	3 3 3 133
Dalbergia boehmii	3 3 1 3 3 4 3 3
Abutilon mauritiana	3 3 3
Cyperus sp.	212 2 1 2 1 2
Acacia adenocalyx	4 3 5 3 3 3
Cynanchum gerradii	1 1 2 1 12 3 3
Microcoelia sp.	1 1 1 2 2 1 3 2
Sanseviera sp.	2 22 2 11 2 2
Indifferential and rare species (locally) recorded in Mtswakara	
Cyphostemma adenocauli	1 31 2 1
Tamarindus indica	4 3 3
Col. No. 2513	3
Col. No. 2534	1
Adansonia digitata	3
Adenia lindensis	3
Anchomanes abbreviata	31 1
Caesalpinia insolita	1 13
Cissus aralioides	1
Cladostemon kirkii	3
Combretum schumannii	3 1 4
Cussonia zimmermanii	4
Cyphostemma buchananii	3 1
Dracaena sp cf aletriformis	3 3
Ficus lingua	3
Hibiscus altissimus	43 33
Hunteria zeylanica	3
Ipomoea shupangensis	3 3 3
Kedrostis heterophylla	31
Lecaniodiscus fraxinifolius	1 33 1
Maerua holstii	1
Momordica boivinii	3
Monethecium aristatum	2
Rinorea ilicifolia	134 1
Solanum goetzii	3
Thilachium roseomaculatum	2
Urera sansibarica	3 31 1
Aristogeitonia monophylla	1
Capparis fascicularis	3 1 13
Cynanchum sp.	1
Impatiens walleriana	1 1
Lantana camara	13
Oeceoclades saundersiana	2
Oldenlandia johnstonii	5
Opuntia vulgaris	2 1
Pseuderanthemum hildebrandtii	32 3
Scilla drimiopsis	1
Kalanchoe obtusa	2 12 1 1
Siphochilus kirkii	2 1
Solanum zanzibarense	1 1 1
Plectranthus tenuiflora	22 2
Commelina sp.	1 2 2 1
Bulbophyllum maximum	2 2
Landolphia kirkii	33 3
Col. No. 2960	3
Col. No. 3052	1
Pancovia sp.	3
Aerangis kirkii	2
Angraecum cultriforme	2
Bombax rhodogphalon	3
Diospyros natalensis	4
Drypetes parvifolia	4
Majidea zanguebarica	4
Megastachya mucronata	22
Microgramma lycopodioides	23 2 1
Ormocarpum sennoides	3
Pavetta crebrifolia	3
Pteleopsis myrtifolia	1
Pyrenacantha malvifolia	3
Secamone retusa	3
Solenangis wakefieldii	1
Vepris glomerata	3
Col. No. 3561	3
Col. No. 3563	1
Col. No. 3567	1
Abrus precatorius	3
Asparagus setaceus	1
Carpolobia goetzei	3 3
Ceropegia seticorana	1
Cordia faulknerea	5
Dalbergia vacciniifolia	3 3
Erythroxylum emarginatum	3
Haplocoelum foliolosum	1
Ipomoea mauritianum	1
Sterculia rhynchocarpa	3
Acalypha fruticosa	2 33 1
Maytenus mossambicensis	2 3 1
Balanites wilsoniana	3 4 1
Maerua kirkii	3 3 1
Gonatopus boivinii	1 1 1
Pyrenacantha kaurabassana	3 2 3
Gossypioides kirkii	3 1 1
Hypoestes forskaolei	22 1 2 1
Tiliacora funifera	3 3 1 2
Mostuea brunonis	2 2 1
Solenostemon latifolius	24 2
Tarenna graveolens	3 3
Lannea schweinfurthii	3 3
Mystroxylon aethiopicum	3 3
Vepris sp. nov.	4 4
Aneilema petersii	2 1 2
Zehneria pallidinervia	4 1 2
Lannea schweinfurthii	3 3 3
Col. No. 3589	22
Col. No. 3590	2
Col. No. 3591	2
Col. No. 3593	2
Col. No. 3594	2
Col. No. 3596	2
Col. No. 3601	2
Col. No. 3602	2
Col. No. 3603	2
Col. No. 3604	1
Col. No. 3605	2
Col. No. 3606	1
Col. No. 3607	2
Aerva lanata	2
Boureria nemoralis	3
Commelina sp.	3 1
Dalbergia melanoxylon	133
Diospyros squarrosa	13 1
Emilia coccinea	1
Flagellaria guineense	1 11
Grewia densa	1
Hyphaene compressa	1
Jatropha sp.	1
Loncocarpus bussei	1
Ormocarpum kirkii	1
Orthosiphon rubicundus	1
Pavonia leptocalyx	1
Sida acuta	1
Thunbergia sp.	2 2
Tragia furialis	1 211
Tridax procumbens	1
Zanthoxylum chalybeum	1 11 1
Ziziphus mucronata	31 13
Phyllanthus sp.	5 31
Waltheria indica	2 3 12
Hibiscus faulknerae	1 1 1
Tephrosia villosa	2
Cassia abbreviata	1 31
Triumfetta rhomboidea	2 2
Vernonia hildebrandtii	3 1
Ozoroa obovata	3 1
Allophylus pervillei	1
Asparagus sp.	3
Boscia angustifolia	3 4
Canthium kilifiensis	3 1
Combretum sp.	3
Commelina benghalensis	2 1 2
Cucumis sp.	2
Ficus sp.	2
Habenaria trilobulata	2
Huernia archeri	2
Kalanchoe lateritia	2
Pavetta linearifolia	3 33
Polysphaeria parvifolia	3 3
Psychotria holtzii	3
Sideroxylon inerme	1 3
Strychnos sp.	1 3 4
Tapura fischeri	3
Uapaca nitida	333
Col. No. 2552	4
Commiphora sp.	2
Gonatopus boivinii	1
Millettia usaramensis	3
Ricinus communis	2
Sesamum calycinum	2
Solanecio angulatus	2
Solenangis aphylla	2
Tephrosia noctiflora	3
Vitex mombassae	3

Appendix III: TWINSPAN classification table for all species recorded in the relevés sampled in *kaya* Fungo

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Species	Relevés
	5555334224433444112331233 22 1111112222333144445
	1234890343427512249033816576124735890578960126451768 90
Differential species of *Brachystegia* community	
Brachystegia spiciformis	4443 3
Murdannia simplex	2222 2 2 2 1
Psychotria amboniana	3343 3 3 1 3 1 4
Psydrax faulknerae	3333 3 2
Vitex mombassae	4343 3 2
Achyranthes aspera	2222 3
Cyperus sp.	222 2 2 2
Pentas bussei	33 23 3 1 4
Ormocarpum kirkii	3 33 2
Acridocarpus zanzibaricus	332
Canthium kilifiensis	332 1
Eulophia speciosa	22 2
Gonatopus boivinii	1111 1
Oxygonum sp.	2222
Uvaria faulknerae	343
Bulbophyllum maximum	2 22 2
Adenium obesum	2211 1 2 2
Abrus precatorius	111 2 1
Triumfetta rhomboidea	222 2 2
Thecocaris bussei	2322
Solenostemon latifolius	222 2 2
Companion species of *Brachystegia* community	
Synaptolepis kirkii	122313 2 2 13 2
Julbernardia magnstipulata	3 4 653 33
Monanthotaxis fornicata	333 34 1
Oxyanthus zanguebaricus	3 35 3 3
Tabernaemontana elegans	1333 1 3 3 3 3
***Grandidiera* sub-community**	
Grandidiera boivinii	3333433 331 3
Acalypha neptunica	333 3 333 3 33 3 1
Craibia brevicaudata	33 465 334 63
Asteranthe asterias	3 4 1 331 43 1 3
***Hunteria* seral stage**	
Col. No. 3679	3 112 1 1 4
Hunteria zeylanica	3 3 34 3 3 1
***Blepharispermum* sub-stage**	
Blepharispermum zanguebaricum	64544 34 4
Vitex strickeri	3 3 3133 3 31 3 1 1 3 3
Ruellia sp.	22322 2 2 2 2 2 4
***Haplocoelum* sub-stage**	
Haplocoelum foliolosum	3 2 33333 4 3
Euphorbia tirucalli	2 323234 1
Cyanotis sp. nov.	2 212 1 3 4
***Excoecaria* sub-stage**	
Excoecaria madagascariensis	1 343323 2
Ipomoea shupangensis	1 1 2 11 213
***Salacia* seral stage**	
Salacia sp.	33 3333313313334
Psilotrichum scleranthum	2222 222222 2222 3 2 23 43
Dombeya taylori	3 3 313334 33 3 1 2
Polysphaeria parvifolia	34 23 313 3433334 3 4 4333
***Uvariodendron* senso stricto sub-community**	
Croton pseudopulchellus	3331 3434433444545445
Cola minor	3323333334333433333
Manilkara sulcata	4 43 33343343 33334343 3 4 1 3
Cissus rotundifolia	2231 212 21 11 1 1 3 32 3 2
Sansevieria arborescens	1 2222 122 3 2 11 22
Pellaea doniana	2 2 2 2 1 212 12213 2
Commiphora eminii	3343 133 44 35
Differential species of *Uvariodendron* community	
Uvariodendron kirkii	33334434343435535545444 3
Combretum schumannii	34333443 43333343334343 3
Eugenia capensis	3 3 2333 1 43 433333435 1 4
Haplocoelum inoploeum	3 33433333 3331 33 344333 3 3 1 31 31
Encephalartos hildebrandtii	333 322 3 32 121 121 12
Hugonia castaneifolia	3 233 1 3 1123323 312
Anchomanes abbreviatus	1 1 212 2 112212 112
Monodora grandidieri	3 33333 34 3 3 1 3
Strophanthus kombe	3 232 23 3333 1
Toddaliopsis sansibarensis	33 33 3 33 3333 433
Tiliacora funifera	1 3 22 2 1 2 2 2
Differential species of *Brachystegia* and *Uvariodendron* communities	
Uvaria acuminata	4334 3223232342313425444333 3 3
Ochna thomasiana	3233 3333 31333333 34444434
Euphorbia nyikae	3332 1 1 3 13 3 33 31 1 1 3 2313
Acacia adenocalyx	33 3 133 33232332 1 1 3 1 2 133
Canthium mombazense	33 3 33 3333 334 4334433 3 3 3
Afzelia quanzensis	3 3434 4 5 4 4 4
Commelina sp.	222212 2 2 22 2 2 1 1212
Heinsia crinita	33 335433 3 1 34 33
Gossypioides kirkii	331313 1 1 1 2 2
Sansevieria kirkii	2 223 12 21 2 2 2
Loeseneriella africana	313 3 23 1 3 43 43
Cissus sylvicola	11 2 2 11 132 11 1 344
Coffea sessiliflora	3 33 33 33433 1
Cussonia zimmermannii	33 3 3 333 3 3 3 3
Stylochaeton salaamicus	222 2 22 1122 2 1 3
***Chloris* seral stage**	
Chloris roxburghiana	22212 2 3
Enteropogon sechellensis	2 2 2 2 2 3
***Dalbergia* seral stage**	
Dalbergia melanoxylon	31111333 3 1
Agathisanthemum bojeri	2222 2 2222223242 2 2
Diospyros bussei	3 3 43 3313333 31 1
Hoslundia opposita	3 3 231333 41 113
Lantana camara	1 3 333343543 3 33 22
Catunaregam nilotica	1 2 133231333 33 3 2
Eragrostis superba	3 2 22 2222222 22 2
Harrisonia abyssinica	3 33 33 3 3
Sterculia rhynchocarpa	3 3 1 333 3
Zanthoxylum chalybeum	3 11 33 3 3
***Acacia reficiens* sub-community**	
Acacia reficiens	1643555 4233 433
Acacia zanzibarica	53333333323 3 1 13
Indigofera sp.	1 2
Terminalia spinosa	3 3 33141 433 3 3 344
Erythrocephalum minus	22 1 1 13 1 2
Ximenia americana	33 3 3 1 3 3 3
Manilkara mochisa	3 3 3 34 4 2 2
Salvadora persica	3 13 3 3 332 33 3 3
Grewia densa	3 333343 333334 3 3 1
Tragia furialis	11 111 12 3 2 2
Sporobolus fimbriatus	2 2 222 2 22 1
Commiphora africana	33333 1 1 3
Lannea schweinfurthii	1 3 31 3 11 3 1 222
Dichrostachys cinerea	3 3 332 33 3 333
***Acacia robusta* senso stricto sub-community**	
Lamprothamnus zanguebaricus	3 1 3 1 3 2313 324333342 2 5
Thespesia danis	3 1 3 433 5334334543323
Croton talaeporos	3 3 3 3 3 3 33 3 3 24 31
Hyperthelia dissoluta	5 1 2 22 322 22
Premna chrysoclada	3 3 3433 3 333 1 2
Maerua sp.	3 3323
Acacia mellifera	3 124 11
Differential species of *Acacia robusta* community	
Acacia robusta	3 133 3444 33333333 4324 3
Bridelia cathartica	3 13333 3333 3 33 3 112
Vernonia hildebrandtii	3 2 2 332 333223 4 233222 22
Allophylus rubifolius	3 2 113 433 3333334 23
Commiphora edulis	3 3 4 3 3 3 33 31 3
Pentarhopalopilia umbellulata	3 1 1 1 1 3 4 3 31
Indigofera sp.	2 232 43 3 1 13 33 4 3
Cissampelos pareira	1 23 11 2 2 1 111
Companion species of *Acacia robusta* community	
Maerua grantii	1 3 1 1 1 4
Cycnium veronicifolium	122 21
Melhenia velutina	1 2 11 1 2 1
Zehneria pallidinervia	31 1 1 12 22
Companion species of Undetermined vegetation type	
Ophrypetalum odoratum	34 222
Manilkara sansibarensis	433 4 3 3 3 1313
Adenia gummifera	1 1 1 2 234
Capparis sp.	1 133
Quisqualis littorea	233
Differential species of *Brachystegia* and *Acacia robusta* communities	
Cyperus niveus	2222222 2 1 2 22 1 222 2 22
Blepharis maderaspatensis	22223 2 2 1 3 2 2222 2 2 33 3
Pyrenacanthà vogeliana	1131 1 1 3 331
Differential species of *Uvariodendron* and *Acacia robusta* communities	
Grewia forbesii	334 33 333 3 33 4 3 4 43133 33 54
Acalypha fruticosa	33 4 53 3 31 43 1 33
Capparis viminea	3 3 3 1 11 1 3 3 3 1 23 3
Hibiscus micranthus	13 3 12433 32 1 2 1 1 3 1
Carissa tetramera	33 3 4 4 434 3 3243 22 2
Grewia stuhlmannii	44 3 3 3 333 3
Diospyros loureiriana	33 3 3 3 3 3 1 1 5 1 2
Grewia truncata	4 3 4 3 3 3
Cola sp.	3 21 3 3
Sideroxylon inerme	3 3 3 3 1 3
Differential species of semi-arid coastal forest	
Panicum maximum	222222232 222222111222222 2 3 2 2 222 2 22
Ancylobotrys petersiana	2411333 33 1 3121122 3 3 1 3 13 23
Ochna mossambicensis	1332 11 1 2 4 1 3 3 1 11
Abutilon zanzibaricum	2 222 33 3122 3 23 2 1212322 2 1221 2
Grewia plagiophylla	3 33 3 3 33 3 313 443 3 33 3313 334 4
Companion species of semi-arid coastal forest	
Siphonochilus kirkii	22 2 2 2 2 2 2 3
Commiphora lindensis	33 1 3 1 3 3 33331 1
Deinbolia borbonica	31 3 1 1 13 1 3 3 333 2
Cissus phymatocarpa	2 22 1 322 2 222 232 2233 2 3
Celosia hastata	3 3541 2 322 3 1 3 3 3 2
Cordia faulknerae	3 4 3 3 1 1 33 31 3
Rhoicissus tridentata	3 33 3 22 2
Asparagus sp.	2 1 1 1 11 1 1 112
Suregada zanzibariensis	33 3 3 3 1 33 3 2
Asystasia gangetica	22 2 3 42 22 2 1
Indifferential and (locally) rare species in *kaya* Fungo	
Tinnea aethiopica	32 2 2 31
Euclea natalensis	22 2 2 3 3
Flagellaria guineensis	2 2 1 3 3 3
Plectranthus tenuiflorus	12 2 2 22 3
Ficus lingua	3 3 3 23
Rhus natalensis	3 1 33 1 1
Dactyloctenium geminatum	2 6 2 22 2
Kraussia kirkii	3 3 1
Monanthotaxis sp.	3
Adiatum comoresnsis	1
Dalbergia vacciniifolia	2 3 3 4
Dobera loranthifolia	3 333 3
Urera sansibarica	1 1 3
Elachyptera parvifolia	43 1
Zamioculcas zamiifolia	2 1 122
Albizia anthelmintica	3 34
Artabotrys modestus	3 3
Cladostemon kirkii	3
Combretum illairii	331
Kleinia sp.	2
Platycerium alcicorne	1 1 22
Premna hildebrandtii	1 1 2
Rauvolfia mombasiana	1 33
Vernonia aemulans	1 1 2
Aloe secundiflora	1 1 1 2
Aneilema sp.	2 2
Cienfugosia hildebrandtii	3 13
Opuntia vulgaris	2 3 1
Psilotrichum cyathuloide	1 2 1 3 1
Thevetia peruviana	3 2 1
Vitex payos	3 13
Col. NO. 3723	1 2
Asparagus racemosus	1 1 3 3
Clausena anisata	1 1 3 1 3
Ficus bussei	2 1 3 2
Mildbraedia carpinifolia	3 41 1
Cyperus sp.	2 2 3
Bourreria nemoralis	3 1
Hyphaene compressa	1 1 1
Albizia adianthifolia	5 1 3
Ziziphus mucronata	4 3
Combretum hereroense	2 3 3
Tephrosia villosa	2 2 2 2
Col. No. 3635	22 3
Jatropha sp.	1 1 2 1 1 3
Lecaniodiscus fraxinifolius	1 3 3 1
Strychnos spinosa	3 2
Barleria ramulosa	2 3 2 1
Cadaba carneo viridis	1 3 1
Gomphrena celosoides	1 1 2
Pseuderanthemum hildebrandtii	2 2
Sesamum calycinum	33
Sida acuta	2
Tamarindus indica	1 1 3 2
Tricalysia ovalifolia	3 3 3
Tylophora stenoloba	333
Acacia nilotica	3 3 2
Aspilia mombasae	2 2 1
Cyphostema buchananii	1
Diospyros squarrosa	3
Microglossa sp. (? *pyrifolia*)	13 4 3
Pyrostria phyllanthoidea	3
Phyllanthus sp.	2
Solanum incanum	1
Sterculia appendiculata	1
Strychnos madagascariensis	1 3 4
Crossandra pungens	22 2
Gyrocarpus americanus	1
Landolphia kirkii	4
Lannea sp.	3
Maerua holstii	4
Pteleopsis sp.	3 34 1
Scutia myrtina	3 33 1
Solanecio angulatus	2
Synadenium pereskiifolium	32
Vangueria randii	23
Vepris sp.	33 3
Hymenodictyon parvifolium	33 4
Stictocardia incompta	2 3
Carpolobia goetzei	3 33 2
Hibiscus altissimus	3 2 1 33 3
Mystroxylon aethiopicum	3 3 4 3 4 3
Clerodendrum robustum	1 3 2 1 2
Schlechterina mitostemmatoides	3 1 1 1 1
Microcoelia exilis	3 2 2 11 1 1
Amaranthus sp.	2
Antidesma venosum	3
Drypetes reticulata	3
Garcinia livingstonei	33
Oeceoclades saundersiana	22
Ozoroa insignis	33
Pellaea involuta	2
Selaginella eublepharis	2
Uvaria lucida	1
Vernonia sp.	2
Panicum sp.	2 2 2
Pavetta crebrifolia	2 1
Ritchiea capparoides	1 3 3 3
Bombax rhodognaphalon	3 3
Chlorophytum sp. cf *comosum*	1 3
Bridelia micrantha	4 1
Solanum goetzei	1 1 1 1 1 2
Ocimum gratissimum	1 1
Kalanchoe lateritia	2 1 2 2
Psydrax recurvifolia	3 3 2
Gomphrena celosoides	2 2 2
Adansonia digitata	2 3
Grewia sp.	3 1 11 2
Ziziphus pubescens	3 1 5
Ocimum sp.	1 1
Cyphostemma adenocaule	3 1 1 1
Vanilla roscheri	2 2 2 1
Chlorophytum tenerrimum	2 2 221
Psydrax polhillii	3 33
Cissus quinquangularis	2 3
Hypoestes forskaolei	2 3
Aloe kilifiensis	1 11
Laportea lanceolata	1 3
Phyllanthus kaessneri	2 4
Col. No. 3750	1 3
Aerva lanata	1 1 3 3
Bidens pilosa	1 34
Habenaria trilobulata	33

Appendix IV: Analytical procedures for physical and chemical soil variables, based on Hunter (1974[1], 1975[2]), for soils collected from relevés sampled in *kayas* Mtswakara and Fungo.

The following are the analytical procedures used for the analysis of soil samples collected from relevés sampled in the selected *kayas*. The soil variables determined were: density, extractable P, K, Ca, Mg, Zn, Mn, total cations, acid saturation, exchange acidity, pH, organic carbon and clay. Description of the analytical procedures used are given below.

Soil sample density

The density for each soil sample was established by determining the mass of a known volume.

Soil pH

The pH of the soil was determined using a pH electrode placed in a suspension of $10cm^3$ soil: 25cm3 1M KCl which was mixed and allowed to stand for 60 minutes.

Extractable Ca, Mg, and exchange acidity

These soil variables were determined from $2.5cm^3$ soil in $25cm^3$ 1M KCl solution which was stirred for 10 minutes and then filtered through Whatman No.1 filter paper. The reagent used for Ca and Mg determination was a strontium solution consisting of 380g $SrCl_26H_2O$ added to 2 litres of concentrated HCl and made up to 40 litres with de-ionized water. A $5cm^3$ aliquot of the KCl soil filtrate was diluted five times to $25cm^3$ and added to $20cm^3$ of the strontium solution. This was then used to determine Ca and Mg by atomic absorption with the following instrument settings:

(i) Ca was determined at 422.7nm, current of 3.7mA and a slit width of 0.5nm.

(ii) Mg was determined at a wavelength of 589.6nm, current of 3.5mA and slit width of 0.5nm.

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[1] Hunter, A. 1974. Tentative International Soil Fertility Evaluation and Improvement: Soil extraction procedures. State University, Raleigh

[2] Hunter, A. 1975. New techniques and equipment for routine soil and plant analytical procedures: Soil management in Tropical America. State University, Raleigh.

The reagent used for the determination of exchange acidity from the KCl soil extract included a solution of phenolphthalein. This solution was made by adding 5g phenolphthalein powder into 500cm^3 ethanol and adding approximately 500cm^3 water to make 1 litre stock solution, a diluted phenolphthalein solution was then made by adding 300cm^3 of the stock to 10L of de-ionized water. A 10 cm^3 aliquot of the KCl soil extract was diluted to 20cm^3 and added to 10cm^3 of de-ionized water containing 2-4 drops of the diluted phenolphthalein solution. This was titrated with 0.005M NaOH to determine the centimoles of acidity per litre of soil using the following equation:

$$\frac{\text{No. cm}^3\ 0.005\text{M NaOH} - \text{No. cm}^3\ \text{reagent blank}}{2} = \text{centimole of acidity per litre of soil (cmol(+)/L)}$$

Extractable phosphorus, potassium, zinc and manganese were determined using an extracting solution stock, Ammonium bicarbonate (AMBIC) which was prepared as follows:

(i) 197.6g NH_4HCO_3 was dissolved in de-ionised water

(ii) 37.2g disodium salt of ethylenediaminentetra-acetic acid (EDTA) was dissolved in de-ionised water

(iii) 3.7g NH_4F was dissolved in de-ionised water.

(iv) 100cm^3 of concentrated solution of Superfloc (grade N100) (consisting of 10g of the flocculent in 2000cm^3 of water) was measured out.

The above solutions were mixed into 5L of distilled water and brought to a final volume of 10L. The pH of the prepared AMBIC extracting solution was then adjusted to 8 using a strong ammonia solution.

Extractable phosphorus

For the determination of phosphorus, a phosphate colour reagent was prepared by placing 2g antimony potassium tartrate in 2L Pyrex volumetric flask, in which 800cm^3 distilled water was added, and then mixed with 300cm^3 of concentrated H_2SO_4. The mixture was allowed to cool overnight, then 15g of ammonium molybdate dissolved in 600cm^3 of distilled water was added, and the solution was brought to a volume of 2L using distilled water. On the day of use 150cm^3 of the molybdate solution was diluted to 1L using a solution containing 1g gelatine per litre in warm water, and 1g of ascorbic acid was added and mixed.

Phosphate standard stock solution was made by dissolving 0.439g KH_2PO_4 in approximately 400mL de-ionised water contained in a 1L volumetric flask, and then $25cm^3$ 7N H_2SO_4 (i.e. 9.5mL 98% H_2SO_4 made up to 50mL) was added. This provided a stock solution containing $100mgL^{-1}$ phosphorus. From the phosphorus stock solution 0, 10, 20, and $40cm^3$ were taken and each was made up to 500mL with the AMBIC extracting solution. This provided phosphate standards of 0, 2, 4 and $8mgL^{-1}$, that covered soil ranges of 0, 20, 40 and $80mgL^{-1}$.

2.5mL scoop of each soil sample were taken into sample cups, and using the three-aliquot dispenser, 25mL of AMBIC solution were dispensed into each of the sample cups. The mixtures were stirred at 400 revolutions per minute for 10 minutes on multiple-stirrer. The extracts were then filtered through Whatman No.1 filter paper into clean set of cups.

Extractable phosphorus was determined by adding 8mL of distilled water and 10mL of ammonium molybdate colour reagent into a 2mL aliquot of the filtrate. The same dilutions was added to the phosphorus standards and after 40 minutes the absorbance values were read on a photometer set at 670nm.

Extractable K

For the determination of K, a standard stock was made up by diluting 1 000mL of $1\,000mgL^{-1}$ K atomic absorption Setting Standard using distilled water to 2L. The stock solution thus had a concentration of $500mgL^{-1}$. Then 20, 40 and 80 mL of stock K solution were taken and made up to 1L each using ammonium bicarbonate extracting solution (NH_4HCO_3). This provided standards of 0, 10, 20, and 40 mgL^{-1} K solution.

2.5mL scoop of each soil sample were taken into sample cups, and using the three-aliquot dispenser, 25mL of AMBIC solution were dispensed into each of the sample cups. The mixtures were stirred at 400 revolutions per minute for 10 minutes on multiple-stirrer. The extracts were then filtered through Whatman No.1 filter paper into clean set of cups.

Extractable K was determined by adding 20mL of de-ionised water in a 5mL aliquot of the ammonium bicarbonate soil filtrate. The same dilutions were added to the K standards. K was determined by atomic absorption with the following settings:

Wave length (λ) = 766.5nm; Current = 5.0mA; Slit width = 1.0nm.

Extractable Zn and Mn

For the determination of Zn and manganese Mn, standards stocks were made up by taking 100mL of 1000mgL^{-1} Zn atomic absorption standards and diluted with distilled water to make 1L, so that the stock solutions had concentrations of 100mgL^{-1}; and the same was done for Mn. Another stock solution was made by taking 200mL of Zn and 400mL of Mn and was made up to 1 litre with distilled water. Then 0, 30, 60, 120 mL of the latter stock solution were taken and made up to 1L in ammonium bicarbonate extracting solution (NH_4HCO_3). This provided Zn standards of 0, 0.6, 1.2 and 2.4 mgL^{-1}; and Mn standards of 0, 1.2, 2.4 and 4.8 mgL^{-1}.

2.5mL scoop of each soil sample were taken into sample cups, and using the three-aliquot dispenser, 25mL of AMBIC solution were dispensed into each of the sample cups. The mixtures were stirred at 400 revolutions per minute for 10 minutes on multiple stirrer. The extracts were then filtered through Whatman No.1 filter paper into clean set of cups.

Extractable Zn and Mn were determined on the remaining undiluted ammonium bicarbonate soil filtrate with the following atomic absorption settings:
For Zn - Wave length = 213.9nm; Current = 5.0mA; and Slit width = 1.0nm.
For Mn - Wavelength = 279.5nm; Current = 5.0mA; and Slit width = 1.0nm.

Calculations and conversions

The soil sample densities were used for converting the measured concentrations of each soil constituent from mgL^{-1} (weight: volume) to mgkg^{-1} (weight: weight) of soil. To convert mgkg^{-1} to me$100g^{-1}$ (milliequivalents), the mgkg^{-1} concentration of the cations were divided by '10 x the equivalent weight of the cation' i.e. 121.5 for Mg; 200.4 for Ca; 391 for K; and 103 for phosphorus.

Total cations may be regarded as being equivalent to the effective cation exchange capacity (ECEC) of the soil, and acid Saturation as the percent acid saturation of the ECEC. Total cations and acid saturation percentage were calculated using the formulae below:

(i) Total cations = Ca/200.4 + Mg/121.5 + K/391 + Exchange Acidity.

(ii) Acid Saturation = Exch. Acidity /Total cations x 100.

Determination of organic carbon and clay content

The percentages of organic carbon and clay contents of the soil samples were determined by absorbance of light in the infrared region of the spectrum. Nineteen different wavelengths in the near infrared of the spectrum were used to scan the soil samples and the absorbances were recorded on computer. The absorbances were then used in a set of formulae used to calculate organic carbon and clay percentages. The formulae were obtained by scanning a range of soils that had been analysed using standard wet chemistry methods for percentage carbon and percentage clay determination. A multiple linear regression analyses were performed to establish the relationships between the relevant soil constituent and the absorbances of the wavelengths best suited to analyse a particular constituent.

Appendix V: A list of plant species of ethnobotanical importance to Midzichenda community groups (Duruma Giriama and Digo).

The species have been grouped according to family. The families are arranged according to the numbers (given after each family name) in use at the East African Herbarium, in Nairobi, and by which the species are arranged at the CFCU Ukunda office Herbarium. This arrangement sequence, the Hutchinson system (Beentje 1994) groups together related plant families. The species within each family have been arranged alphabetically. For the species whose identification had not been made by the time of reporting, the collection numbers have been used, and have been presented at the end of the list. After the scientific name, follows the vernacular names for each plant, and an abbreviation of the dialect, 'Dur' for Duruma, 'Gir' for Giriama and 'Dig' for Digo. The ethnobotanical information on the Digo was adopted from previous work by the author (Pakia 1997). For each species the use(s) by the different tribal groups are according to the descriptions given by the respondents. Some of the use-form conditions for plant materials identified by the respondents include: *infusion* refers to plant material that is soaked in water prior to use; *decoction* refers to plant material that is boiled prior to use; and *poultice* refers to plant material that is macerated and then used. The meanings and similations of the vernacular names i.e. matching names to hidden meanings (and sometimes the uses) were the author's personal interpretations and conclusions. Some of the local terminologies have been retained in the text for clarity and future comparison.

ADIATACEAE 00

Adiatum comorense (Tard)Verdc. ined

Muzi-wa-dziwe/Nyaa (Dur); *Mbele* (Gir)

The vernacular name "*Muzi-wa-dziwe*" (in Giriama dialect) is descriptive, referring to the species as a "root of the stone". The Duruma use an infusion of the leaf to treat spiritual ailments, and a root piece is used to make a magical jewel that supplements the spiritual ailment treatment. The whole plant is burnt to and the ash is used to make a magical charm that is used to change the sex of unborn baby according to one wish. The change is determined by the incantations made by the medicine man (*mganga*). The Giriama use the leaves (symbolically) as medals and for decorating a graduand medicine man (*mganga-wa-pini*).

CYCADACEAE 00

***Encephalartos hildebrandtii* A.Br. & Bouche var hildebrandtii**

Chitsapu/Mudazi-weru/Mtikiti (Dur); *Kitsapu/Kirori* (Gir)

The Duruma use the stem to make a poultice to treat sceptic swells on any part of the body. Both the Duruma and Giriama use the leaf rachis for weaving traditional baskets (*lungo*). The Giriama use the leaves symbolically as medals for decorating a graduand medicine man.

POLYPODIACEAE 00

***Microgramma lycopodioides* (L.)Copel.**

Chipambame (Dur)

The Duruma burn the whole plant and use the ash to make a love charm that is used to attract a hesitant lover or prospective employer; or to provide defence in court cases, and to influence the judgement to be in one's favour.

Platycerium alcicorne* Desv. Syn *P. vassei

Mutula-manzie (Gir)

The vernacular name literally means "one who sits on others". The Giriama burn the whole plant and use the ash to make a love charm that is used to induce leadership and dominance among colleagues. The individual wins the respect of the others and become popular (*menzwa*). Infusion of the whole plant is also used for treating convulsions (*nyuni*).

SELAGINELLACEAE 000

***Selaginella eublepharis* A.Br.**

Nyaa (Dur)

No use for the species was identified.

ANNONACEAE 008

***Artabotrys modestus* Diels ssp. *macranthusi* Verdc.**

Mwangajine (Dur)

The Duruma use a decoction of the root to treat spiritual ailments.

Asteranthe asterias* (S. Moore)Engl. & Diels spp. *asterias

Muzondohera-nguluwe/Mulungu (Dur); *Muszhondoheranguluwe* (Gir); *Mzondohera-nguluwe* (Dig).

The Duruma use a decoction of the root and an infusion of the leaf to treat sore throat, spiritual ailments and gonorrhoea. The Duruma and Giriama make a root poultice and apply it to the neck and chest, while some is licked for sore throat and cough (*chigwashe*). The Digo use the root decoction and leaf infusion to treat ailments caused by spirits (*mwanamlungu*).

***Monanthotaxis fornicata* (Baill.)Verdc.**

Mudzala/Mudzala-doe (Dur); *Karori* (Gir); *Mngweni-mlume/Mngweni-madevu* (Dig)

The Duruma use a decoction of the root to treat spiritual ailments. The Giriama use infusion of the leaf and drink decoction of the root to treat spiritual ailments. The Digo use a decoction of the root to treat pre-natal stomach complications. The root decoction is also used to treat pains experienced in menses (*shango*), and for general body pains.

***Monanthotaxis faulkenerii* Verdc.**

Karori-katite (Gir)

The vernacular name is descriptive, referring to the species as a smaller size form of another species, *Monanthotaxis fornicata* i.e. *Karori*. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

***Monodora grandidiera* Baill.**

Mukeli (Dur); *Mucherere/Muvipo/Mubulushi* (Gir); *Mkerye/Mkele/Mlala-mwereru* (Dig)

The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments. The Digo use the decoction of the root to treat rectal problems (*mjiko*).

***Sphaerocoryne gracilis* (Engl. & Diels) Verd.**

Mubulushi (Dur); *Mbulushi* (Dig)

The Duruma use a decoction of the root and an infusion of the leaf to induce penile erection, whose failure believed to be spiritual powers (*bulushi*).

***Uvaria acuminata* Oliv.**

Mudzala/Kadzala-doe (Dur); *Murori/Mudzala-doe* (Gir); *Mngweni-mchetu/Mngweni-mdide* (Dig).

The fruits are edible. The three communities use a decoction of the root and an infusion of the leaf to treat spiritual ailments and convulsions. The Duruma use a piece of root to make a protective charm (*ngata/chidau*) against evil spirits that mate women in dreams and prevent them from conceiving. The Digo use a root decoction to treat stomachache and waist pain in pregnancy (*nyongoo*), coughs and snakebite.

***Uvaria faulknerae* Verdc.**

Mudzala-komba/ Mudzala-ubomu/ Dzala-bomu (Dur)

The vernacular names "Mudzala-ubomu and Dzala-bomu" are descriptive, identifying the species as a bigger size of *Uvaria acuminata* i.e.*Mudzala*. The Duruma use a decoction of the root and an infusion of the leaf to treat spiritual ailments and convulsions. Pieces of root are used for making a magical jewel (*pande*) that is used for protection against "evil eye" and provocation by other people.

Uvaria lucida* Benth. spp. *lucida

Mudzala-komba/Mudzala-ubomu/ Dzala-bomu (Dur); *Mudzala* (Gir); *Mngweni-mlume/Mngweni-madevu/Mngweni-mkulu* (Dig).

The vernacular names "*Muzala-ubomu* and *Dzala-bomu*" in Duruma dialect and "*Mungweni-mkulu*" in Digo dialect, are descriptive of the species as a bigger form *Uvaria acuminata*. Fruits are edible. The Duruma and Digo use a decoction of the root and an infusion of the leaf to treat spiritual ailments and convulsions. The Duruma use a piece of root to make a magical jewel (*pande*) that is used for protection against "evil eye" and provocation by other people. The Giriama use the leaf infusion and root decoction to treat spiritual ailments.

***Uvariodendron kirkii* Verdc.**

Mwangajine (Dur); *Murori* (Gir); *Mwangajine-mlume/Mzondohera-nguluwe* (Dig)

The species is commonly used for building poles. The Giriama use an infusion of the leaf and a decoction of the root against spiritual ailments. The Digo use a decoction of the root to treat convulsions and blood diarrhoea.

HERNANDIACEAE 013

Gyrocarpus americanus* Jacq. spp. *americanus

Muhwahwa (Dur); *Mchusa* (Dig)

The Duruma use the stem to make drums. The Digo use a decoction of the leaf as an antiseptic; the trunk is sawn into soft timber, and also used for constructing boats.

MENISPERMACEAE 023

Cissampelos pareira* L. var. *hirsuta

Kabugu (Gir); *Chishikio-paka/Chisikiro-paka* (Dig)

The syntax "*Ka-*" (in Giriama dialect) and "*Chi-*" (in Digo dialect) are small size descriptive; and the remaining part of the name "*-bugu*" in Giriama refers to the life-form of the species as a climber/creeper; and in Digo "-shikio-paka" refers to cat's ear. The Digo name was derived from the close resemblance of the species leaves to cat's ears. The Giriama burn the leaves and use the ash to make a charm for treating bewitched victims. The Digo chew the leaves while making a traditional prayer for success in any event ahead of them (war or sport), and roots are chewed to treat snakebite. A decoction of the root is used to treat stomach-ache, and leaves are used for bandaging.

CAPPARIDACEAE 036

Boscia angustifolia* A. Rich. var. *angustifolia

Mugu (Dur)

The Duruma use the stem for building poles.

***Boscia* sp.**

Muzikaha (Gir)

Kuzikiha in the Giriama dialect means 'to treat'. The vernacular name thus describes the species curative powers. The Giriama use infusion of the root and the leaf to treat spiritual ailments.

***Capparis fascicularis* DC. var. *scheffleri* (Gilg & Bened.) DeWolf**

Mupopolio/Muvwada-paka (Dur)

The vernacular name "*mvwada-paka*" describes the species scratchy nature (because of the thorns) like the cat's claws. The Duruma use a decoction of the root to treat veneral diseases (*tego*) characterised by stomach problems and pains in urinary tract.

Capparis vimenea* Oliv. var. *vimenea

Mupopolio/Muvwada-paka (Dur); *Mutoli* (Gir); *Chikombe-tsui* (Dig).

The vernacular name "*Chikombe-tsui*" in Digo reflects the species scratchy nature (due to the thorns) like the leopard's claws. The Duruma and Digo use a decoction of the root to treat veneral diseases (*tego*) associated with stomach problems and pains in urinary tract. The Giriama use a decoction of the root to organise the stomach and reproduction in women. The use of the decoction of the root promotes conception in women. The Digo apply a poultice of the root on boils and other sceptic swells (*chifundo*).

***Cleome* sp.**

Mwangani (Dur)

The species is used as a vegetable.

***Thilachium africanum* Lour**

Mkizataa/Mtunguru (Dur);

The Duruma and Giriama use the root-tuber as food especially during famine periods.

POLYGALACEAE 042

***Carpolobia goetzei* Guerke**

Mukayukayu/Mubulushi (Dur)

The Duruma use a decoction of the root to induce penile erection if the erection problems are as a result of spiritual powers "*bulushi*". Leaves are also chewed for the same.

***Oxygonum* sp.**

Chindiri (Dur); *Kimbiri* (Gir)

The species is used as a vegetable.

CRASSULACEAE 045

Kalanchoe lateritia* Engl. var. *lateritia

Gonzi-chireka/Muchira-wa-gonzi (Dur)

The Duruma use the whole plant to make an infusion used during tribal cleansing ceremony. The infusion is also used to treat ailments caused by witchcraft as well as to induce protection against witchcrafting activities.

***Kalanchoe obtusa* Engl.**

Gonzi-chireka (Dur)

An infusion of the plant is used by the Duruma to treat *chirwa* (a disease similar to kwashiorkor, caused by promiscuity and sexual relations among family members). A poultice of the whole plant is mixed with seeds as a pesticide.

PORTULACACEAE 056

***Talinum caffrum* (Thunb.) Eckl. & Zeyh.**

Komba (Dur/Gir)

Both the Duruma and Giriama use the species as a vegetable.

***Talinum portulacifolium* (Forssk.)Schweinf.**

Komba (Dur/Gir)

Both the Duruma and Giriama use the species as a vegetable.

***Talinum* sp.**

Mwerere (Dur)

The Duruma use the species as vegetable.

AMARANTHACEAE 063

***Achyranthes aspera* L. var. aspera**

Muphulula/Mulazakoma/ Chikuna-mlundi (Dur); *Muphumbuluzi/Muphulula-mbuzi* (Dig) *Mphumbuluzi* (Dig).

The vernacular name "*Chikuna-mlundi*" literally means that which is a leg scratcher, possible because of the tendency of its seeds sticking in a scratching manner on to the bare leg. The

Duruma burn the leaves and use the ash to make a charm that is used to treat veneral diseases (*tego*). A leaf poultice is applied on boil and other sceptic swells to facilitate its bursting and quick healing.

***Gomphrena celosoides* Mast**

Garamata (Dur); *Miya* (Gir)

The Duruma burn the leaves and use the ash to make a magical charm that is used to treat madness. A decoction of the leaf is used as a protective charm against "evil eye" and provocation from jealous or disgruntled neighbours and friends.

***Psilotrichum sericeum* (Roxb.)Dalz.**

Demu (Dur)

The plant is used by the Duruma as a vegetable.

***Psilotrichum scleranthum* Thwaites**

Chibiriti-tsaka (Dur); *Kabaruti-tsaka* (Gir)

In both vernacular names, the syntax "*-tsaka*" identifies the species as being a forest type of another sister species "*Chibiriti/Kabaruti*". The Duruma use a decoction of the root to treat convulsions. The Giriama burn the leaves and use the ash to a make charm that is used with a view to win a court case or to escape from trouble makers and inconveniences in general.

***Pupalia lappacea* (L.)A.Juss.**

Garimata (Dur); *Jirimata/Jirimata-chetu* (Dig)

The Duruma burn the whole plant and the ash is applied on the head of a baby to induce salivation in the baby. The Digo use a decoction of the root to treat veneral disease.

THYMELAEACEAE 081

***Synaptolepis kirkii* Oliv.**

Kakwaju-katite (Gir); *Njira-mbiri/Mlunga-njira* (Dig)

The vernacular name in Giriama dialect is descriptive for smaller size (*katite*) of this species which has resemblance to *Tamarindus indica* (*Mu-kwaju*). While the vernacular name in Digo dialect, describes the repeated paired branching of the species. The Giriama use an infusion of

the leaf and a decoction of the root to treat bewitched person. The same is used to treat a person suffering from spiritual ailments. The Digo grind the fruit to take it against abdominal worm infection. An infusion of the leaf is used to treat convulsion, and warmed leaves are used for bandaging.

DILLENIACEAE 085

***Tetracera boiviniana* Baill.**

Mukala-fisi (Dur/Dig); *Mukayukayu* (Gir); *Mkalafis* (Dig)

The Duruma use a decoction of the root to treat stomach ailments (*shango*), and veneral diseases (*tego*). The Giriama use the timber to make traditional beds.

***Dichapetalum zenkeri* Engl.**

Mtundukula (Dur); *Mtsonga-nyomba* (Dig)

The fruits are edible. The Digo use root decoction to treat stomach-ache, gonorrhoea, and menstrual disorders (*chau-cha-mwadzulu*), and for preventing pre-mature birth.

FLACOURTIACEAE 093

***Grandidiera boivinii* Jaub**

Mkarazo (Dur); *Muvundza-jembe* (Dur/Dig)

The Duruma use a decoction of the root and an infusion of the leaf to treat spiritual ailments. Pieces of roots are chewed for a cold and for tonsilitus. The Duruma and Digo apply a root poultice onto boils and other sceptic swellings to facilitate bursting and hasten healing of the wound. The Digo use a decoction of the root to induce diarrhoea in event of poisoning or stomach problems.

***Flacourtia indica* (Burm.f.) Merrill**

Munyondoya (Dig)

The fruits are edible.

PASSIFLORACEAE 101

Adenia gummifera* (Harv.)Harms var. *gummifera

Mugore (Dur); *Mgore/Gore* (Dig)

The Duruma use a piece of stem to make a protective magical charm. The Digo use a decoction of the root to treat coughs and colds.

***Adenia kirkii* (Mast.) Engl.**

Chigandzi-msuhu (Dur); *Mugore* (Dur/Gir); *Mtsotsone* (Dig)

The Duruma use a decoction of the stem and the root to treat prolonged menstruation, and to control the menstrual pattern or excess bleeding in menstruation. The Giriama use a decoction of the root and an infusion of the leaf to treat prolonged menstruation. The Digo use the root as poison against pest rats.

***Schlechterina mitostemmatoides* Harms**

Mufunga-nyama (Dur); *Mwanangira* (Gir)

The vernacular name in the Duruma dialect literally means "tying an animal". The Duruma use the stem as a tying material in snares, but is less preferred to other tying materials. The Duruma burn the leaves and use the ash to make a protective charm against evil eye. The Giriama use an infusions of the leaf to treat spiritual ailments.

CUCURBITACEAE 103

***Kedrostis heterophylla* A.Zimm.**

Mumavimavi (Dur)

The plant is known to have a strong unpleasant smell, hence named after faeces (*mavi*). The Duruma burn the species and use the ash to make a charm that is used to bewitch a person so that family members and friends hate him/her. The victim experiences hate and will be criticised by everybody he meets. The Duruma use an infusion of the whole plant during a traditional cleansing ceremony. The Duruma use an infusion of the leaf to treat child diseases (*chirwa*) due to promiscuity and sexual relationships between persons in a family.

***Lagenaria sphaerica* (Sond.)Naud.**

Mwambo/Mzigande (Dur)

The Duruma use the stem for tying skin onto the drum stem-trunk.

***Mormodica boivinii* Baill.**

Kadhimi-kapaka (Gir)

The name is decriptive, identifying the resemblance of the species (leaves) to 'cat's tongue'. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

***Zehneria pallidinervia* (Harms) C. Jeffrey**

Mwanyoka (Gir)

The vernacular name literally means "snake". The Giriama use a decoction of the leaf (together with other species) to treat snakebites. Ash from burnt leaves are used for making protective charm against snakebites.

CACTACEAE 107

***Opuntia vulgaris* Mill.**

Mwatsa (Dur)

The Duruma and Giriama use the species as living fences around cowsheds and homesteads. The fruits are edible.

OCHNACEAE 114

***Ochna mossambicensis* Klotzsch**

Mucherere (Gir); *Mtsometsome* (Dig)

Fruits are edible. The Giriama use the leaf infusion to treat spiritual ailments.

***Ochna thomasiana* Engl. & Gilg**

Mwarika/Charika (Dur); *Mukwalino/Mudhahabu* (Gir); *Mtsonga-mahana* (Dig)

The Duruma and Giriama use the stem for building poles. The Giriama use a decoction of the root to treat bewitched person. The Digo use pieces of sticks for making fish-traps, and a decoction of the root to treat menstrual disorders (*chau cha mwadzulu*), and to avoid miscarriage. Leaves are used to treat leprosy at an early age.

MELASTOMATACEAE 120

***Memecylon amaniense* (Gilg)A. & R.Fernandes var. A.**

Chitambuu (Dur). No use for the species was identified.

***Memecylon fragrans* A. & R. Fernandes**

Chaloe (Dur)

The Duruma use the stem for building poles.

***Memecylon* sp.**

Mukadhimi-kapala (Gir)

The Giriama chew the root to treat coughs (*kipanya)*.

COMBRETACEAE 121

***Combretum hereroense* Schinz**

Mchira-ng'ombe (Dur); *Mufunga-mambo* (Gir)

The Duruma use an infusion of the leaf and a decoction of the root to treat chest pain. The Giriama use the root as a victory charm especially in court cases' and to avoid trouble in general.

***Combretum illairii* Engl.**

Mwamba-ngoma (Dur/Dig); *Muchirang'ombe* (Dur); *Mufunga-mambo* (Gir)

The vernacular names are all descriptive. *Mwamba-ngoma* means making drum, *Mchirang'ombe* means a cow's tail (in Durma dialect), and *Mufunga-mambo* means 'a conclusion of issues'. The Duruma use the an infusion of the leaf to treat spiritual ailments. The Duruma also use a decoction of the root to treat veneral diseases (*tego*), and pieces of sticks are used for making protection charm (*fingo*) against witchcrafting activities. The stem used in fixing skin onto the wooden drum trunk. Pieces of sticks are used by the Duruma to make fish trap (*mgono)*. The Giriama use a piece of root to make a magical charm that is used to conclude all persistent problems such as a court case, follow-ups by troublesome debtor, land disputes or eviction.

***Combretum schumannii* Engl.**

Muryanyani/Mukongolo (Dur); *Muryanyani* (Gir); *Mkongolo/Mryanyani* (Dig)

The mature stem is widely used for building poles, especially for the stronghold standing poles in traditional grass house. This species is reputed to produce good wood for building poles, for firewood and for charcoal burning, especially after maturity and development of the

heartwood (*ngarange*). The stems are also used for covering pit latrines. The Duruma use a piece of root to make magical jewellery (*pande*) that is used for protection against evil spirits. An infusion of the leaf is used as a cold bath to avert evil spirits. The Giriama use a decoction of the root to treat spiritual ailments and the hollow stem is used for making traditional beehives.

***Pteleopsis* sp.**

Mutula-makwalala

The stem is used for building poles.

***Terminalia pruniodes* Laws**

Mwarambe/Mwanga-msuhu (Dur)

The species is used for building poles and for firewood.

***Terminalia spinosa* Engl.**

Mwanga (Dur/Gir/Dig)

The Duruma and Giriama use the stem for building poles, and for making pestles. The Duruma use a decoction of the root to treat stomach ailments (*shango*). The Giriama use a decoction of the root and an infusion of the leaf to treat a bewitched person. The Giriama also use pieces of stem to make spiritual markers (*vigango*) for dead persons who held respectable positions in the community or in the family.

GUTTIFERAE 126

***Garcinia livingstonei* T. Anders.**

Mfidzofidzo (Dur/Dig); *Mufodzohi* (Gir)

Lufodzohi in Giriama dialect means 'stirring rod', and the species acquired its name from its use. A three or two pronged twig is commonly used for making stirring rods for cooking (*lufodzohi/lifidzo*) by all the three groups. Fruits are edible.

TILIACEAE 128

***Corchorus olitoralis* L.**

Chikosho (Dur). The Duruma use this species as a vegetable.

***Grewia densa* K. Schum.**

Mukone-chibugu (Dur); *Mukone-kithaa* (Gir)

In the Duruma dialect, this species is described as a climbing form of *Grewia plagiophylla* (*mkone*). The Giriama use a decoction of the root and an infusion of the leaf to avert diseases and spiritual curse following promiscuity and sexual relationships between family members (*vitiyo*).

***Grewia forbesii* Mast**

Mubavubavu (Dur/Dig); *Mubavu-ng'ombe* (Gir); *Mubavubavu-mkulu* (Dig)

The species with vernacular names constituting syntax "*-bavu-*" generally refer to their importance in treating convulsions which is partly diagnosed by the fast movement of the rib-cage (*mbavu*) as the victim struggles for breath. The syntax "*-ng'ombe*" in Giriama, and "*mkulu*" in Digo are descriptive, identifying the species as a larger form of *mubavubavu*. A decoction of the root is commonly used to treat convulsions, caused by a spiritual bird called *nyuni*. This possible reflects why in all cases, convulsion treatment involves the use of one or two chicken that are flown to scare off the other (*nyuni*) bird. The Giriama use a decoction of the root and an infusion of the leaf to treat chest problems in children. Pieces of dry sticks are burnt and the flame used in honey harvesting from beehive.

***Grewia holstii* Burret**

Mubavubavu (Dur); *Mbavubavu/Msokoto* (Dig)

The Duruma use a decoction of the root to treat convulsions, and also to treat spiritual and stomach ailments (*tsango*). The Digo use a decoction of the root to treat asthma and chest-pains in children.

***Grewia plagiophylla* K. Schum.**

Mukone (Dur/Gir); *Mkone* (Dig)

This is one of the culturally important species in spiritual values (*mihi-ya-peho*). Symbolic uses of the species were recorded in all the three tribes. These included the use of the sticks in burial rites by Duruma; use of sticks to make ancestral markers or reminders (*koma*) by the Giriama; and the use of the poles to build a sacred hut (*chifudu*) in which other species are not used (except *Ormocarpum sennoides*) by the Digo. All these ethnic groups use a leaf poultice

to cleanse a place or person following mistakes that are likely to annoy the ancestors or after a calamity e.g. loss of a family member. The fruits are edible and stems are used for building and for making domestic tools (tool-handles, bows and arrows). The inner bark is used for tying materials.

The Duruma use an infusion of the inner bark or the leaf to treat diarrhoea. The Giriama use an infusion of the leaf to treat ailments caused by witchcraft (*matsai*). A decoction of the inner bark is used to treat stomach-ache and blood diarrhoea. The Digo use a decoction of the root to treat complications in pregnant women and also after giving birth. An infusion of the leaf is used for diarrhoea, and also used as a cold bath for new-born babies to make them grow stronger.

***Grewia truncata* Mast.**

Mubavu-ng'ombe (Gir)

In the vernacular name the syntax "*ng'ombe*" (cow) identify the species as a larger form of the "*mubavubavu*". The Giriama use a decoction of the root and an infusion of the leaf to treat ribcage complications, chest problems and convulsions.

STERCULIACEAE 130

***Cola minor* Brenan**

Muhosa-kitsoka (Gir); Chitsapu (Dig)

The vernacular name, in Giriama dialect, literally means "exhausts the axe", as is believed to have very hard wood. The Giriama use the stem for building poles and for making pestles. The species is reputed to be good for charcoal making and as firewood.

***Dombeya tylori* Bak. f.**

Mugwale/ Muchira-ng'ombe (Gir)

The second vernacular name (*Muchira-ng'ombe*) identifies the species as a 'disguise' of *Combretum illairii*. This can be a general misidentification or the species can substitute for each other in function. The Giriama use the stem for building poles, and a decoction of the root or the leaf is used to treat stomach-ache.

Sterculia appendiculata K. Schum.

Mufune (Dur/Gir); *Mfune* (Dig)

The stem is sawn into soft wood timber planks mainly used as roofing poles when iron-sheets are to be used. Leaves are used for making a poultice that is used during cleansing ceremonies in the *kaya*. The Duruma use a decoction of the root to treat stomach ailments and high blood pressure. An infusion of the leaf is used as cold bath to avert evil spirits. The Digo burn the leaves and use the ash to make a charm to attract a lover.

Sterculia rhynchocarpa **K. Schum.**

Mugoza (Dur); *Muoria* (Gir); *Mgoza* (Dig)

The inner bark is commonly used as tying material. Leaves are used for making a poultice used during cleansing ceremonies in the *kaya*. The Digo use an infusion of the leaf to induce labour pains in pregnant women, to treat stomach-ache and diarrhoea. A decoction of the root is used for gonorrhoea.

BOMBACACEAE 131

Adansonia digitata **L.**

Muuyu (Dur/Gir/Dig); *Mkulu-kazingwa* (Dig).

Fruits are edible and also used as food spice by the Duruma, Giriama and Digo. An infusion of the leaf is used during cleansing ceremonies in the *kayas*. The Duruma use a decoction of the root and the bark to treat dizziness, nausea, headache and high blood pressure. A decoction of the bark harvested from four sides (eastern, western, southern and northern) is used to treat bewitched person. The Digo use an infusion of the leaf to treat convulsions and child diseases associated with sexual promiscuity among married couples (*chirwa*). The fruit shell is used by the Duruma as a container for collecting palm sap during tapping. The mature trees with a cave are usually used as traditional praying grounds and are considered sacred (*panga*).

Bombax rhodognaphalon **Engl.**

Mware (Dur/Gir/Dig)

The trunk is source of timber, and poultice made from the leaf is used in making a charm for cleansing ceremonies in the *kayas*. The Giriama senior herbalists use the poultice from the

leaf as a cold bath to foretell the future events and demands of the ancestors. The Duruma use a decoction of the root to treat stomach-ache and diarrhoea (*ndani-za-peho*). The Digo use a decoction of the root to treat asthma (*pumu*) and whooping-cough (*chivwadulo*).

MALVACEAE 132

Abutilon zanzibaricum Mast.

Muhangusa-mavi/Muvandoha (Dur); *Mugalagala/Muhangusa-mavi* (Gir); *Mtsutsatsaru/ Mbangula-mavi* (Dig). The vernacular names *Muhangusa-mavi, mvandoha, mbangula-mavi,* are descriptive meaning faecal cleaner, associating the species with its use as a toilet paper.

***Gossypioides kirkii* (Mast.) J.B.Hutch.**

Pamba-tsaka (Dur); *Pambamwitu/Mgagamwe* (Dig)

The Duruma mixe a poultice from the leaf with oil, and smear it on new-born baby to foster good health (*chiza*).

Hibiscus altissimus

The Duruma use a decoction of the root to treat ailments caused by witchcraft.

***Hibiscus faulknerae* Vollesen**

Mtsunga-ng'ombe/Murembeganga (Dur); *Mtsungula/Murembeganga* (Gir)

The Duruma burn the leaves and use the ash to make a charm that promote business (*luvuho*) and induce good luck and popularity in a person. The Giriama use a decoction of the root to treat convulsions. The root decoction (with others) is used to rinse and also to smoke the mouth for toothache. The Giriama also use poultice from the leaf to make a charm that is used to induce good health (*chiza*) to new-born babies.

***Thespesia danis* Oliv.**

Muhowe (Dur/Gir/Dig); *Muhohe* (Gir)

The fruits are edible. These communities use the stem for building poles, and for making bows and cooking sticks (*mwiko*). A poultice from the leaf is used in traditional cleansing ceremonies. The Duruma use seven holeless leaves, with pieces of root, and a uterus of a chicken to treat barrenness in women. A decoction of the root and an infusion of the leaf are

used to treat convulsions (*nyuni wa kugwigwida*). The Duruma use pieces of sticks in burial rites. The Digo use a decoction of the root and an infusion of the leaf to treat stomach ailments in pregnant women. Ground root is applied on boils and other sceptic swells.

ERYTHROXYLACEAE 135

***Nectaropetalum kaessneri* Engl. var. kaessneri**

Muryalutswa (Dur)

The Duruma use the stem for building poles.

LINACEAE 135

***Hugonia castaneifolia* Engl.**

Chikuro-chibomu/Chikuro-cha-nyoka/Mbare (Dur); *Kikuro/Mubarawa* (Gir)

The vernacular name "*Chikuro-cha-nyoka*" in Duruma dialect (*nyoka* means snake) which is associated with the use of the species. The Duruma and Giriama burn the roots and the leaves and use the ash to make charm that can be used to treat and protect against snakebite. Chewed root or a decoction of the root is taken as a first aid to treat snakebites, prior to advanced medication. A piece of root can be used to treat colds, stomach ailments, spiritual ailments, convulsions and as a protection charm (*fingo*). The Duruma chew the root to treat chest pain.

EUPHORBIACEA *136*

***Acalypha echinus* Pax & K. Hoffm**

Muvundza-jembe (Dur); *Mubulushi-ulume* (Gir)

The vernacular name identifies the species as a male (*-ulume*) form to another (*mubulushi*). The Duruma and Giriama use the stem for building poles. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

Acalypha fruticosa* Forssk. var. *fruticosa

Muvundza-jembe/Msasa-ngudu (Dur); *Mutsatsa* (Gir); *Mtsatsa/Chitsasa/Mphatsa* (Dig)

The stem is used for building poles. The Giriama use a decoction of the root and an infusion of the leaf to treat spiritual ailments. The Duruma use decoction of the root and the leaf to induce vomiting, especially after snakebite. The Digo give a decoction of the leaf to pregnant women to induce labour pains. In early pregnancy the decoction is believed to cause abortion.

Acalypha neptunica* Muell. Arg. var. *neptunica

Muvundza-jembe (Dur); *Mutsatsa-ulume/Mubarawa* (Gir); *Mvundza-jembe* (Dig)

The vernacular name, in Giriama dialect, identifies the species as a male (*-ulume*) form to *Acalypha fruticosa*. The Giriama use an infusion of the leaf and a decoction of the root to treat bewitched person.

***Antidesma venosum* Tul.**

Mdzenga-tsongo (Dur/Dig)

The Digo rub root bark chips to fishing nets in order to increase the strength of the net to catch more fish.

***Aristogeitonia monophylla* Airy Shaw**

Mwembe-msuhu (Dur)

The vernacular name identifies the species as a forest (*-msuhu*) type of a mango tree.

The Duruma use the stem for building poles.

***Bridelia cathartica* Bertol.f.**

Mkalakala (Dur/Gir); *Musimbiji* (Gir); *Mwambeberu* (Dig)

The fruits are edible. The Duruma and Giriama use a decoction of the root and an infusion of the leaf to treat convulsions. The Giriama, in addition, use a decoction of the root and an infusion of the leaf to treat spiritual ailments. The Digo use a decoction of the root to treat complications in pre-natal and in menses.

***Croton pseudopulchellus* Pax**

Mulaga-pala (Dur); *Muyama/Mufukizo* (Dur/Gir)

The Duruma and Giriama use the stem for building poles, and dry sticks are used to improve the flavour of the milk by smoking (*kufukiza*). This use gave the species its vernacular name *Mufukizo*. The Duruma use a decoction of the root and an infusion of the leaf to treat convulsions, stomach problems associated with ulcers (*mburushi*), body swells (*mwadzulu*), and low blood and water content in the body (*tambazi*). The Duruma use an infusion of the leaf as a cold bath to initiate a herbalist into the profession. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

***Croton talaeporos* A.R. Sm.**

Mbono-koma (Gir)

The Giriama use a decoction of the root (mixed with other species) and an infusion of the leaf to treat general body pains and body swellings (*mwadzulu*). The species is least preferred for firewood because it produces heavy smoke that has a strong unpleasant smell.

***Euphorbia nyikae* Pax var. *neovolkensii* (Pax) Carter**

Mwatsa/Mwatsa-komba (Dur); *Ganga* (Dur/Dig); *Kithongothongo/Chaa/ Chaa-komba* (Gir).

The Duruma and Giriama use the species as a living fence around the cow shade. Pieces of dry sticks are burnt and used as candles to light the house. The Duruma use a piece of stem to make a protective charm (*chirapho*) against evil doers and thieves. The latex is commonly used for fish poisoning. The Giriama use the latex as glue for sticking feathers onto arrow shafts. The Digo apply the latex on boils and other sceptic swells.

***Euphorbia tirucalli* L.**

Muphila (Gir)

The Giriama use the species for veterinary medicine. The latex is applied on cattle skin to kill parasites such as bugs. Latex used for fixing feathers on arrow shafts.

***Euphorbia wakefieldia* N.E. Br.**

Chidzatsa/Kamwatsa (Dur)

The Duruma use a decoction of the stem after birth to treat severe abdominal pains.

Flueggea virosa* (Willd) Voigt ssp. *virosa

Mukwamba (Dur/Gir); *Mkwambachitu/Mkwamba-mchetu* (Dig)

The Duruma and Giriama use a decoction of the root (with other species) to treat bewitched person. In addition the Duruma use the decoction of the root to treat veneral diseases (*tego*), while the Giriama use the it to treat convulsions. The Digo use a decoction of the root to treat stomach-ache (*shango*) and kidney problems. The decoction of the root is also used to ease pains during labour.

***Jatropha* sp.**

Msabuni/Kabono-koma (Dur)

The Duruma chew the tuber to induce vomiting and diarrhoea after snakebite and poisoning. The root is burnt and the ash is used to make a protective charm against snakebites and poisoning. The fruits are used as a detergent.

Mildbraedia carpinifolia* (Pax) Hutch. var. *carpinifolia

Muvundza-jembe (Dur); *Mtsonga-nyomba* (Dig)

The Duruma use a decoction of the root and an infusion of the leaf to treat spiritual ailments, and the stem is used for building poles. The Digo use the stem to make arrow shafts (*nyomba*).

***Phyllanthus* sp.**

Kaithima-kalume (Gir)

The vernacular name identifies this species as a male (*-kalume*) type of *Agathisanthemum bojeri* (*Kaithima*). The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments. The Digo use the leaves to make a charm that can be used to end court cases and any troubles facing an individual.

***Phyllanthus reticulatus* Poir.**

Mukwamba (Dur); *Chikwamba/Mkambakamba/Mkwamba-lungo* (Dig)

The Duruma and Digo use a decoction of the root and an infusion of the leaf to treat convulsions. The Digo use an infusion of the leaf as a cold bath to treat spiritual ailments, and the infusion is drunk to treat snakebite. Root bark chips are rubbed on fishing nets to improve their strength and catching powers.

***Pycnocoma littoralis* Pax**

The Duruma use the stem for building poles.

***Ricinus communis* L.**

Mbono (Dur/Gir/Dig); *Muono* (Dig)

The seeds are cooked to produce oil that is used in the *kaya* cleansing ceremony in all *Midzichenda* communities. The Duruma and Digo chew the seeds or take the oil orally to induce vomiting after snakebite. The Digo apply ground root poultice on boils and other sceptic swells.

***Spirostachys africana* Sond.**

Mutanga (Dur)

The Duruma use a decoction of the root or the bark as an antiseptic, and a poultice of the root is applied on to a new-born's umbilical cord immediately after it has been cut to help in healing of the wound.

***Suregada zanzibariensis* Baill.**

Chikuro/Mudimu-tsaka (Dur); *Mudimu-wa-tsakani* (Gir); *Mdimu-tsaka* (Dig)

The syntax "*tsaka(ni)*" identifies the species as a forest form of lime tree (*mudimu*). The Duruma and Giriama use a decoction of the root to treat body swellings (*mwadzulu*). The stem is used for building poles. The Digo use a decoction of the root for general body pain, for pains during menstrual periods (*chau-cha-mwadzulu*) and to avoid premature birth.

***Synadenium pereskiifolium* (Baill.)Guill.**

Kimangio (Dur); *Mwatsa* (Gir); *Chiyuyu/Tupa* (Dig)

The latex from the stem is commonly used for fish poisoning. Pieces of stem are used for fish poisoning. The Duruma use the latex as a pesticide, to protect seeds against borers.

***Thecacoris bussei* Pax**

Chigodani/Kagodani (Dur)

The Duruma use a decoction of the root to treat stomach-ache and diarrhoea, and in children the decoction is used to stimulate salivation.

***Tragia furialis* Bojer**

Lwavi (Dur/Gir)

This species has stinging hairs. The Duruma use a decoction of the leaf to treat diarrhoea. Leaves are burnt and the ash is mixed with coconut oil, then applied on the body to treat scabies and other skin diseases especially those resulting from witchcraft. The Giriama use a poultice from the leaf in coconut oil to treat scabies.

***Uapaca nitida* Muell.Arg.**

Mkoko-luanda (Dur)

The Duruma use the stem as building poles.

CAESALPINIACEAE 146

***Afzelia quanzensis* Welw.**

Mubambakofi(Dur/Gir); *Mwamba* (Gir); *Mbambakofi* (Dig)

The wood of this species is widely used as source of timber due to its high quality. Duruma and Giriama use the stem for making mortars, for making household utensils like plates (*muvure*) and a traditional three-legged stool. The Digo use a decoction of the root to treat chest pain, stomach ailments and as a remedy for post-natal complications.

***Brachystegia spiciformis* Benth.**

Murihi (Dur/Gir); *Mrihi* (Dig)

The species is used as a source of timber, and this use is increasing becoming important in that use with the scarcity of good quality timber species. The Duruma and Digo use the inner bark to make rope that is used especially in house building; the Duruma use the rope for making fish trap (*tsatsa*), and is preferred in this use than other species. The Duruma also use the stem for making mortar, and mature twings are used for making hand-hoe handles. The Giriama use the species for charcoal burning.

***Caesalpinia bonduc* (L.)Roxb.**

Muburuga/Mutere (Dur); *Mburuga/Mbate* (Dig).

The Digo use the fruits in a local game (*chigogo*). Ground seeds are used as eye-drops to treat internal clots (*mwana*), and an infusion of the leaf is used to treat asthma. A decoction of the root is used to treat menstrual complications or for preventing miscarriage.

***Caesalpinia insolita* (Harms)Brenan & Gillett**

Mtambuu (Dur)

The Dururma use the stem for building poles. Women chew the stem buds so as to dye their lips.

Cassia singueana* (Del.)Lock, Syn *Senna singueana

Muhumba/Muhumba-chitu (Dur); *Muhumba* (Dig)

The Duruma and Digo use a decoction of the root to treat stomach ailments and pregnancy complications (*nyongoo*). The Duruma use a decoction of the root to treat general body pains and veneral diseases (*tego*) diagnosed by painful sensation when passing urine.

***Cassia* sp.**

Muhumba-ng'ombe (Dur)

The syntax *"ng'ombe"* identifies the species as a larger form of *Cassia singueana* (*Muhumba*). The Duruma use a decoction of the root to treat veneral diseases (*tego*).

***Cynometra suaheliensis* (Taub.)Bak.f.**

Mufunda/Mufunda-uche (Dur); *Mfunda* (Dig)

The second vernacular name (in Duruma dialect) identifies the species as a female (*-uche*) form of *Cynometra webberi*. The Duruma and Digo use the stem for building poles and for making pestles. In addition the Duruma use the species as a source of timber for making local furniture. The Duruma recognised the fruits as being poisonous to goats.

***Cynometra webberi* Bak.f.**

Mufunda/Mufunda-ulume (Dur)

The second vernacular name identifies the species as a male (*ulume*) form of *Cynometra suahiliensis*. The Duruma use the stem for building poles and for making pestle. An infusion of the leaf is used to make a cold bath for excessively crying child.

***Julbernardia magnistipulata* (Harms)Troupin**

Mukuwa (Dur); *Muzahe* (Gir); *Mkuwa/Ukwe* (Dig)

The Duruma and Giriama use the stem for making hoe-handles and for building poles. The Duruma use the inner bark for making ropes and for making fish traps (*tsatsa*). The species is however, less preferred to *Brachystegia spiciformis*. The Digo use the stem for making boats and walking sticks. The species is a source of poor timber.

***Scorodophloeus fischeri* (Taub.)J.Leon**.

Muphande (Dur)

The Duruma use the stem for building poles, and the stem is used as a source of timber for making local furniture.

***Tamarindus indica* L.**

Mukwaju (Dur/Gir); *Mkwadzu* (Dig)

Fruits are edible, and used as food spices, and for flavouring icelollies. The Duruma use an infusion of the leaf to treat stomach ailments (*mshipa*). A decoction of the root is used for spiritual ailments, headaches and dizziness. The Duruma and Digo use the sticks to make walking-sticks. The Giriama chew the leaves for stomach-ache. The Digo use an infusion of the leaf to treat asthma and diarrhoea, and to wash the eyes for cobra snake spit.

MIMOSACEAE 147

***Acacia adenocalyx* Brenan & Exell**

Munga/Muvwada-paka/Mwangoloto(Dur); *Chinyakore/Chikombe-tsui* (Dig)

The Duruma use a decoction of the root to treat snakebite, tetanus (*nyoka-ya-tambo*) and the loss of sight resulting from witchcraft. The Digo apply a poultice from the root on boils and other sceptic swellings.

***Acacia etbaica* Schweinf. ssp. *platycarpa* Brenan**

Mugundi/Chikwata/Magwada (Dur)

The Duruma use the stem for building poles, a decoction of the bark is used to treat colds, and a decoction of the root is used to treat veneral diseases (*tego*).

Acacia mellifera* (Vahl)Benth. spp. *mellifera

Chikwata-kombe (Dur); *Kikwata* (Gir); *Chikwata* (Dig)

The Duruma and Giriama use the stems for building poles. The a decoction of the root and an infusion of the leaf are used against spiritual ailments, convulsions and snakebite. The Digo use a decoction of the root to treat elephantic scrotum (*pumbu*).

***Acacia nilotica* (L.)Del. ssp. *subalata* (Vatke)Brenan**

Muoti (Gir)

The Giriama use a decoction of the root or the bark for coughs (*kikwanya*). The wood of this species is of high preference for firewood and for making charcoal.

***Acacia reficiens* Wawra ssp. *misera* (Vatke)Brenan**

Kirerengwa (Gir)

The Giriama use the stems for building poles and inner bark for tying material. The wood of this species is also highly preferred for making charcoal and for firewood.

***Acacia robusta* Burch.ssp. *usamabarensis* (Taub.)Brenan**

Mtsemeri (Gir)

The Giriama use a decoction of the roots or the bark to treat chest pain, colds and coughs. The stem is used for building and the wood is preferred for making charcoal.

***Acacia seyal* Del.**

Mugunga/Chigundi (Dur/Dig)

The Duruma and Digo use root decoction or chew the root to treat fever and cold. The Duruma chew the inner bark to treat coughs (*kombereza*).

***Acacia* sp.**

Mkalino (Gir)

The Giriama use the wood for firewood and for making charcoal.

***Acacia stuhlmanii* Taub**

Msaro (Dur); *Mgunga* (Dig)

The Duruma and Digo place pieces of roots in pots that contain drinking water for protection against cholera (*chimbonja*). Leaves are boiled to smoke patients suffering from cholera and pneumonia. The Duruma chew the inner bark to treat coughs.

Acacia zanzibarica* (S.Moore)Taub. var. *zanzibarica

Mulozi/Mupiga-kululu/Mwongololi (Dur); *Muhega-kululu* (Dur/Gir)

The Duruma use a decoction of the root to treat stomach-ache, diarrhoea, cough, and asthma. A poultice from the root is applied on boil to facilitate bursting and healing. An infusion of the leaf is used as a cold bath for snakebite and for treating madness. The Giriama use a decoction of the root for spiritual ailments. A decoction of the root and an infusion of the leaf are used to treat headaches. The wood is preferred for fuel (firewood and for making charcoal).

***Albizia anthelmintica* Brongn.**

Mporojo (Dur/Gir)

Both Duruma and Giriama use the stem for timber that is especially preferred for making traditional beds. The stem is also used for making three legged stools and mortars. The Duruma, in addition, use a decoction of the root to treat convulsions; while the Giriama use hollow stems to make traditional bee-hives.

***Albizia versicolor* Oliv.**

Mtsani/Mtsani-ndzovu (Dur/Dig)

The wood is preferred for its quality timber. The Duruma use a decoction of root and an infusion of leaf to treat convulsions. The Digo use root decoction to treat chest pain and gonorrhoea.

***Dichrostachys cinerea* (L.)Wight & Arn.**

Mukingiri (Dur/Gir); *Mukirindi* (Gir); *Mchinjiri/Mpingwa/Chipato* (Dig)

The Duruma use a decoction of the bark to induce diarrhoea in event of stomach ailments. A decoction of the root and the leaf infusion are used to treat complications in pregnancy, and to treat convulsions. The Giriama would use a decoction of the leaf and the root to treat a bewitched person. Branched sticks are used by the Giriama to hang traditional beehives onto trees. The Digo use a decoction of the root to treat *nyongoo* and convulsions. An infusion of the leaf is used to treat *chirwa* and asthma, and the infusion is also used as a cold bath to foster understanding between community members and for good health in the community, as well as enhancing prosperity and good luck to community members.

PAPILIONACEAE 148

***Abrus precatorius* L. ssp. *africanus* Verdc.**

Mutururi (Dur/Gir); *Mwangalanyuchi/Mwamsusumbika* (Dig)

The seeds are commonly used in rattles, *kayamba* (a traditional musical instrument). The Duruma burn the leaves and use the ash to make magical charm that can be used to promote business, to foster good luck and to help one get employment opportunities. The Giriama use a decoction of the root to treat asthma; and a poultice from the root is applied onto wounds to assist in healing. The Digo use a decoction of the root to treat stomach-ache especially in menses, and for treating gonorrhoea. A poultice from the lea is added in immature coconut fruit juice and drunk for asthma.

Craibia brevicaudata* (Vatke)Dunn spp. *brevicaudata

Muphande/Muchokoi (Dur); *Muhande* (Gir); *Mphande/Chikunguni* (Dig)

The species is used for building poles and for firewood, and is among those species preferred for these uses. The Digo use a decoction of the root to treat high blood pressure.

Dalbergia boehmii* Taub. ssp. *boehmii

Murandze (Dur/Dig)

The Duruma use an infusion of the leaf and a decoction of the root to treat spiritual ailments. The Digo use a decoction of the root to treat general body pain and blood diarrhoea, and also used to induce labour pains. Root bark chips are added in oil and used as perfume.

***Dalbergia melanoxylon* Guill. & Perr.**

Muphingo (Dur); *Muhingo* (Gir); *Mphingo* (Dig)

The stem is commonly used for building poles, especially for the thick and strong standing poles required for building structures like granaries and traditional grass houses. A decoction of the root and an infusion of the leaf are used to treat spiritual ailments, stomach-ache and blood diarrhoea. The Duruma, in addition, use a decoction of the root and an infusion of the leaf to treat abdominal pains and stomach ailments in pregnancy (*nyongoo*). A poultice from the root is applied to the neck for tonsilitus and coughs (*chigwashe*). The Giriama use pieces of root to make a magical jewel (*pande*) that is used to protect a person from evil spirits and treat spiritual ailments (*mawia*). The Digo use a decoction of the root to treat veneral diseases.

***Erythrina sacleuxii* Hua**

Mgala (Dur); *Mulungu* (Gir); *Mwamba-ngoma/Mbamba-ngoma* (Dig)

The vernacular name, in Giriama dialect, also means 'God'. However, there is no relationship in meaning between the two. The vernacular names, in Digo dialect, means 'making drums'. The stem of this species is commonly used for making the wood-trunk of a drum. The Duruma use an infusion of the root to make a cold bath for spiritual ailments (*mgala*), from which the species acquired its name in Duruma.

***Indigofera* sp.**

Mushero/Kashero (Gir); *Lihago* (Dig)

The vernacular names, in Giriama dialect, literally mean "broom". The branches of this species are used for making brooms. The Giriama burn the leaves and use the ash to make a protective charm that is applied through incisions to evict evil spirits in a person's body.

***Lonchocarpus bussei* Harms**

Muphumbuluzi/Msumari-bara (Dur)

The Duruma use the stem for building poles. An infusion of the leaf is used to treat convulsions, and a decoction of the root is used to treat veneral diseases (*tego*) and for stomach ailments during pregnancy (*nyongoo*).

Milletia usaramensis* Taub. spp. *usaramensis

Muvamva (Dur); *Mvava/Msumari* (Dig)

The Duruma and Digo use the stem for building poles. The Digo use pieces of sticks to make fish traps (*tole*), and wooden nails. A decoction of the root is used for coughs and chest pains.

***Mundulea sericea* (Willd.)A.Chev**

Mutupa (Gir)

The Giriama use poultice from the leaf as fish poison.

***Ormocarpum kirkii* S.Moore**

Chitwadzi (Dur); *Kitwadzi* (Gir); *Chitadzi* (Dig)

The Duruma use a decoction of the root to treat ailments resulting from witchcraft. The Giriama apply a poultice from the root (mixed with other species) on sceptic swellings (*chifundo*) to hasten bursting and healing. The Digo use root and leaves to make a charm that is used for giving an individual extra power and energy.

***Ormocarpum sennoides* (Willd.)DC. ssp. *zanzibaricum* Brenan & Gillet.**

Mupingwa/Kakwaju (Dur); *Humbo-ra-nguluwe/Mpingwa/Chikwadzu* (Dig)

The Duruma use a decoction of the root to treat cough (*kombereza*), an infusion of the root is used as a cold bath for convulsions and pieces of sticks of this species are used in burial rites. The Digo use poles of this species to build a shrinical hut (*chifudu*), a decoction of the root is used for stomach-ache during pregnancy (*shango dide*) and during menses (*shango ra damu*). An infusion of the leaf is applied on fresh burns, used for high blood pressure and for treating ailments caused by sexual relations among family members.

***Tephrosia villosa* (L.) Pers. ssp. *ehrenbergiana* (Schweinf.)Brummitt**

Kabalazi-mulungu/Mtititi (Dur); *Chibalazi-mlungu/Chibalazi-chandze* (Dig)

The Duruma use a decoction of the root to treat abdominal pains and stomach ailments during and after pregnancy (*nyongoo*). The Digo chew the root or take a decoction of the root for coughs, fever and pains in the neck.

MORACEAE 167

***Ficus bussei* Mildbr. & Burret**

Mugandi (Dur); *Mgandi* (Dig)

The Duruma and Digo use the leaves as sandpaper in smoothening wood during the making of furniture.

***Ficus lingua* DeWild & Th.Dur. spp. *depauperata* (Sim)C.C.Berg**

Muzikaha (Gir)

The Giriama use an infusion of the leaf, decoctions of the root to treat spiritual ailments.

***Ficus stuhlmannii* Warb.**

Chigandi-ulimbo (Dur); *Uzi-kaha* (Dig)

The species is a source of fire friction sticks. Inner bark is used for making ropes and other tying materials.

***Ficus sycomorus* L.**

Muriro/Mudigizo (Dur); *Muriro/Mugandi* (Dig)

The Duruma and Digo use the inner bark for making ropes, and for making weaving materials in basketry. The Digo use pieces of stem as floaters on fishing nets. Hot decoction of the root is used for toothache by steaming the mouth.

***Ficus tremula* Warb.**

Mtanga-muho (Dur)

According to the Duruma, the species is tabooed and is avoided for use as firewood.

***Milicia excelsa* (Welw.)C.C.Berg**

Muvure (Dur); *Mwamba* (Gir); *Mvure* (Dig)

The wood of this species is used commonly for making mortars, traditional plates (*muvure*) and three-legged stools. The wood is also a source of good quality timber. The Digo use the species as a 'season' indicator, such that when the plant loses its leaves the farmers prepare land, and when the plant flowers the farmers sow seeds.

URTICACEAE 169

***Laportea lanceolata* (Engl.)Chew**

Lwavi-lubomu (Gir)

The vernacular name identifies the species as a larger (*-lubomu*) form of *Tragia furialis*.

***Urera sansibarica* Engl.**

Lwavi-ng'ombe (Dur); *Lwavi-tsaka* (Gir)

The vernacular name in Duruma dialect identifies the species as a larger form (*-ng'ombe*) of *Tragea furialis*, whereas the vernacular name in Giriama dialect indicate that this species is a forest (*-tsaka*) form of *Tragia furialis*. The Duruma burn the leaves and use the ash to make a protective charm against evil doers and evil spirits. The Giriama use the ash from burnt leaves to make a charm that is applied through incisions in the skin to treat leprosy (*ukoma)*.

CELASTRACEAE 173

***Elaeodendron schlechteranum* (Loes.)Loes.**

Mukibuthri (Gir); *Chikunguni-chilume* (Dig)

The Digo use the stem for building poles and for firewood.

***Maytenus heterophylla* (Eckl. & Zeyh.)Robson**

Mdunga-tundu (Dur); *Mtsokola-ng'ongo* (Dig).

The Duruma apply a poultice from the root onto sceptic swellings (*chifundo*). The Digo use a decoction of the root to treat waist pain in pregnant women (*nyongoo*), gonorrhoea, and liver problems in children. An infusion of the leaf is used as a cold bath for protection against *nyongoo*.

***Maytenus mossambicensis* (Klotzsch)Blakelock var. *ambonensis* (Loes.)N.Robson**

Mudunga-tundu (Dur/Gir); *Mugheha* (Gir)

The Duruma use a decoction of the root to treat stomach problems (*nyongoo*). The Giriama use a decoction of the leaf and the root to treat ailments resulting from witchcraft.

***Maytenus undata* (Thunb.)Blakelock**

Mulimbolimbo (Dur)

The Duruma apply dried poultice from the leaf is applied onto wounds to assist in healing. Inner bark is chewed and used for making bird-lime.

HIPPOCRATEACEAE 173

***Loeseneriella africana* (Willd.)N.Halle var. *richardiana* (Cambess.)N.Halle**

Mukipesa (Gir)

The Giriama use the stem as tying material in house building, and is the most preferred locally. A decoction of the root is used to treat stomach upset and diarrhoea.

***Mystroxylon aethiopicum* (Thunb.)Loes.**

Mubafyebafye (Dur)

To the Duruma the species is tabooed and is not used for building. It is believed that when used in house building it attracts snakes, especially the puff adder (*bafye*).

ICACINACEAE 179

***Pyrenacantha vogeliana* Baill.**

Mugandzi (Dur); *Ria* (Gir); *Bundi* (Dig)

The Duruma give a decoction of the root-tuber to an expectant woman so as to treat or protect against swelling of the body (*mwadzulu*) before or after giving birth. A decoction of the leaf is used to treat veneral diseases and bilharzia. The Duruma and Digo use the leaf to treat epilepsy. The Giriama use a whole tuber as a water and food storage container from which poultry drink and feed, and this is believed to help prevent and treat cockdiosis (*kideri).*

SALVADORACEAE 180

***Dobera loranthifolia* (Warb.)Harms**

Mukupha/Muswaki (Dur); *Mukuha/Muswaki* (Gir); *Mswaki* (Dig)

The vernacular name "*m(u)swaki*" literally means toothbrush. Sticks of this species are commonly used as toothbrushes. The Duruma and Giriama use mature stems to make mortars, pestles and furniture. The Giriama use the stems to make traditional three-legged stools; and use a root decoction to treat mouth wounds and bad breadth (*mburushi*).

Salvadora persica* L. var. *persica

Mrungurungu (Dur); *Mujungumoto* (Dur/Gir)

Both Duruma and Giriama use pieces of sticks from this species for toothbrushes. The Duruma use a decoction of the root to treat stomach-ache, and apply a poultice from the root onto swollen legs. The Giriama apply poultice from the root onto sceptic swellings to hasten bursting. The wood is preferred for making charcoal.

OLACACEAE 182

***Ximenia americana* L.**

Mutundukula (Dur/Gir); *Mdhoto* (Gir); *Mtundukula* (Dig)

Fruits are edible. The Duruma use a decoction of the root to treat stomach problems and urinary tract infection, diagnosed by an experience of pain when passing urine (*tego*). The Giriama use an infusion of the leaf and a decoction of the root to treat veneral disease, and ailments resulting from witchcraft, and piece of root is chewed to treat toothache. The Digo use a decoction of the root to treat veneral diseases with symptoms such as passing out of blood in the urine, and also for treating menstrual disorders.

OPILIACEAE 183

***Pentarhopalopilia umbellulata* (Baill.)Hiepko**

Muhombo/Mufunga-mambo (Dur); *Mushinda-alume* (Gir)

The Duruma use a decoction of the root to treat convulsions, and use a piece of stem to make a magical jewel (*pande*) that is used to treat and prevent against *chirwa* (a complication similar to kwashiorkor). This disease is believed to result when one or both parents with a child who is still being breast-fed engage in extramarital sexual relations. A decoction of the root is used to treat veneral disease (*tego*).

RHAMNACEAE 190

***Scutia myrtina* (Burm.f.)Kurz**

Mudotho (Gir); *Chinyokola* (Dig)

The Digo use a decoction of the root to treat any complications during pregnancy and for preventing miscarriage.

Ziziphus mucronata* Willd. ssp. *mucronata

Mugugune (Dur/Gir)

Fruits are edible. The Duruma use a decoction of the root to treat pregnancy complications. Giriama use a decoction of the root and an infusion of the leaf as a cold bath for body swellings (*mwadzulu*).

***Ziziphus pubescens* Oliv.**

Mugogodera (Dur)

Fruits are edible, and the stem is used for building.

VITACEAE 193

***Cissus phymatocarpa* Masinde & L.E.Newton**

Mudokadoka (Dur); *Mtsuma-pengo/Mtsuma-pengo-utite* (Gir)

The vernacular name in Duruma dialect literally means "breakable". The Duruma use the stem as tying material to fix tapping containers (*mahande*) on to coconut trees in the process of palm sap tapping. The Giriama apply a poultice from the stem onto boils to induce bursting and cure. The stem is warmed then squeezed as drops for earache.

Cissus quinquangularis Chiov.

Mudokadoka (Dur); *Mtsuma-pengo* (Gir); *Dokadoka/Mbugubugu* (Dig)

The species is used in the same way as *Cissus phymatocarpa*

Cissus rotundifolia* (Forssk.)Vahl var. *rotundifolia

Bugubugu (Dur); *Ribugu/Mtsuma-pengo ubomu* (Gir); *Dokadoka/Mbugubugu* (Dig)
The species is used in the same way as *Cissus phymatocarpa*

***Cissus sylvicola* Masinde & L.E.Newton**

Bugubugu (Dur); Mtsuma-pengo (Gir); *Dokadoka* (Dig)

The species is used in the same way as *Cissus phymatocarpa*

***Rhoicissus revoilii* Planch.**

Mkongoni/Mfunga-mambo/Mkororoi/Mbare (Dur); *Munwa-madzi/Munyinya* (Gir)

The Duruma use a decoction of the root to treat stomach ailments (*mshipa, tsango*), stem is used as a source of drinking water during drought and water shortages. Sticks are used to make a protective charm (*fingo*). The Giriama scratch the roots, mixed with leaves, and burn the mixture and use the ash to make a protective charm against witchcraft and also for treating ailments caused by witchcraft.

***Rhoicissus tridentata* (L.f.)Wild & Drum.**

Mkongoni/Mbafyebafye/Mwalibugu (Dur)

The Duruma use pieces of root to make protective charm against snakebites, and a decoction of the root is used to treat stomach-ache, diarrhoea, bilharzia and prolonged menses. Fluid from the stem is used as drops for earache.

RUTACEAE 194

***Clausena anisata* (Willd.)Benth.**

Kalagapala-uvumba (Dur); *Chilagapala/Chilagapala-uvumba* (Dig)

The Duruma and Digo use a decoction of the root and an infusion of the leaf for convulsions. The Digo chew a piece of root for coughs and for a cold.

***Toddaliopsis sansibarensis* (Engl.)Engl.**

Kakuro (Dur); *Mukuro/Mudimi-tsaka* (Gir); *Chidimu-tsaka* (Dig)

The vernacular names "*Mu-/ chi- dimu-tsaka*" identify the species as a forest sister to the lime tree. The Duruma use a decoction of the root and an infusion of the leaf to treat ailments associated with prohibited sexual relationships among family members. The Giriama chew a piece of root to combat effects from snakebite. The Digo use a decoction of the root to treat body swellings and mouth wounds (*mwadzulu*).

***Vepris* sp. nov.**

Chikuro (Dur)

The Duruma use a decoction of the root to treat stomach-ache and veneral diseases.

***Vepris glomerata* (F.Hoffm.)Engl.**

Chikuro (Dur)

The Duruma chew a piece of root or lick a poultice from the root, or use a decoction of the root to treat a cold. A poultice from the root is applied onto snakebite wounds to help reduce the effects of the poison.

Zanthoxylum chalybeum* Engl.var. *chalybeum

Mudungu (Dur/Gir); *Mdungu/Mjafari* (Dig)

A decoction of the root or the bark and an infusion of thr leaf are commonly used to treat a cold, fever and general body pains. A decoction of the root is also used to treat ulcers, body swellings and bleeding gums (*mwadzulu*). The Duruma use a decoction of the root to treat stomach problems, urinary tract infection and veneral disease (*tego*), diagnosed by a painful sensation when passing out urine. The Digo use leaves as an antiseptic, and as alternative to tea-leaves.

***Zanthoxylum holstzianum* (Engl.) Waterm.**

Mjafari (Gir)

The Giriama use a decoction of the root to treat spiritual ailments. Pieces of the root are used for making protective charm (*fingo*) against evil doers and witchcraft. The fruits are burnt to produce as good scent.

BALANITACEAE 195

***Balanites wilsoniana* Dawe & Sprague**

Mukonga (Dur); *Mkonga* (Dig)

The Duruma and Digo use a decoction of the root to treat body pains and muscle injuries.

SIMAROUBACEAE 195

***Harrisonia abyssinica* Oliv.**

Mvwada-paka (Dur); *Chidori* (Dur/Dig); *Mukidhunya* (Gir)

The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments and a bewitched person. The Digo use a decoction of the root for chest pains, menstrual disorders, and for liver ailments.

BURSERACEAE 196

Commiphora africana* (A.Rich.)Engl. var. *africana

Mubambara (Dur); *Tola* (Gir).

The Duruma use a decoction of the root to treat convulsions and gonorrhoea. A piece of root is chewed to quench thirst during drought and water shortages. The Giriama use a decoction of the root to treat spiritual ailments; and use the stem to make a traditional three-legged stool.

Commiphora edulis* (Kl.)Engl. ssp. *boiviniana

Murya-kwembe (Dur); *Mukwembe* (Dur/Gir); *Mryakwembe* (Dig)

The Digo use an infusion of the leaf and a decoction of the root to treat convulsions. The Duruma and Giriama use the species for making living fence around cow yards and homesteads. The Giriama use the root decoction to treat persistent diarrhoea in children (*Kihako*).

Commiphora eminii* Engl. spp. *zimmermannii

Mudendende (Dur); *Mukaya* (Gir)

Both Duruma and Giriama use the stem as source of soft wood timber planks. The Duruma make coconut graters from the stems. The Giriama prefer this timber for making traditional coffins. The Giriama use an infusion of the leaf to treat spiritual ailments.

***Commiphora lindensis* Engl.**

Mubambara/Kabambara (Dur); *Katola-katite* (Gir); *Mbambara/Chibambara* (Dig)

The vernacular name identifies this as a smaller form (*-katite*) to a sister species, *Commiphora africana* (*Tola*). The Giriama use a decoction of the root and an infusion of the leaf to treat ailments characterised by swelling of the body (*mwadzulu*). The Duruma and Digo use a decoction root to treat stomach-ache (*shango*). The Digo use a decoction of the root to induce strong contractions of uterus muscles to help in giving birth.

SAPINDACEAE 198

***Allophylus rubifolius* (A.Rich.)Engl. var. *alnifolius* (Bak.)Friis & Vollesen**

Musuka-wongo (Dur); *Munyanga-kitswa* (Gir); *Muvundza-kondo* (Dur/Gir/Dig)

The vernacular name "*Munyanga-kitswa*" literally means "treats the head" and "*Muvundza-kondo*" means "ending the war". The Giriama use a decoction of the root and an infusion of the leaf to treat severe headache and spiritual ailments, hence "bring to an end the war of sickness". The leaves are burnt and the ash is used to make charms for success, and defence in court cases. The Duruma use a decoction of the root and an infusion of the leaf to treat complications in pregnancy (*shango*), convulsions, and persistent headache (*mkomo*). The Digo add a decoction of the root and the leaf of this species in many medicinal mixtures as it is an important plant in 'fighting' diseases.

***Allophylus pervillei* Bl.**

Musuka-wongo (Dur); *Munyanga-kitswa* (Gir); *Muvundza-kondo* (Dur/Gir/Dig)

The vernacular name "*Munyanga-kitswa*" literally means "treats the head" and "*Muvundza-kondo*" means "bringing a war to an end". The Giriama use a decoction of the root and an infusion of the leaf to treat severe headache and spiritual ailments, hence "the war of sickness is over". The leaves are burnt and the ash is used to make a charm that is used to provide defence in a court case. The Duruma use a decoction of the root and an infusion of the leaf to treat complications in pregnancy (*shango*), convulsions, and persistent headache (*mkomo*). The Digo add a decoction of the root and the leaf of this species in many medicinal mixtures as it is a master in 'fighting' the disease.

***Deinbollia borbonica* Scheff.**

Mupalamwaka (Dur); *Mdala-mwaka/Musukari; Mwenda-kuzimu* (Gir); *Mpwakapwaka* (Dig).

The vernacular "*Mwenda-kuzimu*", in Giriama dialect, literally means going deep into the ground. The species acquired this name for the belief that it's root grows very deep into the ground. Fruits are edible. The Duruma use a decoction of the root and an infusion of the leaf to treat stomach ailments, spiritual ailments and ailments resulting from witchcraft. The Duruma and Digo apply poultice from the root (mixed with garlic) onto boils and other sceptic swellings to hasten bursting and healing. The Digo use a decoction of the root and an infusion of the leaf to treat diabetes, to strengthen penile erection and treat swollen scrotum in

children. The species is used as an environmental indicator, when it flowers it indicates that it is sowing season and when its fruits are ripe, it is harvesting time (during the short rains).

***Haplocoelum foliolosum* (Hiern)Bullock ssp. *mombasense* (Bullock)Verdc.**

Mufungasanzu (Gir)

The Giriama use the stem for building poles and for firewood.

***Haplocoelum inoploeum* Radlk.**

Mufungatsandzu (Dur); *Mufungasanzu* (Gir); *Mfunga-sandzu* (Dig)

The species is commonly used for building poles.

***Lecaniodiscus fraxinifolius* Bak. ssp. *scassellatii* (Chiov.)Fries**

Munyanyakanda (Dur); *Mkwalino/Mbelenga* (Gir); *Mremero* (Dig)

In all three communities the fruits are edible, and stem is commonly used for building poles.

***Pancovia golungensis* (Hiern)Exell & Mendonca**

Mpalamwaka-wa-msuhuni/Mpalamwaka-msuhu (Dur)

The vernacular name indicates that this species is a thick forest (*-msuhu*) form of *Deinbollia borbonica*. The Duruma use the stem for building simple structures.

ANACARDIACEAE 205

***Lannea schweinfurthii* (Engl.)Engl. var. *stuhlmannii* (Engl.)Kokw.**

Munyumbu (Dur/Gir); *Mnyumbu/Mnyumbu-madzi/Mchumbu* (Dig)

The Duruma use a decoction of the root to treat veneral diseases (*tego*) and ailments resulting from witchcraft. The Giriama use an infusion of the leaf and a decoction of the root to treat bewitched person, and use a piece of the stem for making traditional three-legged stool. The Digo give a decoction of the root to an expectant mother to induce labour pains.

***Ozoroa insignis* Del. ssp. *reticulata* (Bak.f.)Gillet**

Mtsalatsanga (Dur); *Msalasanga* (Dig)

The Duruma use a decoction of the root to treat abnormally prolonged menses (*shango*) and veneral disease (*tego*). The Digo use a piece of root to make a magical jewel (*pande*) on

which a traditional protective prayer is written. Both Duruma and Digo apply root-bark chips onto a traditional basket (*lungo*) to improve its quality and avoid leakages.

***Ozoroa obovata* (Oliv.)R. & A.Fernandes**

Msalasanga/Mtsalatsanga (Dur); *Msalasanga* (Dig)

Used in similar way as *Ozoroa insignis*

***Rhus natalensis* Krauss**

The Giriama use a decoction of the root to treat abdominal pains, urinary tract infection and convulsions.

***Sclerocarya birrea* (A.Rich)Hochst.**

Mung'ongo (Dur); *Mng'ongo* (Dig).

Fruits are edible. A poultice from the leaf is used by both Duruma and Digo in community cleansing activities following any calamity or natural disaster. The Duruma use the leaves to make an infusion (together with other species) that is used to clean the hands of community members involved in severe disputes or fights. After cleaning their hands community members share some food, and this is considered as a process of reuniting them. The Digo use a hot decoction of the bark to steam and rinse the mouth for toothache. The wood is commonly used as a source of timber.

ARALIACEAE 212

***Cussonia zimmermannii* Harms**

Munyala (Dur/Gir); *Mnyala* (Dig)

The Duruma burn the leaves and roots and use tha ash to make a charm that is used for treating madness and ailments resulting from witchcrafting. A decoction of the root and an infusion of the leaf are used to treat psychological problems and depression (*fyula-moyo*), as well as persistent ailments due to witchcraft activities (*chivuri*). The Giriama use a decoction of the root to treat *kanyaza* (an ailment with symptoms similar to Kwashiorkor). The Digo use the timber for funeral rites; this use has continued even after the adoption of the Islamic faith, about a century ago.

EBENACEAE 221

***Diospyros consolatae* Chiov.**

Muhi-wa-chidzomba (Dur); *Mubate* (Gir)

The stem is used for building poles.

***Diospyros cornii* Chiov.**

Mukulu (Dur/Gir); *Mkulu* (Dig)

Fruits are edible. The stem is used for building poles and for timber, and sticks are used as toothbrushes. The Duruma use the stem to make beds, and also for making coconut-graters. The Giriama use the stem to make a protective jewel (*pande*) that is used against the 'evil eye'. The Digo use a decoction of the root to rinse the mouth for toothache, the decoction is also taken for stomach-ache. An infusion of the leaf is used as a cold bath for spiritual treatments (*mwanyika*).

***Diospyros natalensis* (Harv.)Brenan**

Katsungwi-ka-tsakani/Mutsungwi (Gir)

The Fruits are edible. The Giriama use a decoction of the root to treat spiritual ailments.

***Diospyros* sp.**

Mukulu-kipanya (Gir)

The Giriama use root decoction to treat bewitched person.

***Diospyros squarrosa* Klotzsch**

Mdzungu-muho (Dur); *Mupweke* (Dur/Gir); *Mpweke* (Dig)

Fruits are commonly edible and stem is used for building poles, for making bows and walking sticks. The Duruma use a decoction of the root to treat stomach complications experienced during pregnancy (*nyongoo*) and a poultice from the root is applied onto sceptic swellings. The Digo use a decoction of the root to treat convulsions.

***Euclea natalensis* A.DC. spp. *obovata* F.White**

Mukipa (Gir)

The Giriama use a decoction of the root to treat spiritual ailments and to inducing diarrhoea in event of poisoning and snakebites. The stem is used for building poles, and fresh sticks are used as toothbrushes.

***Euclea racemosa* Murr. ssp. *schimperi* (A.DC.)F.White**

Mubafyebafye (Dur); *Muyesa* (Gir)

The Duruma use a decoction of the root as a stimulant to empty the bowels in event of stomach problems or poisoning. The Duruma avoid the species as a building material on cultural beliefs that it attract snakes.

SAPOTACEAE 222

***Manilkara mochisia* (Bak.)Dubard**

Munago (Dur/Gir); *Mnago* (Dig)

Fruits are edible. The Duruma and Digo use a decoction of the root to treat colds and coughs (*kombereza/chivwadulo*) and to induce vomiting after snakebite. The bark, harvested from sunrise and sunset sides, is used to treat snakebites. The Giriama chew the bark to treat coughs (*kipanya*), the stem is used for making traditional beehives, and wood is used for making small domestic tools e.g. combs.

***Manilkara sansibarensis* (Engl.)Dubard**

Mung'ambo (Dur); *Mung'ambo-kapehe* (Gir)

Stem used for building poles by both Duruma and Giriama.

***Manilkara sulcata* (Engl.)Dubard**

Mwarika/Charika (Dur); *Mutsedzi* (Dur/Gir); *Mbate-tsaka/Mutsami* (Gir); *Mtsedzi* (Dig)

Fruits are edible, and stem is used commonly for building poles and for making cooking sticks (*mwiko*). The Duruma use a decoction of the root and an infusion of the leaf to treat spiritual ailments. The Giriama use the timber for making local furniture. Root is chewed or a decoction of the root is drunk to treat coughs (*kipanya*). The Digo use a decoction of the root for chest pain.

***Mimusops obtusifolia* Lam.**

Mugama-muho (Dur)

Fruits are edible, and the Duruma use the stem for making pestle.

***Mimusops somaliensis* Chiov.**

Mugama (Dur); *Mgama* (Dig)

Fruits are edible. The Duruma use the stem for making pestles and coconut-graters, and root decoction is used for chest pains and backbone pains.

***Sideroxylon inerme* L. ssp. *diospyroides* (Bak.)J.H.Hemsl**

Mutunda/Mutunda-koma (Dur); *Mutsami* (Gir); *Myongoyongo/Mziyaziya/Mkoko-mwitu* (Dig). The Giriama use the bark to make a traditional 'cigarette' that is smoked for chest pains and coughs (*kiphuti*). The Digo use a decoction of the root to treat menstrual disorders.

***Vitellariopsis kirkii* (Bak.)Dubard**

Chitengwa (Dur); *Chilishangwe* (Dur/Dig); *Mkilishangwe* (Dig)

The Duruma use the stem for building poles and firewood, and a decoction of the root is used for stomach-ache.

LOGANIACEAE 228

Mostuea brunonis* Dird. var. *brunonis

Kakwamba-msuhu (Dur)

The Duruma use an infusion of the leaf to treat spiritual ailments.

***Strychnos madagascariensis* Poir.**

Mukwakwa (Dur/Gir); *Mkwakwa* (Dig)

Fruits are edible. The Duruma use roots (collected from sunrise and sunset sides) to make a decoction that is used to treat a barren woman, and enhance conception.

***Strychnos spinosa* Lam.**

Mudzaje (Dur); *Muhonga* (Dig)

Fruits are edible. The Duruma use a decoction of the root to treat stomach ailments, pneumonia and asthma. The Digo use a decoction of the root to induce labour pains, but when

taken during premature pregnancy it causes miscarriage. The Digo use root-bark chips in coconut oil against skin parasites, jiggers. Firewood from this species when used to cook food for sale is believed to draw customers and improve the sale and bring higher profits.

APOCYNACEAE 230

***Adenium obesum* (Forssk.)Roem. & Schult.**

Mwadiga (Dur/Dig), *Mwanyoka/Mwadiga* (Gir)

Although the species is locally considered to be poisonous in most respects, it is still used for medicinal purposes. The Duruma use a decoction of the tuber to treat stomach ailments. The Giriama use a poultice from the tuber (magically) to protect a person against snakebite and poisoning.

***Ancylobotrys petersiana* (Kl.)Pierre**

Muhonga/Muhonga-udide (Dur); *Mutongazi/Mutungazi* (Gir); *Mbohoya* (Dig)

Fruits are edible. The Duruma burn the stem and leaves and use the ash to make a lucky charm, that can be used to induce good luck and enhance one's ability to secure a better job opportunity. The Giriama use the an infusion of the leaf to feed cattle so as to improve milk production.

***Carissa tetramera* (Sacl.)Stapf**

Muloe (Dur); *Mtandamboo/Nvuje-ya-tsi* (Gir)

Fruits are edible. The Duruma use a decoction of the root to treat spiritual ailments and stomach ailments (*shango*). The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments and convulsions.

***Hunteria zeylanica* (Retz.)Gardn.**

Mudigizo-mwitu (Gir); *Mziyaziya* (Dur); *Mziyaziya/Mziyaziya-mchetu/Mdimu-tsaka* (Dig)

The Giriama use an infusion of the leaf and a decoction of the root to treat a bewitched person.

***Landolphia kirkii* Dyer**

Muhonga-ulume (Dur); *Mpira* (Dig).

The fruits are edible. The Duruma use a decoction of the root to treat stomach ailments (*mshipa*). The Digo use the latex to make bird-lime (*ukaka*). The stem is used for crafting furniture.

***Saba comorensis* (Bojer)Pichon**

Muhonga (Dur); Muungo (Dig).

The fruits are edible. Both Durma and Digo use the latex for making bird-lime, and a decoction of the root is used for treating stomach complications experienced during pregnancy (*shango*). The stem is used in crafting a range of domestic furniture items.

***Strophanthus kombe* Oliv.**

Muzigande (Dur); *Mwambalu* (Gir)

The whole plant is known to be poisonous. The Giriama include macerated leaves in a charm used in a tribal cleansing ceremony.

***Tabernaemontana elegans* Stapf**

Mudigizo (Gir); *Chibombo* (Dig).

The Giriama use a decoction of the root to treat a bewitched person. The Digo believe the plant is poisonous and it is avoided.

ASCLEPIADACEAE 231

***Ceropegia seticorana* E.A.Bruce**

Mufunga-mambo (Gir)

The Giriama burn the whole plant to make a protective charm that is used to provide defence in court cases or resolve persistent problems and help in ending them in one's favour.

***Ceropegia* sp.**

Mufunga-mambo (Gir)

Used the same way as is *Ceropegia seticorana*.

***Cryptolepis sinensis* (Lour.)Merr. ssp. *africana* Bullock (*C. apiculatum* K. Schum.)**

Mufunga-mambo (Dur)

The Duruma use this species the same way as the Giriama use *Ceropegia seticorana.*

***Cynanchum gerrardii* (Harvey)Liede**

Katudi (Dur). No use for this species was identified.

***Cynanchum validum* N.E.Br.**

Nvuje-yatsi (Dur)

The Duruma use the species to make a magical charm used in treating spiritual ailments.

***Dregea rubicunda* K. Schum.**

Kalumwa (Dur)

The Duruma give a decoction of the root and an infusion of the root to a woman after delivery, to assist in expulsion of the after-birth.

***Dregea* sp.**

Mubafyebafye (Dur)

The Duruma burn the stem and the leaves to make a protective charm that is applied through skin incisions made at specific points on the body, to defend one against snakebites. The charm can also be used as a treatment after snakebite.

***Pentarrhinum insipidum* E. Mey.**

Nvuje-yatsi (Dur).

The Duruma use a decoction of the root to treat abnormal vaginal secretion and stomach-ache (*tsango*).

RUBIACEAE 232

Agathisanthemum bojeri* Klotzsch var. *bojeri

Muvundza-kesi (Dur); *Kaithima* (Gir); *Chivuma-nyuchi/Chivundza-kesi* (Dig)

The Duruma and Digo use the leaves to make a protective charm that is used magically to provide defence in court cases or resolve persistent problems, and help in ending them in one's

favour. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments. The Digo use a decoction of the root to treat stomach-ache and complications in pregnancy (*shango*), and an infusion of the leaf is used as a cold bath for scabies and convulsions.

***Canthium kilifiensis* Bridson**

Mkoropha/Mtsamula-ndolwa (Dur)

The Duruma burn the leaves and use the ash to make a charm that can be used to induce a misunderstanding between friends or family members. The species is tabooed as a source of firewood and building material. It is believed to cause misunderstanding and fights in a house or homestead when used.

***Canthium mombazense* Baill.**

Mkoropha (Dur)

The Duruma use the stem for poles when building simple structures.

***Catunaregam nilotica* (Stapf)Tirvengadum**

Mudzongodzongo/Mutengedzi (Dur); *Mutsengezi/Mutengedzi* (Gir); *Mdzongongodzongo/ Mtengedzi* (Dig).

The Duruma use a piece of root to make a protective jewel (*pande*) that is put on to protect one against an evil eye. An infusion of the root is used to treat stomach-ache, constipation and indigestion. The Giriama give a new born baby a decoction of the root to drink before taking mother's milk to protect the child from evil spirits that might be in the mother, and believed to be transmissable through suckling. The Digo use a decoction of the root to treat stomach-ache, and the fruits are stirred to produce foam which indicates the removal of evils inflicted on oneself.

Coffea sessiliflora* Bridson spp. *sessiliflora

Mudzombadzomba (Gir)

The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

Gardenia volkensii* K.chum spp. *volkensii

Muchimwemwe (Dur); *Chimwemwe* (Gir/Dig)

Twigs with two or three pronged are used for making stirring rods in cooking (lufidzo/lufodzohi). The Duruma put root-bark chips in a guard (*ndonga*) which is then given to barren woman to carry as a baby, in order to help her conceive. Branched stem is used as a lid for the guard. The Duruma burn the leaves and use the ash to make a lucky charm that promotes business (*livuho*), and also use the charm to induce good luck (*mendzwa*).

***Heinsia crinita* (Afz.)G. Tayl. ssp. *parvifolia* (K.Schum & K.Krause)Verdc.**

Mfyefye (Dur); *Mulanza* (Gir); *Mfyofyo* (Dig)

Fruits are edible. The stem of this species is commonly used for making arrow shafts.

Hymenodictyon parvifolium* Oliv. ssp. *parvifolium

Mulindi (Dur); *Mukirindi* (Gir)

Both Duruma and Giriama use the species for fire sticks, especially for making symbolic fires. In Giriama culture it is compulsory that in a new built house where no fire has ever been made, sticks of this species are used to start the first fire in that house. The Duruma include a poultice from the leaf as part of the charm used during tribal cleansing ceremony. The Duruma use a decoction of the root and ash from burnt leaves to treat ailments caused by prohibited sexual affairs between family members. A decoction of the tuber is used to treat stomach-ache.

***Lamprothamnus zanguebaricus* Hiern**

Mutsome (Dur); *Munyukufu* (Gir); *Mtsome* (Dig)

Fruits are edible. The Duruma and Giriama use the stem for building poles. The Giriama use a decoction of the root and an infusion from the leaf to treat spiritual ailments. The Digo use a decoction of the root to induce diarrhoea. When the fruits of this species ripen, is an indication that it is harvesting period during the short rains.

***Meyna tetraphylla* (Hiern.)Robyns ssp. *commorensis* (Roybns)Verdc.**

Mutsamula-ndolwa (Dur)

According to the Duruma the species is tabooed as a source of building poles and firewood, and it is believed that its use causes consistent disputes and quarrels among family members.

***Polysphaeria parvifolia* Hiern**

Mmangitovu/Mmangomango (Dur); *Mumangwi* (Gir); *Mtsonga-nyomba* (Dig)

Fruits are edible. Stem used for building materials of simple and temporary structures.

Psychotria amboniana* K.Schum. ssp. *amboniana

Mukamasi (Dur)

The Duruma use a decoction of the root to treat convulsions.

***Psydrax recurvifolia* (Bullock)Bridson**

Mufidzifidzo (Dur)

The Duruma use a two-pronged twig to make a stirring rod (*lifidzo*) in cooking.

***Pyrostria bibracteata* (Bak.)Cavaco**

Mufumula-ndolwa (Gir)

To the Giriama the species is tabooed as a source of firewood because it is believed that if it is burnt the people in the household will experience frequent quarrels.

***Pyrostria phyllanthoidea* (Baill.)Bridson**

Mufumula-ndolwa (Gir)

The species has similar beliefs as *Pyrostria bibracteata.*

***Tricalysia ovalifolia* Hiern var. *glabrata* (Oliv.)Brenan**

Mupepo (Gir)

The Giriama use a decoction of the root and an infusion of the leaf to treat spiritual ailments.

***Vangueria infausta* Burch. ssp. *acuminata* Verdc.**

Muviru (Dur/Dig)

Fruits are edible. According to Duruma and Digo this species is tabooed for use as building poles and firewood. It is believed that once used there would be frequent quarrels in the house/homestead. The Digo use a decoction of the root to treat abdominal pains during pregnancy (*nyongoo*), but in early pregnancy it causes miscarriage.

COMPOSITAE 238

***Achyrothalamus marginatus* O.Hoffm.**

Mweza (Dur/Dig); *Mlazakoma/Chigalugalu* (Dur); *Mweza-moyo* (Dur)

The vernacular name '*mweza*' in both Duruma and Digo dialects mean 'cleaner', and '*moyo*' means 'the heart'. The Duruma and Digo use the root to make a charm that can be used to impress a hesitant lover or spouse (cleans the heart). The Duruma use a decoction of the root to restore penile erection and sexual vigour, but only if its failure was due to witchcraft activities. The Digo use a decoction of the root to treat liver ailments.

***Bidens pilosa* L.**

Todza (Dur/Dig).

The Duruma use the young leaves as a vegetable.

***Blepharispermum zanguebaricum* Oliv & Hiern**

Mulanza (Gir)

The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments.

***Brachylaena huillensis* O.Hoffm.**

Muphuphu (Dur/Gir); *Muhuhu* (Gir/Dig)

The stem is used for building poles and mostly preferred for firewood. The carvers (mostly non-*Midzichenda* communities from other parts of Kenya) prefer this species for carving.

***Vernonia hildebrandtii* Vatke**

Mlaza-koma (Gir); Phatsa (Dig)

The Giriama use pieces of the roots during the symbolic placement of the spiritual grave markers (*koma*) in memory of honoured ancestors. A decoction of the root is used to treat convulsions.

***Vernonia* sp.**

Phoza (Dur)

The Duruma use the species to neutralise the effects of witchcraft in a person or place.

BORAGINACEAE 249

***Bourreria nemoralis* (Guerke)Thulin**

Mubunduki (Dur); *Musimbiji* (Gir); *Mbunduchi* (Dig).

The Giriama use an infusion of the leaf and a decoction of the root to treat a bewitched person. The Digo use a decoction of the root to treat stomach-ache and kidney ailments.

***Cordia faulknerae* Verdc.**

Mugwale (Gir)

The Giriama use an infusion leaf and a decoction of the root to treat ailments resulting from promiscuity and sexual relationships between family members (*vitiyo* or *makoso*).

***Cordia monoica* Roxb.**

Musasa (Dur); *Mzondohera-nguluwe* (Dig)

The Duruma use the stem for building poles. Both Duruma and Digo use the leaves as sandpaper for smoothening arrow shafts.

***Ehretia bakeri* Britten**

Nchikoma/Fungaliza (Dur)

The Duruma use leaves and pieces of roots to make a charm that helps one to be invisible in event of danger, and to bring to an end court cases and disputes that might lead to the conviction of the individual.

SOLANACEAE 250

***Solanum incanum* L. s.l.**

Mtungudza-koma (Dur/Dig); *Mtondo* (Gir)

The Duruma and Digo use root and fruits to treat stomach ailments. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments and a bewitched person. The fruits have a symbolic use, as are placed in symbolic and sacred huts (*chidzumba-mulungu*).

***Solanum nigrum* L. s.l.**

Munavu (Dur/Gir/Dig)

The species is commonly used as a vegetable.

CONVOLVULACEAE 251

***Ipomoea schupangensis* Bak.**

Mufunga-mambo (Gir)

The Giriama burn the leaves and use the ash to make a magical charm that can be used to provide a person with a defence in court case; also to bring to an end persistent problems.

BIGNONIACEAE 257

***Markhamia zanzibarica* (D.C.)Engl.**

Mtwawanda/Mtalawanda (Dur); *Mpalawanda/Mlangazuka* (Dig)

The Duruma use the stem for building poles. Leaves and roots are burnt and the ash is said to make a charm that is used for treating and protection against snakebites. The Digo give a decoction of the root to pregnant mothers who experience abnormal bleeding before child-birth (*nyongoo*); and they use the stem for making beds, bows, and in making snares. The Digo used the wood to make sandals (*mitawanda*), but this seems to be a historical use only.

ACANTHACEAE 259

***Asystesia gangetica* (L.)T. Anders. s.l.**

Tsalakushe (Dur/Gir); *Vongonya* (Gir); *Futswe* (Dig)

The species is a popular vegetable to all the three communities.

***Barleria setigera* Rendle**

Chidungadunga (Dur)

A decoction of the root is used for treating menstrual disorders.

VERBENACEAE 263

***Avicennia marina* (Forssk.)Vierh.**

Mutsu/Mkoko (Dur)

The Duruma use the species for building poles and for firewood.

***Clerodendrum incisum* Klotzsch**

Mukamasi (Dur); *Chimuka/Mtsasa* (Dig)

The Duruma use a decoction of the root and an infusion of the leaf to treat convulsions. The Digo use the stem for making arrow shafts.

Clerodendrum sansibarense* Guerke ssp. *sansibarense

Mukulasiku (Gir). No use for this species was identified.

***Lantana camara* L.**

Mushomoro (Dur/Gir); *Mshomoro/Mjasasa* (Dig)

The fruits are edible. The Giriama use an infusion of the leaf to treat spiritual ailments. Sticks are used for weaving a structure (*susu*) used for trapping birds. The Digo use an infusion of the leaf through oral intake to treat stomach-ache and diarrhoea, the infusion is used also as a bath for high body temperatures.

***Premna chrysoclada* (Boj.)Guerke**

Muvumo (Dur); *Muvuma* (Gir); *Mvuma* (Dig)

Leaves form part of a charm used during the *kaya* cleansing ceremonies. The Duruma use leaves to make a charm used for treating barren women. Duruma and Digo use an infusion of the leaf or the smoke from burning leaves to treat convulsions. The Giriama use infusion of the leaf and a decoction of the root to treat spiritual ailments and ailments resulting from witchcraft. The Digo use an infusion of the leaf for general body pains and use a decoction of

the root to treat blood diarrhoea. A decoction of the root is also used to treat complications during pregnancy and treat menses associated with stomach pains.

***Premna hildebrandtii* Guerke**

Muurusa-pungu (Dur/Dig)

The Duruma and Digo use an infusion of the leaf as a cold bath to treat convulsions. A decoction of the root and an infusion of the leaf are used for diarrhoea and *shango*.

Premna resinosa* (Hoschst.)Schauer ssp. *resinosa

Kasembeka-luanda (Dur); *Mbavubavu-mdide* (Dig)

The Duruma use a decoction of the root and an infusion of the leaf for high body temperatures in children. The Digo use a decoction of the root for swollen scrotum.

***Vitex mombassae* Vatke**

Mufudu-madzi (Dur/Gir); *Mfudu-madzi* (Dig)

Fruits are edible. The Duruma and Giriama use the stem for building poles. The Duruma use a decoction of the root to treat gonorrhoea. A poultice from the root is applied onto the whole body to treat body swells (*mburushi*).

Vitex payos* (Lour.)Merr. var. *payos

Mufudu (Dur); *Mufudu-unga* (Dur/Gir); *Mfudu/Mfudu-unga* (Dig)

Fruits are edible. The Digo use a decoction of the root for gonorrhoea.

***Vitex strickeri* Vatke & Hildebr.**

Mupepo (Dur); *Kafudu-katite/Mukichanuo* (Gir)

The Duruma use a decoction of the root and an infusion of the leaf to treat spiritual ailments (*bulushi*), headaches and colds. The Giriama use an infusion of the leaf to treat spiritual ailments.

LABIATAE 264

***Hoslundia opposita* Vahl**

Mjongolo (Dur); *Mutsereza-moyo* (Gir); *Mtserere* (Dig)

The fruits are edible to all the three ethnic groups. A poultice from the leaf is commonly applied onto a fresh cut to stop bleeding and enhance the healing of the wound. The Duruma use a decoction of the root to treat menstrual and pregnancy complication (*nyongoo*) and to treat convulsions. The leaves are burnt and the ash is used for making a charm that promotes business and fosters good luck in a person. The Giriama use an infusion of the leaf and a decoction of the root to treat spiritual ailments and ailments resulting from witchcraft. The Digo use a decoction of the root mixed with honey to treat stomach problems.

***Ocimum gratissimum* L. var. *macrophyllum* Briq. Syn *O. viride* Willd.**

Luvumbani/Muvumba-manga (Gir); *Vumbamanga* (Dig)

The Giriama rub leaves in the beehive to attract bees into the hive. The Digo use an infusion of the leaf to rinse the mouth for toothache, and use the infusion as a cold bath to treat body swellings of all kinds (*mwadzulu*).

***Plectranthus* sp.**

Vwaha/Reza (Dur); *Kabodzebodze/Katore* (Gir)

Both Duruma and Giriama burn the whole plant and use the ash to make a charm that is used for re-cleansing a place or a person after a calamity. The Duruma use the same charm to treat ailments, especially in children, following promiscuity and prohibited sexual relationships between persons in a family (*vitiyo*) and ailments due to witchcraft (*matsai*). The Giriama use a decoction of the root and an infusion of the leaf to treat spiritual ailments.

***Pletranthus tenuiflorus* Vatke**

Vwaha (Dur); *Vumba/Vumba-mwitu* (Gir); *Mvuga/Mumbu/Galagalatsui* (Dig)

The Giriama use a decoction of the root to treat spiritual ailments. The Digo use a decoction of the leaf for stomach ailments and stomach complications during pregnancy.

***Solenostemon latifolius* (Benth.)J.K.Morton**

Vwaha (Dur)

The Duruma burn the whole plant and use the ash to make a charm that is used for re-cleansing a place or a person after a calamity and misfortunes.

***Tinnea aethiopica* Hook.f. ssp. *litoralis* Vollesen**

Banfyofyo/Mfyofyo (Dur); *Kasembeka* (Gir)

The Duruma use a decoction of the root to treat abdominal pains in infants. The Giriama use a decoction of the root to treat stomach-ache and constipation.

COMMELINACEAE 280

***Commelina africana* L. s.l.**

Dzedza/Mkengeja (Dur)

The Duruma use an infusion of the whole plant as part of charm used during a tribal cleansing ceremony.

***Commelina benghalensis* L.**

Dzedza/Mkengeja (Dur); *Dzadza* (Gir)

The Duruma use infusion of the whole plant as part of a charm used during a *kaya* cleansing ceremony. The Giriama use an infusion of the leaf to treat ailments, especially in children (*chirwa*), following promiscuity and prohibited sexual relationships between persons in a family (*vitiyo*).

***Commelina bracteosa* Hassk.**

Dzedza/Chidzedza/Mkengeja (Dur); *Dzadza* (Gir); *Kogwe-chetu* (Dig)

Used as in *C. benghalensis* above.

***Commelina forskaolii* Vahl**

Dzadza-lume (Dur); *Kongwe-lume* (Dig)

Used as in *C. benghalensis* above.

FLAGELLARIACEAE 281

***Flagellaria guineensis* Schumach.**

Kalumbwi (Dur)

The Duruma use the leaves to make a charm that is used to treat swollen scrotum (*pumbu*).

ZINGIBERACEAE 290

***Siphonochilus kirkii* (Hook.f.)B.L.Burtt**

Mutunguu (Gir)

The Giriama burn the tuber and use the ash to make a charm that is applied through skin incisions to treat spiritual ailments.

ASPARAGACEAE 293

***Asparagus falcatus* L.**

Mwinika-ndzovu/Mwinamo-ndzovu/Mwinika (Dur); *Mwanangira* (Gir)

The Duruma use a decoction of the stem or the root to treat stomach complications and constipation, and an infusion of the leaf is used to treat spiritual ailments and convulsions. The Giriama use an infusion of the leaf as a bath to treat spiritual ailments.

***Asparagus* sp.**

Mwinika-ndzovu/Mwinamo-ndzovu/Mwinika (Dur); *Mwanangira* (Gir)

Both Duruma and Giriama use an infusion of the leaf to treat spiritual ailments and convulsions. The Duruma use a decoction of the stem or the root to treat stomach-ache.

ASPHODELACEAE 293

Aloe volkensii* Engl. ssp. *volkensii

Golonje-ra-msuhuni (Dur); *Bome* (Gir); *Golonje* (dig)

The Duruma and Digo use the latex to treat headache. The Giriama warm the leaves and squeeze them to produce fluid that is used to de-worm the livestock.

Aloe kilifiensii* Engl. ssp. *volkensii

Golonje-ra-msuhuni (Dur)

The Duruma use the latex to treat headache.

***Chlorophytum subpetiolatum* (Baker)Kativu ined**

Mundogo (Dur)

The Duruma children use the fruits for traditional games.

***Chlorophytum suffruticosum* Bak.**

Bunduki (Dur)

No use for this species was identified.

***Cholorophytum comosum* (Thunb.)Jacq.**

Asichana-amwaka/Ria (Gir)

The flowering of the species is understood to coincide with the beginning of long rains.

ARACEAE 302

***Anchomanes abbreviatus* Engl.**

Chera-cha –msuhuni (Dur); *Konzwi-ya-tsakani/Kisurazi* (Gir)

The Giriama apply a poultice from the tuber onto severe wound (*chigoga*) or sceptic swelling.

***Gonatopus boivinii* (Decne)Engl.**

Chera (Dur); *Konzwi* (Gir); *Kundzwi/Uluanga* (Dig).

The Giriama apply a poultice from the tuber onto cheeks to treat mumps (*matumbwi*). The Digo used the tuber for food, especially during famine periods.

***Stylochaeton salaamicus* N.E.Br.**

Toro-nyika (Dur); *Kirazi/Konzwi* (Gir); *Nyaa/Chinyaa* (Dig).

The Duruma use an infusion of the leaf to treat spiritual ailments. The Digo use the species to identify areas with high water table. The Digo apply the ash of a burnt plant on the head of a child to induce salivation.

***Zamioculcas zamiifolia* (Lodd.)Engl.**

Mnyundonyundo (Dur); *Konzwi* (Gir).

Both Duruma and Giriama warm the stem then squeeze out the fluid to make drops for earache.

DIOSCORIACEAE 311

***Dioscorea dumetorum* (Kunth) Pax**

Mariga (Dur/Gir/Dig); *Mani* (Dig).

Root tubers are used for food, especially during the famine periods.

DRACAENACEAE 313

***Sanseviera arborescens* Cornn.**

Chongwa (Dur/Gir); *Kitengwa* (Gir)

Both Duruma and Giriama use the leaves used as tying materials. The Giriama make ropes out of the leaf fibres, which are used specially in making beds and for tying livestock at grazing sites. The Giriama use a decoction of the root to treat veneral diseases (*tego*). The Duruma boil the leaves and use the decoction as an arrow poison. Leaf-pricks are burnt and mixed with other species to make a charm that is used for treating and for protection against snakebite.

***Sanseviera fischeri* (Baker)Marais**

Konje-mutsi (Dur)

The Duruma use the leaf fibre used as tying material.

***Sanseviera kirkii* Bak.**

Makonje-ga-msuhuni (Dur); *Makonje-mala/Mwanangira* (Gir)

Both the Duruma and Giriama use the leaf fibres as tying materials. The Giriama prefer this tying material when building the traditional grass houses. The Duruma use a decoction of the root to protect one against evil spirits.

***Sanseviera robusta* N.E.Br.**

Chongwa (Dur)

The Duruma use the leaf fibres as tying materials. A Leaf poultice is boiled and used for arrow poisoning. The prick of the leaf is included in a mixture that is made to a charm used for treating and for protection against snakebite.

PALMAE 314

***Hyphaene compressa* H.Wendl.**

Mukoma/Mulala (Dur/Dig)

Fruits are edible. The leaf fibres are used commonly for weaving mats, baskets and hats. A palm wine is collected from the species (*mukoma*) but this has become less common in recent times.

PANDANACEAE 315

***Pandanus rabaiensis* Rendle**

Mkaraza/Mkadi/Mgagara (Dur)

The Duruma use a decoction of the root to treat spiritual ailments. Roots and leaves are burnt and the ash is used to make a protective charm against evil eye.

ORCHIDACEAE 326

***Aerangis kirkii* (Reichb.f.)Schltr.**

Mutula-manzie (Dur/Gir)

Both Giriama and Duruma burn the whole plant and the ash is used to make a love charm used to attract a hesitant lover, and also a lucky charm that is used to induce courage, leadership, dominance, good luck and popularity. The Duruma use a decoction of the leaf to treat convulsions.

***Ansellia africana* Lindl.**

Tengula-dzuwa (Dur); *Chiahira* (Dig)

The Duruma and Digo warm the succulent stem of the plant and squeeze out the fluid, which is used as drops for earache. The species is also used for making a love charm and a lucky charm as in *Aerangis kirkii* above.

***Microcoelia exilis* Lindl.**

Mutula-manzie (Dur)

A decoction of the leaf is used to treat convulsions. The species is also used for making love charm and as a lucky charm similar to *Aerangis kirkii* above.

***Solenangis wakefieldii* (Rolfe)Cribb & J.Stewart**

Mutula-manzie (Dur)

A decoction of the leaf is used to treat convulsions. The species is also used for making a love charm and as a lucky charm similar to *Aerangis kirkii* above.

***Vanila roscheri* Reichb.f.**

Mkazikazi (Dur) *Museche* (Gir)

The Duruma use the species to treat stomach-ache in pregnant women and post-natal stomach pains.

CYPERACEAE 331

***Cyperus alternifolius* L. spp. *flabelliformis* (Rottb.)Kuk.**

Ndago/Chidago-msuhu (Dur)

The Duruma burn the whole plant and use the ash to make a magical charm that is used to induce extra body strength (*ndepho*).

***Cyperus kaessneri* C.B.Cl.**

Ndago/Chidago-msuhu (Dur)

The species is used as in *Cyperus alternifolius* above.

***Cyperus exaltatus* Retz.**

Mkangaga (Gir)

The Giriama use the species for thatching houses, especially the traditional grass house.

***Cyperus* sp.**

Kidago (Gir)

The Giriama use a poultice from the tuber to treat spiritual ailments.

***Kyllinga erecta* Schumach. var. *erecta* Syn *Cyperus erectus* (Schumach.)Nattif. & Kuk.**

Ndago (Dur). The species is used as in *Cyperus alternifolius* above.

GRAMINEAE 332

***Cenchrus ciliaris* L.**

Nyasi (Gir). No use for this species was identified

***Dactylotenium geminatum* Hack.**

Nyasi (Gir). No use for this species was identified.

***Enteropogon sechellensis* (Baker)Th.Dur. & Schinz**

Nyasi (Gir). No use for this species was identified

***Heteropogon contortus* (L.)Roem. & chult.**

Katsuchi (Dur); *Todza/Nguji* (Dig)

The vernacular name, in Duruma dialect, indicates that this is a small form (*Ka-*) of *Hyperthelia dissoluta*. The Duruma use the whole plant for thatching traditional grass houses.

***Hyperthelia dissoluta* (Steud.)W.D.Clayton**

Mutsuchi (Dur)

The Duruma use the whole plant for thatching traditional grass houses.

***Megastachya aucronata* (Poir.)P.Beauv.**

Nyasi (Dur). No use for this species was identified.

***Panicum maximum* Jacq.**

Bondo (Dur); *Mondo* (Gir); *M'bondo* (Dig)

The Duruma and Giriama use the species for thatching traditional grass houses. The inflorescence is commonly used for making broom.

***Panicum* sp.**

Kamondo-katite (Gir)

The species is used as in *Panicum maximum* above.

***Setaria* sp.**

Mujowe (Dur). No use for this species was identified.

***Sporobolus fimbriatus* (Trin.)Nees**

Nyasi (Gir). No use for this species was identified.

UNIDENTIFIED SPECIES

Col. No. 3660

Mugalagala (Gir)

The Giriama use an infusion of the leaf, through bathing, to treat spiritual ailments (*pepho*) characterised by stomach complications and psychological instability.

Col. No. 3723

Mutunguri (Gir)

TheGiriam use the root tuber as food, but its use is restricted to famine periods.

Col. No. 3728

Reza (Gir)

The name literally means "neutraliser". The Giriama use an infusion of the leaf to treat ailments resulting from witchcraft (*matsai*); as well as those resulting from promiscuity and prohibited sexual relationships among family members (*vitiyo*).

Col. No. 3772

Mupepo (Gir)

The Giriama use an infusion of the leaf and a decoction of the root to treat ailments resulting from witchcraft.

Appendix VI: Detailed ethnobtanical comparison between Midzichenda utilisation of plants and other communities; and information on the pharmaceutical components of the plants utilised.

The use of root decoction of ***Abrus precatorius*** against gonorrhoea by the Digo was shared with the Boni in Kenya, while communities in Malawi use seeds of the species to treat gonorrhoea, and the Yao in Tanzania use the whole plant to treat veneral diseases in general (Watt & Breyer-Brandwijk 1962). Different uses of the species have been recorded in different communities. The Zulu use root or leaf decoction of ***Abrus precatorius*** to treat chest pains and also used as love charms (Watt & Breyer-Brandwijk 1962), in Zimbabwe the root is used for schitosomiasis (Ndamba *et al.* 1994). The use of the species by the *Midzichenda* to treat asthma is shared with communities in Madagascar (Hutchings *et al.* 1996). Leaves are used for making magical charm by the *Midzichenda*, which is shared with the Zulu in South Arica (Watt & Breyer-Brandwijk 1962, Hutchings *et al.* 1996). Leaves of this species are applied to swellings of various sorts in Zimbabwe, and for sore throats, coughs, colds and fevers in East Africa (Hutchings *et al.* 1996). In Central Africa leaves are used as a vegetable as well as a medicine for stomach complaints; and are used as an eye remedy by the Luvale, in Tanzania and Eritrea (Watt & Breyer-Brandwijk 1962). While the *Midzichenda* use ***Abrus precatorius*** seeds mainly in rattles, the seeds have medicinal values in Central Africa, as remedy for snakebite, ulcers and intestinal worms and powdered seed is used as an oral contraceptive (Watt & Breyer-Brandwijk 1962). Seeds of the species are also used very widely in various parts of Africa, Asia and America for eye complaints and as lucky charms (Hutchings *et al.* 1996).

The ***Abrus precatorius*** seed and root, however, have been identified to be poisonous as they contains *abric acid* and *abrin* (a protein toxin) (Watt & Breyer-Brandwijk 1962). *Abrin* is a toxalbumin which agglutinates erythrocytes and causes haemolysis and enlargement of the lymphatic glands (Oliver-Beever 1986), and enzymes in *abrin* inhibit protein synthesis and cause cell death (Hutchings *et al.* 1996). A report has been made of children who died after eating the seeds. The seeds are also reported to have abortive properties (Desai & Rupawala 1966) and anthelmintic acitivity (Ibrahim 1992). Compounds contained in the roots include *glycyrrhizin, glucan, precasine picrate, abrins* A and B and *abrectorin* (Adesina 1982), and

experimental results have shown that the root extracts are lethal to adult *schistosomes* (Hutchings *et al.* 1996). Sweetening agent *glycyrrhizin* was not detected in leaves, instead other sweetening agents *abrusosides* A-D and *glycosides* were isolated from the leaves (Hutchings *et al.* 1996). The *abrusosides* from leaves lack the toxicity known in the *glycyrrhizin*, and can be useful as commercial sweetners (Hutchings *et al.* 1996).

The genus ***Acacia*** is important in many parts of African continent providing a range of uses which include construction, fodder, charcoal, rope material, and tanning material (Watt & Breyer-Brandwijk 1962). The *Midzichenda* ethnic groups use the bark of ***Acacia spp*** mostly for tying materials and for treating colds and coughs, while stem is used for building and fuel wood. In Tanzania the bark of ***Acacia mellifera*** for making handles of household tools (Watt & Breyer-Brandwijk 1962) which is close to the use of the species by Giriama for making hoe handles. The use of ***Acacia spp*** for wood fuel by *Midzichenda* is shared with other communities such as the Tilhaping who use ***Acacia mellifera*** as their chief fuel wood (Watt & Breyer-Brandwijk 1962), and the species is also used for smelting iron in Embu, Kenya (Beentje, 1994). The medicinal values of ***Acacia spp*** are also shared with other communities. The Kamba, Pokomo, Maasai and Turkana (in Kenya) use bark of ***Acacia mellifera*** against stomach-ache (Beentje, 1994), and roots of the species are used in various parts of Africa for respiratory ailments including Tuberclosis and for stomach ailments including indigestion (Hutchings *et al.* 1996). Tonga and Chopi use the root of ***Acacia nilotica*** to treat tuberculosis, and the Zulu use the bark to treat a dry cough (Watt & Breyer-Brandwijk 1962). Bark of ***Acacia nilotica*** is widely used for diarrhoea and dysentery, sore throats, coughs, children's fevers and toothache, and as a nerve stimulant (Hutchings *et al.* 1996). In Kenya, the Maasai use a decoction of both the bark and root of ***Acacia nilotica*** for gonorrhoea, the decoction is also taken to gain strength and courage (Hutchings *et al.* 1996) and to improve digestion (Beentje 1994).

Apart from the uses of ***Acacia spp*** by the *Midzichenda* communities, in other communities there were other uses recorded for these species. The Bushmen use sap from inner bark of ***Acacia mellifera*** as part of a mixture for application to poison arrows (Watt & Breyer-Brandwijk 1962). The Maasai use bark or root of ***Acacia nilotica*** as a nerve stimulant, to acquire strength and courage, to treat impotency (Watt & Breyer-Brandwijk 1962), and to

improve digestion (Beentje, 1994). The Turkana and Pokot use the ***Acacia nilotica*** fruit juice as an eye medicine (Beentje, 1994). In Indies and West African the bark decoction of ***Acacia nilotica*** is taken for dysentries and diarrhoea (Watt & Breyer-Brandwijk 1962). The ***Acacia nilotica*** leaf has been reported to induce menstruation, the flower as an ointment and the fruit as a remedy for diarrhoea and gynaecological conditions, and the wood is used as cure for small pox. In other parts of Africa, the pods are used for tanning and as fodder (Watt & Breyer-Brandwijk 1962).In Sudan, the ***Acacia nilotica*** wood is used for railway sleepers and in local building (Watt & Breyer-Brandwijk 1962).

The bark of ***Acacia nilotica*** yields high percentages of tannin (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996), and has been used in India for commercial tanning, while the seed are used for tanning in Nigeria (Watt & Breyer-Brandwijk 1962). *Saponins* have also been found in the species. The seeds contain some rare amino acids, protein and fiber, and flowers contain *flavonoids* (Hutchings *et al.* 1996). Extracts containing *flavonoids* show antibacterial activity against *Staphylococcus aureus* and *Escherichia coli* (Khan *et al.* 1980). The bark extracts of ***Acacia nilotica*** show strong antigococcal activity and inhibit growth of *Neisseria gonnorhoea* (Sawhney 1992), and fruits have shown antimicrobial properties which are probably not due to tannins (Abd El Nabi *et al.* 1992). Leaf sap, bark and young fruit are very astringent, and are reported to stop bleeding (Watt & Breyer-Brandwijk 1962), while bark and root decoctions have intoxicating effects and bark decoction is reported to have detergent effects (Hutchings *et al.* 1996).

The use of the bark of ***Acacia robusta*** for treatment of chest complaints by the *Midzichenda*, is shared with the Zulu in South Africa (Hutchings *et al.* 1996). In addition to its medicinal use, the Zulu use the bark of ***Acacia robusta*** for magical purposes (Palmer & Pitman 1972), and ground bark is used to dispatch snakes (Pooley 1993). Roots of ***Acacia robusta*** are reputed to be poisonous (Pooley 1993). Conflicting reports are cited about the presence of *cyanogenic glycosides* and *hydrocyanic acid* in the immature pods and fresh and dry leaves (Watt & Breyer-Brandwijk 1962).

The use of ***Achyranthes aspera*** against veneral diseases by the Duruma is shared with other communities in East Africa (Kokwaro 1976). The use of the species by the Duruma to treat

boils is more common among other communities in Africa, Madagascar and othe pantropical countries (Hutchings *et al.* 1996). In addition to the uses recorded in this study, the species has other uses among other communities. Some communities in East Africa apply ground leaves to incisions on sprained ankles and for headaches, root decoction is used for relief of "stitch" and root is chew and applied on fresh cuts to stop bleeding (Hutchings *et al.* 1996). The Tanzania communities eat young parts of this plant (Watt & Breyer-Brandwijk 1962). In Somalia aerial parts of the species are used for diarrhoea, and root decoction is taken for chronic stomach ailments and intestinal spasms (Claeson and Samuelsson 1989; Samuelsson *et al.* 1991). The Zulu uses the root for chest pains, the Kwena and Tswana inhale steam of a hot infusion, and use it in a hot bath for acute chills (Watt & Breyer-Brandwijk 1962). In Botswana root decoction is used for excessive bleeding (Hulme 1954). In Nigeria flowers are used for nasal infections (Desta 1993). In India, Egypt and Australia, roots and leaves are used as digestive and against stomach-ache, and also as a remedy for piles, for treating renal dropsy and bronchial infections (Watt & Breyer-Brandwijk 1962). Seeds are used in East Indies to treat bronchial infections, hydrophobia and itching (Watt & Breyer-Brandwijk 1962), while in the Philippines the plant sap is used to dissipate opacity of the cornea, and for toothache, dysentery and other bowel complaints (Hutchings *et al.* 1996). In India seeds are applied on inflamed and enlarged glands, root paste is given to alleviate postnatal pain and to accelerate placenta expulsion (Watt & Breyer-Brandwijk 1962, Manandhar 1991). Ash of the species is used to treat scabies in Ethopia (Hutchings *et al.* 1996). In West Africa a salt is prepared from the ash of the plant, and in India the ash is mixed with honey and taken for coughs (Watt & Breyer-Brandwijk 1962). In Mauritius root decoction is taken for renal dropsy, fever and pulmonary problems, while decoction of the whole plant is used to wash skin infections (Grib-Fakim *et al.* 1993).

The plant is known to be poisonous and used as a diuretic in many parts of the world (Watt & Breyer-Brandwijk 1962). According to Watt & Breyer-Brandwijk (1962) the fruit of ***Achyranthes aspera*** contain a large percentage of alkaline ash (Watt & Breyer-Brandwijk 1962), a betaine known as *achyranthine*, and the seeds yielded saponins A and B (Hutchings *et al.* 1996). The betaine has cardiac depressant, vasodialating, respiratory analeptic activity, and diuretic, purgative and slightly antipyretic effects (Hutchings *et al.* 1996). The herb gave mild positive spot test for alkaloids (Watt & Breyer-Brandwijk 1962). In India the dry plant

was reported to contain potassium chloride, fat that melts at 59°, but the species gave negative tests to volatile oil, sterol and glycoside (Watt & Breyer-Brandwijk 1962). Aqueous leaf extracts show some antibacterial activity (Desta 1993).

Eating seeds of ***Adansonia digitata*** and the use of the seeds as food spice by the *Midzichenda* communities is common in other communities. Shona suck the seed until the powdery cover dissolved in the saliva, and use the pulp around the seeds in making a refreshing drink in water (Watt & Breyer-Brandwijk 1962). The pulp around the seeds is eaten wet or dry by the Vahvenda (Mabogo 1990). Although the *Midzichenda* used ***Adansonia digitata*** seeds only for food value, the Shona use a drink made from seeds against fevers, haemoptysis and diarrhoea, and powdered seeds are used for hiccough in infants and children; and in Central Africa seeds are used as a remedy for dysentery (Watt & Breyer-Brandwijk 1962). Among other communities the food value of ***Adansonia digitata*** is found in more than just the seeds. In Zimbabwe the leaves are eaten as a vegetable, in West Africa dried leaf is used as condiment and seasoning and fresh leaf as spinach, and in Senegal the bark is an article of diet (Watt & Breyer-Brandwijk 1962). In Nigeria the Hausa and the Fulani use fresh or dried leaf in making soup, as well as the fruit pulp, and the seed kernel is made into cake that is used for flavouring soup (Watt & Breyer-Brandwijk 1962).

The medicinal values of ***Adansonia digitata*** leaf identified by the Duruma are shared with communities in Sierra Leone, but for different ailments. In Sierra Leone the species is used for fevers, malaria, excessive perspiration and as an astringent (Watt & Breyer-Brandwijk 1962). In this study ***Adansonia digitata*** bark was recorded as of medicinal values, which is shared with the Vahvenda, who use the bark infusion to wash a baby so that he or she can grow faster (Mabogo 1990). However, in addition to medicinal value, the bark is used for weaving textiles and making wrapping material by some communities in East Africa (Watt & Breyer-Brandwijk 1962). In southern Zimbabwe the fruit shell is used as a snuffbox and for carrying liquids (Watt & Breyer-Brandwijk 1962). This is similar to the use of the fruit shell by Duruma in local palm sap tapping. The sacredness of ***Adansonia digitata*** recorded in this study is shared by communities in Sudan and West Africa, where the tree is worshiped as a "fertility tree" (Watt & Breyer-Brandwijk 1962). The Vhavenda believe that the species has protective powers against witchcraft and lightning (Mabogo 1990). The species is important

as a source of water in dry areas like the Kalahari and Kordofan, where a hole is drilled on the side and water is collected in the process (Watt & Breyer-Brandwijk 1962).

The fruit pulp contains some *ascorbic acid,* 2% of free *tartaric acid* and 12% of *Potassium bitartrate*, and traces of *tartaric, malic* and *pectic acids, citric acid, reducing sugars* and *proteins* (Watt & Breyer-Brandwijk 1962). The seed contain proteins, and the principle protein is *globulin*, but both fruit pulp and seeds gave negative results to test for starch and the oily kernel contains no starch, alkaloid or glycosides, but has up to 11.6% of *fixed oil* (Watt & Breyer-Brandwijk 1962). The leaf contains *sodium chloride, potassium acid tartrate, calcium oxide, tanin, mucilage*, and a flavonoside (*adansonia-flavonoside*), but gave negative results in a test for *haemolysis*; while aqueous and alcoholic extracts of the leaf had low toxicity, and the bark contains *adansonin* that has a poisonous action.

The medicinal uses of ***Adenia gummifera*** by the Digo is shared with the Zulu and Ronga, who use the root decoction and leaf infusion to treat malaria (Watt & Breyer-Brandwijk 1962). The magical and protective use of the species by Duruma are also shared with the Zulu who sprinkle powdered stem and leaf at homestead entrance as protective charm to ward off evil spirits. Despite the medicinal uses identified, where the sick drink the plant decoction, the species is suspected to be contain poisonous *toxalbumin*, which produces centrilobular necrosis of the liver (Watt & Breyer-Brandwijk 1962).

The use of ***Adenia kirkii*** to treat menstrual complications by the Duruma and Giriama, was not common in other communities. However, the general medicinal value of the species is recognised by the Tonga, who use the species to treat bronchitis (Watt & Breyer-Brandwijk 1962). Despite these uses the species is suspected to contain a toxalbumin (Watt & Breyer-Brandwijk 1962).

Watt & Breyer-Brandwijk (1962) noted that ***Adenium obesum*** is used as an arrow poison in East Africa, and in this study this was confirmed in the Duruma, Giriama and Digo communities. Although Beentje (1994) noted that the species is used for fish poison and arrow poison, as well as an insecticide by some Kenyan tribes, these uses were not identified among the *Midzichenda* ethnic groups in this study.

The use of ***Afzelia quanzensis*** for the specific medicinal purposes by the Digo was not common among other communities, however, other medicinal uses targeting different ailments have been recorded. In Zimbabwe the bark is used for uterine pain (Watt & Breyer-Brandwijk 1962), depressed fontanelles in infants and as a lucky charm (Gelfand *et al.* 1985). The Chewa chiefs in Malawi use bark infusion as body washes (Williamson 1975), and root infusion used for the treatment of schitosomiasis (Hutchings *et al.* 1996). Unspecified parts of the plant are also used for eye complaints and as a hunting charm (Hutchings *et al.* 1996), and root infusion used for snakebite (Kokwaro 1976). The value of timber of this species for furniture is common. Crafting of household items from the wood of ***Afzelia quanzensis*** was recorded among the Giriama and Duruma in this study. Similar uses were recorded in Zimbabwe, where the stem is used for making dugout canoes, drums and bowls (Watt & Breyer-Brandwijk 1962). The timber was used in making railway sleepers in Tanzania (Watt & Breyer-Brandwijk 1962). The black seed of this species, with its bright red aril is used for making necklaces and curios in Zimbabwe (Watt & Breyer-Brandwijk 1962). This use was not recorded among the *Midzichenda* communities in this study.

While the *Midzichenda* use ***Agathisanthemum bojeri*** for protective charm, the Zulu use the species for love charm. The other specific medicinal uses by Giriama and Digo, recorded in this study, were not common in other communities. However, different medicinal values of the species were recorded among the other communities. The Karanga in Zimbabwe smoke the seeds for relief of cough and difficulty in breathing; and the Nyamwezi use leaves of the species as a snakebite remedy (Watt & Breyer-Brandwijk 1962). The leaf is said to contain the dyestuff *alizarin* (Watt & Breyer-Brandwijk 1962).

The ***Albizia anthelmintica*** is important for timber and for crafting among the *Midzichenda* communities. The value of timber was also noted in the Damaraland where wood is used for making household utensils (Watt & Breyer-Brandwijk 1962). The medicinal value of ***Albizia anthelmintica*** roots by the Duruma recorded in this study is shared with other communities. The Swati and Ronga use the root as remedy for stomach troubles (Watt & Breyer-Brandwijk 1962), the roots are used against veneral diseases in Venda (Mabogo 1990) and in Somalia (Hutchings *et al.* 1996). In addition to root, the bark has also been recorded to have medicinal values to other communities. Bark infusion is used as an anthelmintic particularly against

tapeworm in West Africa, Ethiopia, Somalia, Tanzania (Watt & Breyer-Brandwijk 1962) and in southern Africa (Hutchings *et al.* 1996). Maasai women take the bark infusion as a sexual stimulant, when mixed with honey it is used as a remedy for gonorrhoea, syphilis and rheumatism, and when mixed with blood or milk is used as an anthelmintic and for nervous complaints (Watt & Breyer-Brandwijk 1962). Maasai women take a bark infusion immediately after menses to prevent pregnancy; and a bark infusion is used as an emetic and also used against tapeworm and malaria by the Pokot (Beentje 1994). However, the poisonous status of the species has also been recorded. A decoction of bark and leaves has been reported to have caused the death of a woman (Kokwaro 1976), and unspecified parts of the plant have been used as fish poison (Hutchings *et al.* 1996). According to Jalal (1987), crude plant extracts are highly toxic.

According to Watt & Breyer-Brandwijk (1962) the bark contains *saponins* (the principal anthelmintic substance), *phloroglucinol, kosotoxin, lead acetate, barium hydroxide* but no *alkaloids*; and an infusion of the bark was poisonous to earthworms, hence the moderate efficiency in treating patients of tapeworm infestation. *Saponins* are also found in the rootbark and seeds, and anthelmintic activity from extracts of rootbark has been observed (Hutchings *et al.* 1996). According to Hutchings *et al.* (1996), no anthelmintic activity was observed in *saponin* fractions from the bark, but aqueous extracts from the leaves show some anthelmintic activity, and crude leaf extracts are highly toxic (Jalal 1987; Ibrahim 1992). The pollen is highly reactive to the eye, producing irritant-like effects (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996).

The medicinal values of ***Albizia versicolor*** recorded in this study were noted in other communities, except that different ailments are treated. The Zigula uses the root-bark as a remedy for headache, in Tanzanian it is used as a purgative, enema and anthelmintic, and in Zimbabwe the bark infusion is used as an application for eyesores and skin rashes, and is taken internally for puberty troubles (Watt & Breyer-Brandwijk 1962). In addition to medicinal values, the wood of this species is a popular source of quality timber in many communities (Watt & Breyer-Brandwijk 1962) and this includes the *Midzichenda* communities as noted in this study. Another use of ***Albizia versicolor*** that was not recorded

among the *Midzichenda*, was the use of the root as a soap substitute, which is practised by Luvale and other communities in Tanzania (Watt & Breyer-Brandwijk 1962).

The use of *Amaranthus sp.* as a vegetable by the *Midzichenda*, is shared with other communities in Tanzania, South Africa, Zimbabwe (Ngwaketse and Tswana), Iran and Iraq ***Amaranthus paniculatus*** (Watt & Breyer-Brandwijk 1962). Although ***Amaranthus paniculatus*** is said to be poisonous when frosted or wilted, in the Indian Peninsula it is cultivated for its grain that forms a staple food. Although in this study there was no medicinal uses identified for *Amaranthus sp.*, ***Amaranthus paniculatus*** is used as a diuretic in Tanzania and for chest complaints in the Philippines (Watt & Breyer-Brandwijk 1962). The seeds of ***Amaranthus paniculatus*** contains 9 – 11% moisture, 14.5 – 16% crude protein, 66.8% carbohydrate, 2% crude fibre and 3.6% ash, and the ash contains 6% Calcium and 18% Phosphorus (Watt & Breyer-Brandwijk 1962). The species showed negative results in a *cholagogue* test.

Although there were no medicinal uses recorded for ***Antidesma venosum*** in this study, th species is used for abdominal disorders and for dysentery by the Zulu in South Africa (Hutchings *et al.* 1996). The roots of ***Antidesma venosum*** are used for infertility in Venda (Mabogo 1990), and for snakebite and abdominal pain in East Africa (Kokwaro 1976). In Tanzania root decoction of the species is taken for uterine prolapse, abdominal pain, veneral diseases, schistosomiasis, malaria, bleeding from cuts, and to facilitate conception and for expulsion of retained placenta (Chhabra *et al.* 1993). The use of the species to strengthen fishing nets by the *Midzichenda* was not common among other communities. Instead, roots of the species have been reported to be toxic and used as fish baits (Watt & Breyer-Brandwijk 1962), which possible suggests that the use of the species by *Midzichenda* is more for fish poisoning than the strengthening of their nets.

The medicinal and spiritual uses of ***Asparagus sp.*** recorded among the *Midzichenda* in this study was common among the Mpondo nursing mothers, who use the species to protect their children against witchcraft; the Sotho who administer root decoction to treat rash after snakebite; and Tanzania communities use the species for backache relief (Watt & Breyer-Brandwijk 1962).

The use of ***Asystesia gangetica*** as a vegetable by the *Midzichenda* recorded in this study was not shared with the other communities. Although ***Asystesia gangetica*** had no medicinal values among the *Midzichenda* ethnic groups, it is widely used by other communities for medicinal purposes. The Swahili use the leaves of ***Asystesia gangetica*** as an antidote for snakebite, Nyamwezi use powdered root for snakebite and the Zulu use root decoction to treat enlarged spleen in new-born (Watt & Breyer-Brandwijk 1962). A decoction of the species is used to lighten pains during childbirth in West African, in the Philippines the leaf and flower are eaten as potherbs and as an intestinal astringent, and in India the species is administered for swellings and rheumatism, and as a vermifuge in Tanzania (Watt & Breyer-Brandwijk 1962). ***Asystesia gangetica*** indicated positive results for the presence of *sterols* and trace *alkaloid*, is rich in *potassium*, and gave negative results for *haemolysis, flavonols,* and *tanin* (Watt & Breyer-Brandwijk 1962).

Bidens pilosa was identified to be used as a vegetable by the *Midzichenda*, and this use was shared with Vhavenda (Mabogo 1990). In addition to the food value, in other communities medicinal uses of the species have been recorded. The Vhavenda use the species to stop excessive menstrual bleeding, and as a baby food (Mabogo 1990). The Zulu use the species to treat rheumatism, for pain relief and for diarrhoea (Watt & Breyer-Brandwijk 1962, Hutchings *et al.* 1996). A leaf decoction of ***Bidens pilosa*** is used for inflammation by some South African communities; for dysentery, heartburn, cough and fits in children in Tanzania (Watt & Breyer-Brandwijk 1962); and for earache, eye complaints, diarrhoea, inflammations, coughs, snakebites, and jaundice in West Africa (Ayensu 1978). In Mexico the species is used as a tonic, a stimulant and a tea substitutes (Watt & Breyer-Brandwijk 1962).

Bidens pilosa has shown antibacterial activity against a variety of micro-organisms including five pathogens, and has given positive results with some alkaloidal tests, but negative tests for volatile oil, *saponin, triterponoid* and *hydrocyanic* acid (Watt & Breyer-Brandwijk 1962). Although in this study the species was recorded to be used as a vegetable, and is widely eaten as pot-herbs in southern Africa (Hutchings *et al.* 1996), experimental results indicate that consumption of the cooked plant may be a promoting factor in human *oesophageal* cancer (Mirvish *et al.* 1979; 1985).

The use of ***Blepharispermum zanguebaricum*** for medicinal purposes among the Giriama was shared with the Shambala in Tanzania who use leaf extract and the root of the species as medicines (Watt & Breyer-Brandwijk 1962).

Utilisation of the inner bark of ***Brachystegia spiciformis*** as tying material by Duruma and Digo is shared with communities in Tanzania, Mozambique and Zimbabwe. In addition these communities use the bark of this species for making bark-cloth, stitched canoes, sacks, beehives and corn-bins (Watt & Breyer-Brandwijk 1962). While the Duruma use the inner bark of ***Brachystegia spiciformis*** to make fish traps, in Zimbabwe roots of this species are used for making fishing nets (Watt & Breyer-Brandwijk 1962). ***Brachystegia spiciformis*** wood is a source of timber among the *Midzichenda*, this use was also recorded in Zimbabwe where timber from this species is used for making canoes, as railway sleepers and in wagon building (Watt & Breyer-Brandwijk 1962). Preference of the ***Brachystegia spiciformis*** for charcoal burning was noted in Fungo, and according to Watt & Breyer-Brandwijk (1962) in Zimbabwe the wood of this species is used to make good quality charcoal. Although no medicinal values were recorded in this study, the bark decoction of ***Brachystegia spiciformis*** is used as an eyewash for conjunctivitis in Tanzania (Watt & Breyer-Brandwijk 1962).

The use of fruits of ***Bridelia cathartica*** for food recorded in this study is common among other other communities in Africa (Watt & Breyer-Brandwijk 1962). Medicinal values of the species recorded in the current study are also shared with other communities, but the latter treating different ailments. In northern Zimbabwe the species is used as a purgative, and for treating sterility in men (Watt & Breyer-Brandwijk 1962). In South Africa, the Zulu use the species for love charm medicines (Gerstner 1941) and also reputed to be used in various ways by sorcerers (Hutchings *et al.* 1996). Some communities in East Africa use the root of this species to treat stomachache (Kokwaro 1976).

The medicinal values of ***Capparis fascicularis*** (*syn. C. elaeagnoides*) were recorded in other communities, although for different ailments. The Maasai recognise the species as being poisonous, however, they use the fruits and roots in medicines against colds (Beentje 1994). In Tanzania the species is used as a remedy for backache and for sore throat (Watt & Breyer-

Brandwijk 1962). The species has been found to contains 0.05% of *quaternary ammonium compounds* (Watt & Breyer-Brandwijk 1962).

The stimulant power of ***Carpolobia goetzei*** in penile erection recorded in this study was not common to other communities. Food value, instead, were recorded among other communities, as the fruits are edible (Watt & Breyer-Brandwijk 1962).

The use of ***Cassia singueana*** as a remedy for veneral diseases by the Duruma is shared with the Chagga and Sukuma who use the species for the same purpose, while the use of the species to treat stomach complaints is shared with some communities in Tanzania (Watt & Breyer-Brandwijk 1962). While the Digo use ***Cassia singueana*** to treat pre-natal problems, the Chagga use the species for post-natal problems and to improve lactation in breast-feeding mothers (Watt & Breyer-Brandwijk 1962). A use not recorded in this study was the utilisation of the leaf and fruit as a foodstuff by some communities in Tanzania (Watt & Breyer-Brandwijk 1962). According to Watt & Breyer-Brandwijk (1962) the bark contains *tannin* and is occasionally used as a tanning material in East Africa and Eritrea, but in this study of *Mdzichenda* communities, the species was not used for tanning material. The Zulu keep a *Cassia sp.* around their huts to repel snakes, as it has an offensive smell (Watt & Breyer-Brandwijk 1962).

Some *Cleome spp.* (***C. hirta, C. monophylla***) like the *Cleome sp.* identified in this study, are used as vegetables in West Africa (Watt & Breyer-Brandwijk 1962). The Pedi use the young leaf, shoot and inflorescence of ***Cleome monophylla*** as a potherb, and in India the species is used as an anti-helminthic (Watt & Breyer-Brandwijk 1962).

The uses of ***Cissampelos pareira*** to make love and success charms, and its leaves for bandaging, as recorded in this study, were not shared with other communities. However, the use of the species for relief of abdominal pains was shared with some communities in Tanzania (Watt & Breyer-Brandwijk 1962) and in India (Hutchings *et al.* 1996). In addition, the communities in Tanzania and Madagascar use the root for complications in pregnancy (Watt & Breyer-Brandwijk 1962), to stop bleeding after delivery, and as a sexual stimulant (Hutchings *et al.* 1996). It is believed that the root has a quinine-like action and has been used

as a bitter tonic, and has been extensively used as a remedy for diarrhoeas and coughs; and root and leaf are externally used for scabies and sores (Watt & Breyer-Brandwijk 1962). Although the plant is not known to be toxic, in the Philippines and West Indies it is used as a fish poison (Watt & Breyer-Brandwijk 1962). However, Schultes and Raffauf (1990) reported one of the principal components of *curare* in a ***Cissampelos pareira*** variety in Ecuador, where the Ketch use the species as an arrow poison (Hutchings *et al.* 1996). The root contains *alkaloids, saponin, sugars* and *organic acids* (Hutchings *et al.* 1996).

The use of ***Cissus phymatocarpa*** (*syn. C. quadrangularis*) as a tying material by Duruma is not shared with other communities. Medicinal values of this species were recorded among the Turkana, who use root infusion to treat chest pain (Beentje 1994). In West Africa, the leaves and ground stem are applied to burns and wounds (Oliver-Beever 1986) and stem is used for gastro-intestinal complaints (Hutchngs 1996). In Nigeria leaves of the species are used in ointments for backache and body pain (Bhat *et al.* 1990), and in medicines for protection from witchcraft in Botswana (Hedberg & and Staugard 1989). In addition to medicinal uses, the Turkana use the species as a pesticide against termites (Beentje 1994). The fruit is believed to be poisonous (Beentje 1994). The species is known to contain a mixture of steroids, which has androgenic properties (Hutchings *et al.* 1996), and diuretic activities (Hedberg & Staugard 1989).

The use of ***Cissus rotundiflia*** as a tying material by the *Midzichenda*, recorded in this study, is shared with the Tugen (Beentje 1994). The use of roasted stem of ***Cissus rotundiflia*** for ear drops by the Giriama, was comparable to use of the roasted leaves of this species by Tugen to reduce swellings caused by bee stings (Beentje 1994). The Somali use a leaf decoction against stomach-aches.

The importance of ***Combretum schumannii*** wood for building poles was common among other communities in Kenya (Beentje 1994). Apart from the construction and fuelwood purposes recorded in this study, the use of this species by other Kenyan communities for carving (Beentje 1994) was not common among the interviewed *Midzichenda* groups.

Commelina africana has more medicinal uses among other communities than recorded for the *Midizchenda* community in this study. The Sotho use this species as medicine for barren women, ash from burnt plants is used to treat sterility in Sotho men (Watt & Breyer-Brandwijk 1962). An infusion of ***Commelina africana*** is used by the Zulu to treat restlessness in sleep, while Ndebele use a root decoction of this species to treat veneral diseases, problems in the menstrual period (Watt & Breyer-Brandwijk 1962), and for female sterility (Wright 1963; Hutchings *et al.* 1996). In Zaire (Democratic Republic of Congo) the species is used to treatment "weak heart" and "nervousness" and pains around the hips and in bladder complaints (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996). In some parts of South Africa the root of the species is used to soothe pain (Wright 1963; Hutchings *et al.* 1996). The leaves of ***Commelina africana*** are known to have an aperient effect (Watt & Breyer-Brandwijk 1962).

The use of ***Commelina benghalensis*** to treat child diseases by Giriama is shared with some Tanzanian communities (Watt & Breyer-Brandwijk 1962). Other medicinal values of the species (for different ailments) has been recorded among other communities. The Sotho use ***Commelina benghalensis*** to treat barren women; in Tanzania leaf juice is applied on burns; in the Philippines the species is used as an ointment lotion and for the relief of strangury; in India the species is used as a refrigerant and a laxative as well as a famine food (Watt & Breyer-Brandwijk 1962). Both the vegetative and reproductive organs of ***Commelina benghalensis*** have yielded *hydrocyanic acid*, but have given negative tests for antibacterial effects (Watt & Breyer-Brandwijk 1962).

The medicinal use ***Commiphora africana*** by the *Midzichenda* to treat veneral diseases, convulsions and spiritual ailments, recorded in this study, were not shared with other communities, instead different ailments were identified to be treated using the species. According to Watt and Breyer-Brandwijk (1962) the bark of ***Commiphora africana*** is used to treat snakebite, for stomach-ache and as an eye remedy by some communities in East Africa; and the fruit of the species is used by Ronga as a remedy for stomach problems. In various parts of West Africa, steam from boiling resin of this plant is used for inflammation of the eyes, the bark is applied to scorpion bites, and macerated stem-bark is taken for rheumatic diseases (Oliver-Beever 1986). In additional to the medicinal uses, the gum of ***Commiphora***

africana is used in Tanzania as a perfumed application to the body, and in West Africa (Watt & Breyer-Brandwijk 1962) and in South Africa (Hutchings *et al.* 1996) the species is used as an insecticide especially as a repellent against termites. ***Commiphora africana*** yields a gum that resembles gum arabica, but is 70% of resin and 29% of gum.

The specific medicinal uses of ***Commiphora edulis*** *(syn. C. boiviniana)* by the *Midzichenda* community groups recorded in this study were not shared with other communities. However, the general medicinal value of the species was recorded in other communities. The Zigula use the bark of ***Commiphora edulis*** to treat dysentery (Watt & Breyer-Brandwijk 1962). In addition to medicinal uses, fruit of ***Commiphora edulis*** is used by Zigula as a fish poison and as an arrow poison (Watt & Breyer-Brandwijk 1962).

The use of ***Commiphora eminii*** *(syn. C. zimmermannii)* for soft timber and crafting recorded in this study was not common among other communities. The species, however, has medicinal value to some communities. According to Watt and Breyer-Brandwijk (1962) the Chagga use leaf stalk as a toothache remedy, and the root and bark as indigestion remedies, while boiled root and wood or cold leaf infusion are used as remedy for fever in East Africa. The Kikuyu often plant this species as a hedge and as a support for yams (Beentje 1994). According to Beentje (1994) the species was formerly used by some Kenyan communities to make sacred shrines.

The use of ***Cordia monoica*** *(syn. C. ovalis)* leaves as sand-paper by Digo and Duruma recorded in this study was common among other communities in Kenya, who also identified the fruit as being edible (Beentje 1994). Medicinal uses of ***Cordia monoica***, not recorded in this study, were identified among the Maasai who make a love charm from the plant, while some communities in Tanzania use the leaves and bark as a remedy for leprosy (Watt & Breyer-Brandwijk 1962).

The use of ***Croton pseudopulchellus*** to flavour milk by the Duruma as recorded in this study was not common among other communities. Different medicinal values of the species were identified among Nyamwezi, who use it for treating asthma and syphilitic sores (Watt & Breyer-Brandwijk 1962). Leaves and roots are used as antiviral in Ghana (Irvine 1962). The

root and leaf are reputed to be poisonous (Pooley 1993), and *toxalbumin crotin* is thought to be present in these plant parts (Watt & Breyer-Brandwijk 1962).

The use of ***Dichrostachys cinerea*** as a cure for stomach ailments by the *Midzichenda*, recorded in this study, was shared with the Pedi (Watt & Breyer-Brandwijk 1962). The use of the species to treat child diseases is shared with the Vahvenda (Mabogo 1990). The other specific medicinal uses of the species by the *Midzichenda* were not common among other communities, where different ailments have been targeted. In South Africa the species is used to treat toothache by Tonga (Watt & Breyer-Brandwijk 1962), and roots of the plant were used by the Zulu to ease pain (Hutchings *et al.* 1996). The Vahvenda use the species to treat stoamch ailments, toothache, painful eyes, sores, and as a protective and lucky charm (Mabogo 1990). In Central Africa leaves of ***Dichrostachys cinerea*** are used for indigestion and diarrhoea, and root decoction for leprosy and syphilis; in Tanzania the Zigua use the root to treat chest complaints, and the Chagga use the twig to treat gonorrhoea and syphilis (Watt & Breyer-Brandwijk 1962). In Tanzania, bark decoction is used to treat elephantiasis and is applied cold after circumcision to heal the wound; and powdered bark is used for all sorts of skin effects in people and animals. In Liberia the species is used as remedy for sore throat, diarrhoea, headache and veneral disease, and in Zimbabwe the Nyanja use the leaf and root to treat tuberculosis (Watt & Breyer-Brandwijk 1962). In Tanzania and Liberia, chewed and macerated root is applied on snakebite lesions and macerated leaf applied on scorpion stings (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996).

Application of ***Dichrostachys cinerea*** in symbolic uses and as a ritual cleanser recorded in this study, is also common among other communities in southern Africa (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996). The Hausa use the fruits of the species as a part of a magical charm, the Pedi use a root decoction to ward off evil, and the Lubedo chew the bark in ritual cleansing of the stomach after a 'visit' of a dead relative (Watt & Breyer-Brandwijk 1962). Among different communities, in addition to medicinal and symbolic values, the species is important for crafting, constructional and fuel purposes. The wood of ***Dichrostachys cinerea*** is used for building, for making tool handles, bows and assegai shafts; for fuel and making charcoal in South Africa, and the plant yields a strong fibre that can be used for making bags and sacks (Watt & Breyer-Brandwijk 1962). The root decoction of

Dichrostachys cinerea given to babies is reported to cause vomiting and diarrhoea (Joshi and Sharma 1977). The root and leaves of the species contain *alkaloids* and *saponins* (Hutchings *et al.*. 1996), and anthelmintic, antidysenteric, antigonorrhoeic and diuretic properties have been reported (Watt & Breyer-Brandwijk 1962). Extracts from the stem and branches have shown both positive (Khan *et al.* 1980) and negative (Hedberg and Staugard 1989) antibacterial and cytotoxic activities.

The occurrence of the alkaloid, *dioscorine*, is a characteristic of the genus ***Dioscorea***. The effects of *Dioscorine* include inducing paralysis of the central nervous system, anaesthetic activity, antidiuretic action and depressing effect on the ileum. Also, *Dioscorine* potentiates the action of adrenaline on the blood pressure (Watt & Breyer-Brandwijk 1962). ***Dioscorea alata*** is one of those identified to have edible yams, because although it is poisonous, it is safe when boiled or roasted. In this study ***Dioscorea dumetorum*** was identified to be used for food by the *Midzichenda* groups. The food value of the species was common in other communities. According to Watt and Breyer-Brandwijk (1962) the tuber is used as either a routine food or in times of famine in the Philippines, Java, Ghana, Sudan, Uganda, Kenya, South Africa, and Angola. The tuber is made less toxic by leaching (soaking in running water), a process that takes at least three days. The poisonous status of ***Dioscorea dumetorum*** is shown by the use the tuber (mixed with green maize) as a poison-bait for monkey by the Zulu (Watt & Breyer-Brandwijk 1962). The monkey is said to become confused as a result of eating the mixture and is easily physically killed. In West Africa, the plant is sometimes planted on the perimeter of non-poisonous yam plantation in order to discourage monkeys and would be thieves (Watt & Breyer-Brandwijk 1962). Strictly wild forms of this yam are poisonous due to the presence of alkaloid *dioscorine*, however another alkaloid has also been isolated from the tuber, this is *dihydro-dioscorine*. The second alkaloid is a convulsive poison, and can produce fatal results (Watt & Breyer-Brandwijk 1962). Although in this study medicinal values of ***Dioscorea dumetorum*** were not recorded, in other communities the species is important as a medicine. The species is used to relieve pain in Sekukuniland; in Tanzania the species is used as a remedy for schistosomiasis (Watt & Breyer-Brandwijk 1962), and in Nigeria it is used in antidiabetic therapy (Undie and Akube 1986).

The medicinal and constructional uses of ***Dombeya taylorii*** recorded in this study were not common among other communities. Beentje (1994) identified crafting value of the species among some communities in Kenya, who use the species for making bows, and obtain fibre from the bark.

The medicinal, crafting and symbolic uses of ***Encephalartos hildebrandtii*** recorded in this study were not common among other communities. The species, however, has food value to some communities in Tanzania. According to (Watt & Breyer-Brandwijk 1962) the stem of ***Encephalartos hildebrandtii*** is used as food during famine in Tanzania, and the fruit pulp is edible. However, the stem is said to be highly poisonous and unless it is soaked in water for at least six days it could be fatal (Watt & Breyer-Brandwijk 1962).

Most of the uses of ***Euclea natalensis*** (*syn. E. fructuosa*) recorded in this study (spiritual, construction and toothbrush sticks) were not common among other communities. The specific medicinal uses were also not shared, but other medicinal values have been recorded in other communities. The Zulu use ***Euclea natalensis*** root as a purgative, particularly in abdominal complaints and usually taken as an infusion, while Shangana use charred and powdered root as an application on skin lesions in leprosy and the Tonga apply powdered root for the relief of toothache and headache (Watt & Breyer-Brandwijk 1962). The plant is thought to be poisonous (Watt & Breyer-Brandwijk 1962).

The ***Euphorbia spp*** are synonymous with poison to some communities. The latex of a considerable number of species of *Euphorbia* is used as an ingredient in arrow poison (Watt & Breyer-Brandwijk 1962). In this use its function is twofold, as an adhesive and in order to produce irritation at the site of the arrow wound so as to favour absorption of the poison. In this study species other than *Euphorbia spp* were recorded to be used for arrow poisoning, however, ***Euphorbia tirucalli*** was identified as useful for sticking feathers on arrow shafts. The use of ***Euphorbia nyikae*** for fish poisoning recorded in this study, was also recorded in Tanzania (Watt & Breyer-Brandwijk 1962). The use of ***Euphorbia nyikae*** as candle by *Midzichenda* is shared with the Taita, who use the very slow-burning branches to transport fire (Watt & Breyer-Brandwijk 1962). The Taita also use the species to make birdlime; and for medicinal purposes (as a purgative). Although in this study ***Euphorbia nyikae*** was

recorded as the most used for hedging, in southern Zimbabwe ***Euphorbia tirucalli*** is the common "rubber hedge" (Watt & Breyer-Brandwijk 1962). This is probably because the latex is highly irritant to the skin and so acts as a deterrent to marauders. The veterinary medicinal value of ***Euphorbia tirucalli*** recorded in this study was not common in other communities, instead, the species is used for treating human ailments. In Tanzania it is used as a remedy for impotence and as an emetic to treat snakebite; in India ash obtained by burning the plant and latex is used as a purgative especially in anaemia (Watt & Breyer-Brandwijk 1962); and the Vhavenda use root infusion to treat body pains (Mabogo 1990). According to Watt and Breyer-Brandwijk (1962) in Tanzania ***Euphorbia tirucalli*** is regarded as a mosquito repellent, and is used as an insecticide in India; also the species has been used as a fish poison in Tanzania, India, the Netherlands Indies, Indonesia, Indo-china and the Philippines. In this study other species seemed to have been preferred for fish poisoning to ***Euphorbia tirucalli***. The latex of ***Euphorbia tirucalli*** is highly irritant to the skin and eyes (Hutchings *et al.* 1996), and it contains *resin* (Watt & Breyer-Brandwijk 1962).

A ketone '*euphoron*' which on reduction gives *euphorol* has been isolated from dried latex of *Euphorbia spp* (Watt & Breyer-Brandwijk 1962). Latex of some *Euphorbia spp.* have been studied as possible sources of rubber, and it was observed that the latex contained up to 12.5% of rubber and 50% of resin. *Euphorbia hirta* (from the Philippines) has been reported to contain *hydrocyanic acid* (in Japan), but gave negative antibiotic tests (Watt & Breyer-Brandwijk 1962).

The fruits of ***Flacourtia indica*** were identified to be edible in this study. Although this is shared with other communities (Beentje 1994), the fruit contains no *ascorbic acid* (Watt & Breyer-Brandwijk 1962). In addition to food value, the species is used to build Maasai huts (Beentje 1994). The Lobedu use a root decoction for the relief of body pains; while in Madagascar the bark is used as an antirheumatic, the root ash has been used as a kidney remedy, and the leaf has been used as a gynaecological remedy (Watt & Breyer-Brandwijk 1962). According to Watt and Breyer-Brandwijk (1962) extracts of the plant have given negative antibiotic tests.

The use of ***Flagellaria guineensis*** to treat scrotum infection, recorded in this study, is close to the use of the species by Sanga in Tanzania, who use the berry as a remedy for veneral disease (Watt & Breyer-Brandwijk 1962). The species has additional medicinal uses in other communities, as it is used for treating skin diseases and for persistent leg ulcers; and in the Philippines the whole plant is considered as diuretic and the leaf is used as astringent and in making a hair wash (Watt & Breyer-Brandwijk 1962). Although ***Flagellaria guineensis*** in this study was not identified to have any symbolic use, in Tanzania the stem is used in rainmaking ceremonies (Watt & Breyer-Brandwijk 1962). Another use of the species in Tanzania is crafting, where the stem is used for making fish traps. Spot tests for alkaloids have given positive results (Watt & Breyer-Brandwijk 1962).

The use of ***Flueggea virosa*** roots as a gonorrhoea remedy by the *Midzichenda* is shared with some Indian communities (Watt & Breyer-Brandwijk 1962). The other medicinal uses recorded in this study were not common among other communities. The medicinal use of the species to treat veneral diseases and stomach complaints by *Midzichenda* is shared with other communities in other parts of Africa (Watt & Breyer-Brandwijk 1962; Haerdi 1964; Kokwaro 1976; Herdberg *et al.* 1983). In addition, other medicinal uses have been recorded among other communities. Roots of ***Flueggea virosa*** are used by Nyamwezi and Shambala to treat malaria, while both fruit and root are used as snakebite remedy, and as a remedy for pneumonia (Watt & Breyer-Brandwijk 1962). In addition to medicinal value, the species in India is used as a fish poison (Watt & Breyer-Brandwijk 1962). Magical powers and treat of diseases associated with withchcraft recorded in this study are shared with other African communities (Hutchings *et al.* 1996). Roots and leaves of ***Flueggea virosa*** contains tannin and alkaloids, and gave positive antibiotic tests (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996).

The uses of ***Garcinia livingstonei*** to make a stirring rod for cooking by the *Midzichenda* recorded in this study is similar to observations by Beentje (1994). The food value of the fruits of this species recorded in this study was common among the Vhavenda (Mabogo 1990). The use of the species to make cooking rod by *Midzichenda* was not common among other communities. Other medicinal uses of the species have been recorded in different communities. The Zulu use the bark as a traditional medicine (Cunningham 1988), roots for

aphrodisiacs, and branches are traditionally placed on graves (Pooley 1993). Roots are also used for abdominal pain during pregnancy in Somalia (Hutchings *et al.* 1996) and in East Africa (Kokwaro 1976). The Vhavenda use the species as a contraceptive, and is also used to prevent wars and fights among community members (Mabogo 1990). Extracts of the leaves and flowers showed positive antibiotic activities (Watt & Breyer-Brandwijk 1962), and rootbark showed fungicidal activity against *Cladosporium cucumerinum* (Hutchings *et al.* 1996).

The use of the tuber of ***Gonatopus boivinii*** for food recorded in this study was not common in other communities. The medicinal value of the species has been identified in other communities but for different ailments. The root of ***Gonatopus boivinii*** is used by some East Africa communities (together with the root of *Blepharispermum zanguebaricum*) as an internal remedy for hydrocele; and the Sukuma, in Tanzania, regard the root as poisonous but nevertheless take it as a dropsy remedy (Watt & Breyer-Brandwijk 1962).

The symbolic values of ***Grewia plagiophylla*** practised by Duruma, Giriama and Digo recorded in this study were not common among other communities. However, the use of the species for making domestic tools were shared with other communities in Kenya. According to Beentje (1994) the wood of ***Grewia plagiophylla*** is hard and strong, and is used widely in Kenya for making bows and arrows. The medicinal use of the species by Midzichenda is shared with the Taita in Kenya, who use the root ingredient as a remedy for plague Beentje (1994). In addition to the uses of the species by the Digo recorded in this study, (Beentje 1994) identified an additional use of the species by this ethnic group, which was to employ the root decoction against kidney trouble.

The medicinal uses of ***Harrisonia abyssinica*** by the *Midzichenda* ethnic groups recorded in this study were not shared with other communities. However, the general medicinal importance of the species was identified in other communities. The root of ***Harrisonia abyssinica*** is employed as a remedy for veneral diseases by the Samburu, and against diarrhoea by the Kamba in Kenya (Beentje 1994). In addition to the medicinal uses the fruits of ***Harrisonia abyssinica*** are said to be edible to some Kenyan communities (Beentje 1994).

The use of ***Heteropogon contortus*** for thatching traditional houses among the *Midzichenda* recorded in this study was not common among other communities. The species has medicinal uses, as the Sotho use it to treat rheumatism in the hands (Watt & Breyer-Brandwijk 1962).
The fruits of ***Hoslundia opposita*** are commonly eaten in Kenya (Beentje 1994). Specific medicinal uses by *Midzichenda* recorded in this study were not common among other communities. However, although the species is thought to be poisonous (Watt & Breyer-Brandwijk 1962), its general medicinal values are recognised by different communities. The leaves of ***Hoslundia opposita*** are used for tea by Kipsigis and Maasai in Kenya (Beentje 1994). The Haya use the species for treating gonorrhoea, while the Shambala use it for liver disease, cough, chest pains, fever, hookworm infection, stomach disorders, and mental disturbance; and the Nyamwezi and Shambala use the root for relief of stomach pain, and the leaf as a snakebite remedy (Watt & Breyer-Brandwijk 1962). According to Watt & Breyer-Brandwijk (1962) the Tanzania communities use the species in certain cultural ceremonies.

Kedrostis nana has been noted to produce strong odour (possible similar to that of *Kedrostis heterophylla*) of *carbon bisulphide*. However, the magical and medicinal uses of the species by the Duruma recorded in this study were not recorded for other communities.

Beentje (1994) noted that the fruits of ***Landolphia kirkii*** are eaten by some Kenyan communities, including the *Midzichenda* as recorded in this study. The fruits are also eaten to the Vhavenda (Mabogo 1990). The medicinal value of the species identified by *Midzichenda* is similar to the records in Venda (Mabogo 1990). In addition to the medicinal uses the Vahvenda use the species for magical purposes, i.e. as magical charms to protect against witchcraft (Mabogo 1990). The use of the rubber of ***Landolphia kirkii*** for birdlime, and use of the stem for crafting domestic tools are also shared with Venda (Mabogo 1996). Commercial exploitation of the rubber has bee recorded in East and Central Africa (Watt & Breyer-Brandwijk 1962). The rubber has good elasticity and density, and is of good quality; the raw rubber assayed in Natal had 6.9 – 12.5% resin (Watt & Breyer-Brandwijk 1962).

The use of ***Lannea schweinfurthii*** (*syn. L. stuhlmanii*) for pre-natal treatments by the Digo recorded in this study, is shared with the Swahili who administered leaf infusion of the species to pregnant women to relieve abdominal pain, while leaf poultice are applied to the

abdomen to hasten childbirth (Watt & Breyer-Brandwijk 1962). Other medicinal uses of the species not recorded in the current study were recorded in other communities. The Nyamwezi apply a paste of leaf to sores, boils, carbuncles and abscesses as a dressing; the Swahili use the rootbark against snakebite; and leaf infusions are used as washes for paralysis and polio, and also root decoction is taken for diarrhoea in Zimbabwe (Watt & Breyer-Brandwijk 1962). An unidentified community in Kenya use the bark of the species for making tea, rope and red-brown dye, and use the bark decoction against headache and stomach-ache (Beentje 1994). Symbolic values of the species, although not recorded in the current study, have been recorded among the Vehnda. The Vendah use ***Lannea schweinfurthii*** rootbark decoction to help family members forget a recently passed away relative and other unpleasant events (Watt & Breyer-Brandwijk 1962). Spiritual values of the species have been recorded in northern Zimbabwe, where the tree figures a great deal in spirit worship (Watt & Breyer-Brandwijk 1962). The value of the wood is recognised in Tanzania (Watt & Breyer-Brandwijk 1962) and in Kenya (Beentje 1994) where its used as a source of timber, and for making stools and grain pestles. In Embu the blacksmiths used to prefer charcoal made from ***Lannea schweinfurthii*** for smelting iron (Beentje1994).

Although the fruits of ***Lantana camara*** were recorded to be edible among the *Midzichenda* in the current study, in Australia the plant is reported to have been toxic to children who were made ill by eating the fruits (Watt & Breyer-Brandwijk 1962). The leaves have been identified to be toxic to livestock in Australia (Watt & Breyer-Brandwijk 1962) as well as in Kenya (Beentje 1994). The specific medicinal uses recorded in this study were not common among other communities, but general medicinal values of the species have been recorded in West Africa where the leaf is used to treat a cough and colds (Watt & Breyer-Brandwijk 1962). Although in this study there were no ornamental values recorded for *Lantana camara*, the species is grown as an ornamental in South Africa (Watt & Breyer-Brandwijk 1962) although it is now a very invasive weed. The plant leaf contains an icerogenic principle *lantanin* (re-named *lantadene A*) and an aromatic *volatile oil*, and has shown antibiotic activity against certain bacteria; the bark of the root contains *tannin*; the bark of the stem contains *lantanin* and *resin*; and the flower contains *anthocyanin* and *carotene* (Watt & Breyer-Brandwijk 1962).

The use of ***Lonchocarpus bussei*** for pre-natal treatments by *Midzichenda*, recorded in this study, was not shared with other communities, but a post-natal use was recorded in other communities in Tanzania, where root the of the species is used to improve lactation in breast-feeding mothers (Watt & Breyer-Brandwijk 1962). The use of ***Lonchocarpus bussei*** for treatment of veneral diseases by *Midzichenda*, recorded in this study, is also shared with some Tanzanian communities (Watt & Breyer-Brandwijk 1962).

The medicinal values of ***Manilkara mochisa*** recorded in this study, are shared with Zulu (Pooley 1993), although that author only identified the species as being used by Zulu as a traditional medicine without details of the ailments targeted.

The use of ***Markhamia hildebrandtii*** for building is shared with other communities in Kenya (Beentje 1994) and in Tanzania (Watt & Breyer-Brandwijk 1962). The specific medicinal values of ***Markhamia hildebrandtii*** recorded in this study are not common among other communities, however, medicinal use for the species has been recorded in Tanzania where the bark is chewed for relief of toothache (Watt & Breyer-Brandwijk 1962). The use of the species for making domestic tool recorded in this study is shared with other communities in Tanzania (Watt & Breyer-Brandwijk 1962) and in Kenya (Beentje 1994).

The use of ***Maytenus mossambicensis*** for magical purposes by the *Midzichenda*, recorded in this study, is shared with the Zulu (Hutchings *et al.* 1996). However, the specific use of ***Maytenus undata*** for medcinal use and for making birdlime by *Midzichenda*, was not common in other communities. The Zulu use the species for magical purposes (Hutchings *et al.* 1996). The Vhavenda use fresh branches of the species to prevent beer from spilling when carried in a clay pot; and is also considered a good firewood (Mabogo 1990).

The use of ***Microcoelia exilis*** to make a love charm by among the *Midzichenda*, as recorded in this study, is shared with the Zulu who use the species for same (Hutchings *et al.* 1996).

The use of ***Microgramma lycopodioides*** by the Duruma to make magical protective charm is, at a general perspective shared with the Zulu who use the species as a protection against lice

traditionally believed to be inflicted through sorcery (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996).

The ***Milicia excelsa*** quality timber is widely used in Kenya (Beentje 1994). There were no medicinal values identified for the species in this study, but in other communities the species is known to be of medicinal importance. A leaf decoction of ***Milicia excelsa*** is used as an antifebrile by the Osande; in Central Africa leaf extract is given to infants for nervousness; and decoction of bark is used as a remedy for splenic pain in Congo (Watt & Breyer-Brandwijk 1962). Additional uses in other communities include the bark used for making charcoal in Tanzania and the fruit is used for preparation of a local wine by the Osande (Watt & Breyer-Brandwijk 1962). A slightly fungistatic action and aromatic substance, *phenolic resin*, has been isolated from the wood, and other substances from the wood include *chlorophoric acid* and *chlorophol* (Watt & Breyer-Brandwijk 1962).

The spiritual use of ***Ochna mossambicensis*** among the *Midzichenda*, recorded in this study – was not shared with other communities. Other uses were recorded in other communities. An unidentified community in Kenya uses ***Ochna mossambicensis*** for stomach-ache (Beentje 1994). Nyanja boys take the root decoction of the species to induce courage especially when meeting girls; and the Luvale use the oil from the fruit as a cosmetic (Watt & Breyer-Brandwijk 1962).

The use of ***Opuntia vulgaris*** as a live fence by the *Mizdzichenda*, recorded in this study, was not recorded by the other authors although it does seem to becommon South Africa. Although there were no medicinal uses recorded for the species in the current study, in other communities the species has medicinal values. The Xhosa apply fruit juice to treat warts, and use a heated leaf as a poultice to relieve pain and to draw out thorns; and in West Indies and Southern Europe the leaf is applied externally for the relief of gout and rheumatism, and for softening callouses (Watt & Breyer-Brandwijk 1962). In addition to medicinal uses, the species also is also used as a pesticide. In Algeria chopped leaves are put in water and the resulting mixture is used in mosquito control without deleterious effect upon fish (Watt & Breyer-Brandwijk 1962). The fresh plant contains up to 0.7% *calcium pectate* (which has a

marked antihaemorrhagic action) and *Pectin;* the flower contains alkaloids and up to 5.9% of a *flavonoside* which is mildly toxic and reduces permeability of blood capillaries.

The magical uses of ***Ormocarpum kirkii*** recorded in this study were not common among other communities. The species is used for medicinal value, but for different ailments to that recorded in the current study. According to Beentje (1994) the Boni (and the Digo) use crushed leaves of ***Ormocarpum kirkii*** to treat headache.

The use of ***Oxygonum sinuatum*** as a vegetable by among the *Midzichenda* is shared with Chagga (Watt & Breyer-Brandwijk 1962). In addition to medicinal use the Chagga use the leaves of this species for cough remedy and to treat bronchial problems (Watt & Breyer-Brandwijk 1962).

The specific uses of ***Ozoroa obovata*** for medicinal, crafting and magical purposes by the *Midzichenda* were not common among other communities. However, different medicinal uses of the species have been recorded in the other communities. The Zulu use the roots of ***Ozoroa obovata*** in their traditional medicines, and for dysentery (Hutchings *et al.* 1996) as do some some communities in East Africa (Kokwaro 1976).

The use of ***Pandanus rabaiensis*** to make a protective charm by the Duruma, recorded in the current study, is closely shared with the communities in Tanzania and Zanzibar, who use flower (not the roots as in the former) of ***Pandanus sp.*** (Watt & Breyer-Brandwijk 1962). According to Beentje (1994) the fruit is edible to some communities in Kenya.

The use of ***Panicum maximum*** for traditional thatching, recorded in this study, was not common among other communities. However, the use of the species for making brooms by the *Midzichenda* is shared with communities in Uganda (Watt & Breyer-Brandwijk 1962). In addition, the Ugandan communities use the species in tribal healing and rainmaking ceremonies (Watt & Breyer-Brandwijk 1962).

The specific medicinal uses of ***Premna chrysoclada*** and the magical uses by the *Midzichenda*, recorded in this study, were not common among other communities. However,

the species is important for other medicinal uses among other communities. The Swahili use the leaf as a remedy for ulceration, and for relief of inflammation on the penis (Watt & Breyer-Brandwijk 1962). An unidentified Kenyan community use the species roots to treat dysentery and kidney problems (Beentje 1994). In Kenya the species is also used for making bows (Beentje 1994). The leaf contains a glucoside *vitexine* (Watt & Breyer-Brandwijk 1962).

The symbolic use of the oily seed of ***Ricinus communis*** as a protective charm cultural ceremonies and against snakebites by *Midzichenda*, recorded in this study, was not common among other communities. However, the Vhavenda use the roots for protective charm in the community (Mabogo 1990). While in this study the root of this species was identified to be used in treating boils, the Sotho apply powdered roasted seeds to treat sores and boils in children; and the leaf is commonly used by southern Africa communities as a poultice for boil (Watt & Breyer-Brandwijk 1962). Additional medicinal uses of ***Ricinus communis*** have also been recorded among other communities. A leaf infusion of this species is used for stomach-ache by the Zulu; and the root used for toothache by the Zulu and the Chewa; root is a Chagga remedy for abdominal pains and diarrhoea (Watt & Breyer-Brandwijk 1962). The Vhavenda use the species to treat toothache and earache, and for polishing and softening leather clothes worn by women (Mabogo 1990). The Kikuyu in Kenya use root decoction of ***Ricinus communis*** to help drive out the afterbirth (Beentje 1994). The bark in southern Zimbabwe and smashed leaves in most parts of southern Africa are commonly used as a dressing for wounds and sores; in these communities the leaf is applied on the head to relieve headache and the pounded leaf cooked in oil, is rubbed on rheumatic parts (Watt & Breyer-Brandwijk 1962). In India the root and leaf of ***Ricinus communis*** are regarded as particularly good in treatment of rheumatism and certain skin disorders, and the dried root of the species used as a febrifuge and in treatment of jaundice and nervous disorders (Watt & Breyer-Brandwijk 1962). The species has veterinary medicinal uses, as powdered seeds are placed on the tongue of a calf, which refuses to suck, the result being purgation (Watt & Breyer-Brandwijk 1962). Death from eating seeds and poisoning from seed husk has been reported from Australia (Watt & Breyer-Brandwijk 1962). According to Watt and Breyer-Brandwijk (1962) the seed is a source of castor oil and toxalbumin *ricin* and a toxic crystalline nitrogenous compound, *ricinine* (also isolated from the leaf). In addition the leaf contains *riboflavin, nicotinic acid, uric acid,* and *glutamine* (Watt & Breyer-Brandwijk 1962).

The use of leaf fibre of ***Sanseviera kirkii*** by the *Midzichenda*, recorded in this study, is parallel to the use by local Africans in the Ngamiland, who use the leaf fibre from the species to make nets (Watt & Breyer-Brandwijk 1962). The magical value of the ***Sanseviera kirkii*** root recorded in this study is not common among other community. The species, however, has medicinal use among the Nyamwezi, as they apply powdered root on to a wound (Watt & Breyer-Brandwijk 1962).

The use of ***Schlechterina mitostemmatoides*** as a tying material by the *Midzichenda* was unknown to other communities. However, the use of the species for protective charm by the *Midzichenda* is shared with the Zulu (Hutchings *et al.* 1996).

The fruits ***Sclerocarya birrea*** (*syn. S. caffra*) are commonly eaten in Kenyan (Beentje 1994) and other African communities (Watt & Breyer-Brandwijk 1962). In addition to food value, the fruit is used for brewing beer in South Africa, and for making fermented beverage in Mozambique; fruit juice is used in traditional religious ceremonies by the Shangani and used as insecticides against ticks by the Zulu (Watt & Breyer-Brandwijk 1962). In addition, the Thonga eat cooked seeds; the Pedi use the ground-up kernel to make porridge, and use the embryo as a condiment and the leaf as a relish; and the Zulu women use kernel oil to preserve skin shirts (*sindwaba*) and keep them dry (Watt & Breyer-Brandwijk 1962). The medicinal use of the bark by the *Midzichenda*, recorded in this study, is shared with the Pokot in Kenya (Beentje 1994), and some South African cultures (Watt & Breyer-Brandwijk 1962). However, different ailments are targeted by the Pokot (dysentery, bad liver, and rheumatism) and by the South Africans (dysenteries, diarrhoeas and malaria). Some communities in South Africa believe that eating of fruits causes malaria fever (Watt & Breyer-Brandwijk 1962). In the current study the *Midzichenda* identified the species symbolic values and use in cultural cleansing. These uses are shared with the Zulu and Thonga (South Africa) who use the bark decoction in cleansing rituals before marriage (Watt & Breyer-Brandwijk 1962). Other symbolic values include the use of the branches of ***Sclerocarya birrea*** in the funeral rites by the Thonga; regulation of the sex of a child using powdered bark, and making divine-bowls and drums from the wood by Venda; and the use fruit nut by Shangani diviners (Watt & Breyer-Brandwijk 1962). The value of the ***Sclerocarya birrea*** wood, identified in this study, is shared with many southern African communities, who make dishes, stamping mortars,

drums, toys and curios (Watt & Breyer-Brandwijk 1962) these include the Pokot in Kenya who use the wood for making bowls (Beentje 1994).

Sclerocarya birrea bark has been confirmed to be astringent and may be of value in diarrhoeas but unlikely to be important for malaria; the bark also contain tannin which can vary (3.5 – 20.5%), and trace alkaloids (Watt & Breyer-Brandwijk 1962). The fruit pulp contain *citric* and *malic* acids, and 2 mg per millilitre of vitamin C, which is about four times that in the orange juice (Watt & Breyer-Brandwijk 1962). According to Watt and Breyer-Brandwijk (1962) the fruit nut contains 53.5 – 60% of non-drying oil, 28% protein and some iodine; and the bark exudate is rich in tannin.

The edible fruits of ***Sideroxylon inerme*** recorded in this study are also used by the Swahili in Kenya (Beentje 1994). The use of the species to treat coughs by the *Midzichenda,* recorded in the current study, is shared with communities in eastern Tanzania (Chhabra *et al.* 1993). Use of the species for menstrual disorders recorded in this study was not common among other communities. However, other medicinal and magical uses have been recorded in different communities. The Zulu administer rootbark of the species as an enema (Gerstner 1941), grounded and roasted roots rubbed into incisions on a broken limb (Hutchings *et al.* 1996), and bark used in traditional medicine (Cunningham 1988). A psycho-medicinal use was recorded among the Zulu, who take an infusion of the bark to dispel bad dreams (Watt & Breyer-Brandwijk 1962). Although no records of veterinary medicinal values for the species were made in this study, the Zulu and Xhosa (South Africa) use the bark to treat livestock diseases (Watt & Breyer-Brandwijk 1962). The use of the timber of ***Sideroxylon inerme*** recorded in this study, is shared with the South African communities who use the timber for building boats and bridges, and for making ploughs and domestic implements (Watt & Breyer-Brandwijk 1962). The latex from leaves, bark and young wood of ***Sideroxylon inerme*** is acrid (Watt & Breyer-Brandwijk 1962), and the bark contains cinnamic acid, kaempferol and leucanthocyanins (Hegnauer 1973).

The use of ***Solanum incanum*** root to treat abdominal ailments by the *Midzichenda,* recorded in the current study, is shared with some communities in Tanzanian and in southern Africa (Watt & Breyer-Brandwijk 1962). The species has other different medicinal uses in other

communities. ***Solanum incanum*** fruit pulp is applied to warts, bleeding wounds and toothaches, and the fruit juice used to clot milk by the Boran (Beentje 1994). In Tanzania ***Solanum incanum*** is used for pneumonia, ringworm, liver diseases, veneral diseases, sores and wounds (Khan *et al.* 1980). The species is used for toothache by the Pedi; for sore throat by the Sotho; and for ringworm by the Zulu (Watt & Breyer-Brandwijk 1962); and for sores in Botswana (Hedberg & Staugard 1989). The whites in South Africa use the species for dandruff (Watt & Breyer-Brandwijk 1962). Some communities in Zimbabwe use the species for respiratory problems, veneral diseases, gastro-intestinal complaints and toothache (Gelfand *et al.* 1985).

The fruit of ***Solanum incanum*** is considered poisonous (Hutchings *et al.* 1996), and fruit poultices and infusions are believed to be effective in removing external benign tumors (Watt & Breyer-Brandwijk 1962). Roots are also regarded poisonous in Nigeria and are used in arrow poisons (Hutchings *et al.* 1996). The species contain *alkaloids* (Hsu & Tien 1974) and *sapogenins* (Segal *et al.* 1977); and extracts fro the plant have antibacterial activity against *Staphylococcus aureus*, but not against *Escherichia coli* (Hutchings *et al.* 1996).

The use of ***Solanum nigrum*** as a vegetable by the *Midzichenda*, recorded in this study, is shared with Sotho, Xhosa, Ndebele, Swati and Pedi; communities in Malawi, Bourbon Island, Hawaii and Mauritius (Watt & Breyer-Brandwijk 1962); and other communities in East Africa (Kokwaro 1976). In addition to use of leaves, the ripe fruit is eaten by children in Australia, and it makes delightful jam, however, unripe fruit has been recorded to be poisonous (Watt & Breyer-Brandwijk 1962). Although in this study there were no medicinal uses recorded for the species, in other communities medicinal values have been recorded. In South African the European community uses the species as a remedy for convulsions; the Zulu use an infusion of the species to treat abdominal upsets in infant (Watt & Breyer-Brandwijk 1962) and for wounds and ulcers (Roberts 1990). The Sotho rub burnt and ground root into scarifications for the relief of lumbago (Jacot Guillarmod 1971). The Xhosa use the paste of unripe fruit as an application to ringworm (Smith 1895). In Zimbabwe the plant is used as a remedy for malaria, black-water fever and dysenteries (Watt & Breyer-Brandwijk 1962). The Vhavenda use the species for malaria and dysentery (Mabogo 1990). In Mauritius a poultice of the leaf is used for the relief of abdominal pain and inflammation of the urinary

bladder (Watt & Breyer-Brandwijk 1962). In Israel leaves of the species are used for wounds, swellings, burns, haemorrhoids, and as sedative massages for various pains and aches, while infusion is taken for heart and liver ailments (Dafni & Yaniv 1994). In Madagascar, leaves of the species are used for asthma, coughs, scabies and ulcers (Jenkins 1987). In India fruits of the species are used for fevers, diarrhoea, and eye diseases, while leaves are used for veneral diseases (Chopra *et al.* 1956).

The fresh young leaves of ***Solanum nigrum*** contain 1mg/100gm of *ascorbic acid* and *carotene*, while the fruit contains *solasodine*, *solamargine* and *alkaloids* (Watt & Breyer-Brandwijk 1962). Fruits are reported to be toxic (Hutchings *et al.* 1996), an effect caused by the presence of *solanine* and a mydriatic *alkaloid* (Watt & Breyer-Brandwijk 1962). Although these substances are also known to be present in leaf and ripe fruit, the amounts are in low concentrations so that these organs can be consumed in considerable quantities without ill effect (Watt & Breyer-Brandwijk 1962). Ascorbic acid and carotene have also been recorded from leaves and seeds (Watt & Breyer-Brandwijk 1962).

Although in the current study ***Sporobolus fimbriatus*** was not identified to have any ethnobotanical use, fruits of this species are used by Sotho in times of famine to make porridge (Watt & Breyer-Brandwijk 1962). According to Watt and Breyer-Brandwijk (1962) the wilted plant materials of ***Sporobolus fimbriatus*** yielded *hydrocyanic acid*.

The symbolic and spiritual uses of ***Sterculia appendiculata*** by the *Midzichenda*, recorded in this study, is not common with other communities. However, the use of the species to treat stomach problems by *Midzichenda* is shared with Tanzania communities (Watt & Breyer-Brandwijk 1962). In this comparison, however, the *Midzichenda* use the roots, while in Tanzania the leaves are used.

The use of the bark of ***Sterculia rhynchocarpa*** as a tying material by the *Midzichenda* recorded in this study, was shared with Tanzanian communities (Watt & Breyer-Brandwijk 1962). Also the use of the species to treat stomach troubles was common with the Tanzanian communities, with a difference that the *Midzichenda* use the leaves while in Tanzania the bark decoction is used (Watt & Breyer-Brandwijk 1962). The other medicinal uses and the

symbolic use of the species by *Midzichenda*, recorded in this study, were not common among other communities.

The recognition of ***Strophanthus kombe*** being poisonous by the *Midzichenda*, recorded in this study, is shared by other communities, who make use of the species as arrow poison (Watt & Breyer-Brandwijk 1962). These include communities in Mozambique, Malawi, Tanzania and northern Zimbabwe. Although the *Midzichenda* use the species for symbolic values, unidentified communities in East Africa use the root of the species as a cure for bronchitis (Watt & Breyer-Brandwijk 1962). The seeds of ***Strophanthus kombe*** contain an amorphous mixture of glucosides (*k-strophanthin*), glycosides *cymarin* and *cymarol*, *saponin* and alkaloid *trigonelline*. (the *strophanthin* on hydrolysis yields *strophanthidin* which has no pharmacological action); but the species has given negative results to antibacterial tests (Watt & Breyer-Brandwijk 1962).

While the *Midzichenda* use ***Strychnos spinosa*** fruit to induce labour pains, the Vhavenda use the fruit infusion after childbirth to stop post-parturition pain (Mabogo 1990), and in Zimbabwe rootbark is taken to prevent miscarriage (Watt & Breyer-Brandwijk 1962). The Vhavenda, like the *Midzichenda*, consider the fruit as edible (Mabogo 1990). The use of roots of the species against jiggers (skin parasites) by the *Midzichenda* is shared with some communities in Tanzania (Watt & Breyer-Brandwijk 1962). Application of ***Strychnos spinosa*** for abdominal ailments by *Midzichenda* is shared with communities in Zimbabwe (Gelfand *et al.* 1985) and in West Africa (Oliver-Beever 1986). Different other medicinal uses, not recorded in this study, have been recorded in other communities. The Zulu use the species for snakebite, the Tonga use the species for dysentery and in burial rites (Watt & Breyer-Brandwijk 1962). In Zimbabwe roots of the species are used for infertility, veneral diseases and sore throats (Gelfand *et al.* 1985), and in West Africa roots are used for diarrhoea (Oliver-Beever 1986). The *Midzichenda* use of the fruit for its food value is common among communities in Central Africa (Bisset & Leeuwenberg 1968). The species is reported to have low toxicity (Verpoorte & Bohlin 1976), and yields *strychnine* and *brucine* (Watt & Breyer-Brandwijk 1962). The leaves and stembark contain *alkaloids* (Ohiri 1985), one of which has been proved to have convulsive properties (Watt & Breyer-Brandwijk 1962). Extracts from

leaves, branches, stem, stembark and rootbark have very weak muscle-relaxant effects or no effects at all (Watt & Breyer-Brandwijk 1962).

The specific medicinal uses of ***Suregada zanzibariensis*** by the *Midzichenda*, recorded in this study, were not common with other communities. However, other medicinal uses are recognised by some communities in Tanzania and South Africa (Watt & Breyer-Brandwijk 1962). In Tanzania the leaves are used for snakebite and abdominal pains, and in South Africa the Zulu use the species for traditional medicines (Watt & Breyer-Brandwijk 1962).

The use of ***Synadenium pereskiifolium*** (*S. glaucescens*) for fish poisoning by *Midzichenda*, recorded in this study, is shared with other Kenyan communities (Beentje 1994). The species, however, has medicinal uses (as a purgative) in Tanzania (Watt & Breyer-Brandwijk 1962). The use of ***Synadenium pereskiifolium*** for pesticides was not mentioned for other communities.

The use of ***Synaptolepis kirkii*** as a dewormer by among the *Midzichenda*, is close to the use of the species for stomach complaints and costipation by communities in eastern Tanzania (Chhabra *et al.* 1993). The use of leaves of this species for bandage recorded in this study was not common in other communities. However, other medicinal uses of the species have been recorded. The Zulu use ***Synaptolepis kirkii*** for emetics (Watt & Breyer-Brandwijk 1962), and some communities in East Africa use the species for snakebite (Kokwaro 1976).

Although among the *Midzichenda* there is a belief that ***Tabernaemontana elegans*** is a poisonous species, the fruits are eible to the Vhavenda (Mabogo 1990). The species is also considered by the Vhavenda to be of medicinal importance. Other uses of the species by the Vhavenda, not recorded in this study, include use of latex for birdlime, and use of latex for curdling milk and making it taste sour (Mabogo 1990).

Although in the current study ***Talinum caffrum*** was only identified as being used for its food value, in other communities it has medicinal value. The Zulu in South Africa use root infusion for nervousness and stomachache, and is also administered as emetics for chest complaints and as enemas for abdominal disorders (Gerstner 1941; Watt & Breyer-

Brandwijk 1962). The species is also used by the Zulu for warding off thunder and lightning (Hutchings *et al.* 1996).

The use of ***Tamarindus indica*** fruits for foods and as a spice by the *Midzichenda*, recorded in this study, is shared with many other communities. The fruit is edible and used for flavouring curries by communities in Kenya (Beentje 1994), in Indian, Indonesian and tropical America (Watt & Breyer-Brandwijk 1962). Fruit pulp is used for making a fermented drink which is used to facilitate digestion, for treatment of dysenteries and malaria (Watt & Breyer-Brandwijk 1962). The *Midzichenda* share the use of the leaves of ***Tamarindus indica*** to treat stomach disorders and as an anthelmintic with communities in Tanzania and Madagascar (Watt & Breyer-Brandwijk 1962). For ***Tamarindus indica*** there are many medicinal uses other than those recognised by the *Midzichenda*. The communities in Tanzania use leaf poultice to treat snakebite wounds, and in West Africa a powder of dried leaf is used on wounds (Watt & Breyer-Brandwijk 1962). The bark is used as an antisthmatic in Mauritius and Madagascar, as remedy for gonorrhoea and as a lotion for wounds and ulcers in Madagascar (Watt & Breyer-Brandwijk 1962). In Nigeria the root is a component of a leprosy remedy, and ash from burnt wood is used against urinary ailments and gonorrhoea (Watt & Breyer-Brandwijk 1962). In addition to food value and medicinal uses the species has other uses in different communities. In India the leaf is used in dyeing; while in Java ink is made from burning bark; and overripe fruit is used for polishing copper and brass, and the fruit pulp for dying in Tanzania (Watt & Breyer-Brandwijk 1962). The wood is commonly used for timber and for charcoal burning (Watt & Breyer-Brandwijk 1962). Various parts of the plant have given positive antibiotic results (which justifies the above medicinal uses) and the fruit pulp contains *tartaric acid* (which accounts for most of its purgative action), *acetic, citric, malic and succinic acids, sugars* and *pectin* (Watt & Breyer-Brandwijk 1962).

The symbolic use of ***Terminalia spinosa*** for *vigango* by the Giriama, recorded in this study, was not common among other communities. However, the preference in use of the species for building poles was shared with the Turkana in Kenya (Beentje 1994). In addition to building, the Turkana use the wood of the species for dhow keels and for making stools (Beentje 1994). According to Beentje (1994) ***Terminalia spinosa*** is a preferred wood due to

its durability and termite resistance. The use of the species for making magical protective charm by among the *Midzichenda* was also shared with the Turkana (Beentje 1994).

The use of ***Uvaria acuminata*** was not common in other communities, however, the species has shown lymphocytic inhibitory action (Cole *et al.* 1976). According to Hutchings *et al.* (1996) anthelmintic and antimicrobial activities shown by isolated actogenins (from *Uvaria spp.*) were found to be comparable with the standard drugs. The use of ***Uvaria lucida*** recorded in this study, is shared with the Zulu who use stem of the species for traditional medicines (Cunningham 1988). The use of ***Uvaria lucida*** for baths in treatments of spiritual ailments by the *Midzichenda*, is closely related to the use of the species in Tanzania, where some communities bath patients with leaf infusion to treat mental disease (Hutchings *et al.* 1996). Other medicinal uses of ***Uvaria lucida*** in Tanzania are treatments of stomach pain and constipation by use of root decoction (Hedberg *et al.* 1982), and use of root and leaf decoctions for hook-worm (Haerdi 1964).

The use of the fruit of ***Vangueria infausta*** for its food value by *Midzichenda*, is shared with many other African communities, e.g. the Swati in South Africa dry and store the fruits and used during food shortage (Watt & Breyer-Brandwijk 1962). The use of the species for pregnancy problems by the *Midzchenda* was not common among other communities, related problems are targeted using the species in other communities. ***Vangueria infausta*** is used to enhance fertility in women by the Vhavenda (Mabogo 1990); for menstrual ailments in southern Africa (Watt & Breyer-Brandwijk 1962); and to treat vaginal discharges in Zimbabwe (Gelfand *et al.* 1985). Other medicinal uses have also been recorded in other communities. The Zulu use the species for malaria and chest complaints (Pooley 1993); the Vhavenda use sticks of the species for protective charms (Mabogo 1990); and in Mozambique the species is used for dental pain (Watt & Breyer-Brandwijk 1962). In Zimbabwe the Lamba use the roots of the species for chest complaints, coughs, pneumonia and malaria, and leaves for swollen legs (Gelfand *et al.* 1985). In Botswana root decoction is taken for a strong heart (Hedberg & Staugard 1989).

The belief by the *Midzichenda* that ***Vangueria infausta*** is a species of bad omen is shared with the Tlhaping who regard the species as bewitched and unlucky, and therefore avoided as

firewood (Watt & Breyer-Brandwijk 1962). The commonly eaten fruit has 3.7% *vitamin* C; the leaf contains *sterols*, and gave negative tests to antibacterial tests (Watt & Breyer-Brandwijk 1962). *Sterols* have been indicated in leaves, but negative tests were obtained for *flavonols*, *alkaloids* and *tannins* (Watt & Breyer-Brandwijk 1962). Negative haemolysis and antibacterial tests were also obtained (Hutchings *et al.* 1996).

The symbolic use of ***Vernonia hildebrandtii*** by the *Midzichenda*, recorded in the current study, is not common among other communities. However, other uses of the species have been identified. The leaves of the species are used by some communities in East Africa as a remedy for diarrhoea (Watt & Breyer-Brandwijk 1962), and unidentified communities in Kenya eat parts of the species raw to treat stomach troubles (Beentje 1994). Some southern African communities incorporate the species as an ingredient in arrow poison (Watt & Breyer-Brandwijk 1962). The toxic effects of ***Vernonia hildebrandtii*** is due to the presence of an alkaloid (Watt & Breyer-Brandwijk 1962) the consumptive medicinal uses by *Midzichenda* and other communities, therefore, are likely to be risky.

The medicinal uses of ***Vitex mombassae*** by the *Midzichenda*, recorded in this study, were not common among other communities, instead, other use of the species are recognised in other communities. In Tanzania the leaf decoction of ***Vitex mombassae*** is used for strengthening and flavouring tobacco; in Zimbabwe boys apply the sap of the species onto the penis to make the organ grow bigger (Watt & Breyer-Brandwijk 1962). Despite the above use in Zimbabwe, the sap of ***Vitex mombassae*** is known to be caustic and may cause severe swelling and pain (Watt & Breyer-Brandwijk 1962).

The fruit of ***Vitex payos*** is eaten by the *Midzichenda*, as recorded in the current study, is also edible to African communities in Zimbabwe; but the fruit contains no *vitamin C* (Watt & Breyer-Brandwijk 1962).

The fruits of ***Ximenia americana*** are eaten by the *Midzichenda*, and are also edible to the Vahvenda (Mabogo 1990). While the *Midzichenda* use the fruit of ***Ximenia americana*** only for its food value, in other communities multiple uses for the fruit and the seed have been recorded. In South Africa ripe fruit of ***Ximenia americana*** is used for making beer, and the

seed oil is used for softening leather and as a cosmetic; in Angola the seed oil is used in festival food preparations; applied as a body ointment and as a hair oil (Watt & Breyer-Brandwijk 1962). In unspecified parts of Africa the crushed fruit rind and the bark of the plant are used to treat sores in domestic animals; and in Zimbabwe root or fruit decoction is used to treat diarrhoea in livestock (Hutchings *et al.* 1996). In West Africa the communities share the use of the root of ***Ximenia americana*** with the *Midzichenda* in the treatment of veneral diseases (Hutchings *et al.* 1996). Other medicinal uses, not recorded in this study, have been recorded among different communities. The Vahvenda use the species for dysentery in children; for diarroea in adults, and for magical charm that is used to attract people who do not want to go back to their homes for one reason or another (Mabogo 1990). In Tanzania root is used as a remedy for fevers and diarrhoea; in West Africa bark and root are used as a dressing for cancer and ringworm; in Nigeria the root is used for treating sleeping sickness; in Botswana and Guinea-Bissau, the roots are used to treat schitosomiasis (Hutchings *et al.* 1996). In Angola the roots are uses in soaps for scabies (Hutchings *et al.* 1996). In Central Africa leaf decoction is used for toothache, cough, fever and wounds (Watt & Breyer-Brandwijk 1962).

The leaf contains *hydrocyanic acid,* which is believed to be toxic especially to livestock (Watt & Breyer-Brandwijk 1962). The bark contains *tannin*, and bark extracts show hypotensive and antiviral activity, but antibacterial tests have been negative (Hedberg and Staugard 1989). Although the fruit pulp is edible to many communities, the kernel is thought to be toxic (Watt & Breyer-Brandwijk 1962; Hutchings *et al.* 1996), due to presence of *hydrocyanic acid* (Watt & Breyer-Brandwijk 1962). In New Caledonia, the fruit is reported to render women sterile (Hedberg and Staugard 1989). The seeds contain 63.9% fixed oil (Hutchings *et al.* 1996).

The use of ***Zanthoxylum chalybeum*** *(syn. Fagara chalybea)* as remedy for swellings and general body pains by the *Midzichenda*, recorded in this study, are shared with the Nyamwezi in Tanzania (Watt & Breyer-Brandwijk 1962). The species is used as a remedy for bilharzia by the Maasai in Kenya (Watt & Breyer-Brandwijk 1962), is parallel to the use by *Midzichenda* who use the species to treat veneral diseases. There were no records of other communities using the species for making tea as recorded in this study. However, in other communities the species is used for purposes not recorded in this study. The Nyamwezi use

twigs of ***Zanthoxylum chalybeum*** for toothbrushes, and the Maasai give their babies a piece of bark to chew for prevention against fever (Watt & Breyer-Brandwijk 1962). The Pokot use a decoction of the bark against malaria and sore throat (Beentje 1994). The Samburu use a bark infusion as medicine to treat sick camels (Beentje 1994). The leaf of ***Zanthoxylum chalybeum*** contains a *volatile oil* i.e. *methylnonylketone* (Watt & Breyer-Brandwijk 1962).

The use of the fruit of ***Ziziphus mucronata*** for its food value, recorded in this study, is common among other Kenyan (Beentje 1994) and West African (Watt & Breyer-Brandwijk 1962) communities. In West Africa, the fruit is used as a coffee substitute (Watt & Breyer-Brandwijk 1962). The use of the species for body swellings among the *Midzichenda*, recorded in the current study, was shared with Xhosa in South Africa (Hutchings *et al.* 1996). The pre-natal medicinal use of ***Ziziphus mucronata*** was not common among other communities, however, other medicinal uses of the species have been recorded by different communities. The Zulu use the leaf and bark of ***Ziziphus mucronata*** for chronic coughs and chest problems, and leaf poultice is applied on boils and other septic swellings of the skin (Watt & Breyer-Brandwijk 1962). Roots are used for toothache, and branches of the species are used in burial rites of chiefs (Hutchings *et al.* 1996). The Vahvenda use roots for infertility, and roots and leaves are used for body pains (Mabogo 1990). Powdered bark is used for pain of any sort by the southern African communities (Watt & Breyer-Brandwijk 1962), while bark decoction is used for chest complaints, leaf poultice for boils, and root infusion for dysentery (Hutchings *et al.* 1996). Thlaping and Tonga use the root of ***Ziziphus mucronata*** for dysenteries, powdered bark of the root is used against body pain, and vapour from leaf decoction is inhaled for measles (Watt & Breyer-Brandwijk 1962). In East Africa some communities use the roots of this species to treat snakebite, and bark decoction for stomach ailments (Kokwaro 1976). In Botswana the root decoction is used for pain and delayed or irregular menstruation (Hedberg & Staugard 1989). In Angola the species is used for bloody diarrhoea and urogenital complaint (Bossard 1993). In West Africa leaves, fruits and stems are used for colds and diarrhoea (Dalziel 1937). In addition to medicinal uses the species has symbolic use among the Swazi, who believe that ***Ziziphus mucronata*** has properties of warding off lightning, and use the thorny branches in burial rites (Watt & Breyer-Brandwijk 1962). Flowers are used for fish poisoning in Angola (Bossard 1993).

Despite the records of fruits of ***Ziziphus mucronata*** being edible, it has been reported that these fruits are toxic (Hutchings *et al.* 1996). The leaves and the bark have alkaloids (Tschesche *et al.* 1974), the bark contain tannin (Watt & Breyer-Brandwijk 1962), and plant extracts show antifungal activity against *Candida albicans* (Gundidza 1986).

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Appendix VII: Plant List of species recorded in *kaya* Mtswakara (species arranged in alphabetic order of Families)

ACANTHACEAE

Asystasia gangetica (L.)T.Anders. s.l.

Barleria submollis Lindau

Blepharis maderaspatensis (L.)Roth

Crossandra pungens Lindau

Elytraria minor Dokosi

Hypoestes forskaolei (Vahl)R.Br.

Monethecium aristatum T.Anders.

Pseuderanthemum hildebrandtii Lindau

Rhinacanthus gracilis Klotzsch

Ruellia patula Jacq.

Sclerochiton vogelii (Nees)T.Anders. ssp. *holstii* (Lindau)Napper

Thunbergia kirkii Hook.f.

Thunbergia schimbensis S.Moore

Thunbergia sp.

ACTINOPTERIDACEAE

Actiniopteris radiata (Sw.)Link

ADIATACEAE

Adiantum comorense (Tard.)Verdc. ined

Pellaea doniana Hook.

Pellaea involuta (Sw.)Bak.

AMARANTHACEAE

Achyranthes aspera L.

Celosia schweinfurthiana Schinz

Psilotrichum scleranthum Thwaites

Pupalia lappacea (L.)A.Juss.

ANACARDIACEAE

Lannea schweinfurthii (Engl.)Engl. var. *acutifoliolata* (Engl.)Kokw.

Lannea schweinfurthii (Engl.)Engl. var. *stuhlmannii* (Engl.)Kokw.

Lannea welwitschii (Hiern)Engl. var. *ciliolata* Engl.

Ozoroa obovata (Oliv.)R. & A.Fernandes

ANNONACEAE

Annona senegalensis Pers. ssp. *senegalensis*

Artabotrys modestus Diels ssp. *macranthus* Verdc.

Asteranthe asterias (S.Moore)Engl. & Diels ssp. *asterias*

Monanthotaxis fornicata (Baill.)Verdc.

Monodora grandidieri Baill.

Ophrypetalum odoratum Diels

Uvaria acuminata Oliv.

Uvaria faulknerae Verdc.

Uvaria lucida Benth. ssp. *lucida*

Uvariodendron kirkii Verdc.

APOCYNACEAE

Adenium obesum (Forssk.)Roem. & Schult.

Ancylobotrys petersiana (Kl.)Pierre

Baissea myrtifolia (Benth.)Pichon

Carissa tetramera (Sacl.)Stapf.

Holarrhena pubescens (Buch-Ham.)G.Don

Hunteria zeylanica (Retz.)Gardn.

Landolphia kirkii Dyer

Strophanthus kombe Oliv.

Strophanthus petersianus Klotzsch

ARACEAE

Anchomanes abbreviatus Engl.

Gonatopus boivinii (Decne)Engl.

Gonatopus marattioides (Peter)Bogner

Gonatopus petiolulatus (Peter)Bogner

Stylochaeton salaamicus N.E.Br.

ARALIACEAE

Cussonia zimmermannii Harms

ASCLEPIADACEAE

Ceropegia distincta N.E.Br.

Ceropegia seticorana E.A.Bruce

Cryptolepis sinensis (Lour.)Merr. ssp. *africana* Bullock

Cynanchum gerrardii (Harvey)Liede

Schizostephanus alatus K.Schum

Dregea rubicunda K.Schum.

Huernia archeri Leach

Secamone retusa N.E.Br.

Tacazzea apiculata Oliv.

ASPARAGACEAE

Asparagus falcatus L.

Asparagus setaceus (Kunth)Jessop

Asparagus sp.

ASPHODELACEAE

Aloe rabaiensis Rendle

Aloe volkensii Engl. ssp volkensii

Chlorophytum filipendulum Bak. ssp. *amaniense* (Engl.)Nordal& A.D.Poulsen

Chlorophytum holstii Engl.

Chlorophytum sp.

Chlorophytum suffruticosum Bak.

ASPLENIACEAE

Asplenium buettneri Hieron.

BALANITACEAE

Balanites wilsoniana Dawe & Sprague

BALSAMINACEAE

Impatiens walleriana Hook.f.

BIGNONACEAE

Markhamia zanzibarica (DC.)Engl.

BOMBACACEAE

Adansonia digitata L.

Bombax rhodognaphalon Engl.

BORAGINACEAE

Bourreria nemoralis (Guerke)Thulin

Cordia faulknerae Verdc.

Cordia monoica Roxb.

Ehretia amoena Klotzsch

BURSERACEAE

Commiphora africana (A.Rich.)Engl. var. *africana*

Commiphora edulis (Kl.)Engl. ssp. *boiviniana* (Engl.)Gillett

Commiphora eminii Engl. ssp. *zimmermannii* (Engl.)Gillett

Commiphora lindensis Engl.

Commiphora sp.

BUXACEAE

Buxus obtusifolia (Mildbr.)Hutch.

CACTACEAE

Opuntia vulgaris L.

CAESALPINIACEAE

Afzelia quanzensis Welw.

Brachystegia spiciformis Benth.

Caesalpinia insolita (Harms)Brenan & Gillett

Cassia abbreviata Oliv. ssp. beareana (Holmes)Brenan

Cynometra suaheliensis (Taub.)Bak.f.

Cynometra webberi Bak.f.

Julbernardia magnistipulata (Harms)Troupin

Scorodophloeus fischeri (Taub.)J.Leon.

Tamarindus indica L.

CAPPARIDACEAE

Boscia angustifolia A.Rich. var. *angustifolia*

Boscia salicifolia Oliv.

Capparis fascicularis DC. var. *scheffleri* (Gilg & Bened.)DeWolf

Capparis sepiaria L.

Capparis viminea Oliv. var. *viminea*

Cladostemon kirkii (Oliv.)Pax & Gilg

Maerua holstii Pax

Maerua kirkii (Oliv.)F.White

Maerua macrantha Gilg

Maerua triphylla A.Rich.

Ritchiea capparoides (Andr.)Britten

Thilachium roseomaculatum Harvey & Vollesen

CELASTRACEAE

Maytenus mossambicensis (Klotzsch)Blakelock var. *ambonensis* (Loes.)N.Robson

Mystroxylon aethiopicum (Thunb.)Blakelock

CHENOPODIACEAE

Suaeda monoica J.F.Gmel.

COMBRETACEAE

Combretum butyrosum (Bertol.f.)Tul.

Combretum chionanthoides Engl. & Diels

Combretum illairii Engl.

Combretum padoides Engl. & Diels

Combretum schumannii Engl.

Combrteum sp

Pteleopsis myrtifolia (Laws.)Engl. & Dielz

Pteleopsis tetraptera Wickens

Terminalia boivinii Tul.

Terminalia prunioides Laws.

Terminalia sambesiaca Engl. & Diels

Terminalia spinosa Engl.

COMMELINACEAE

Aneilema aequinoctiale (P.Beauv.)Kunth

Aneilema calceolus Brenan

Aneilema petersii (Hassk.)C.B.Cl.

Aneilema taylorii C.B.Cl.

Commelina africana L. s.l.

Commelina benghalensis L.

Commelina bracteosa Hassk.

Commelina sp.

Cyanotis sp. nov.

Murdannia simplex (Vahl)Brenan

COMPOSITAE

Achyrothalamus marginatus O.Hoffm.

Aspilia mossambicensis (Oliv.)Wild

Bidens taylorii (S.Moore)Sherff

Emilia coccinea (Sims)G.Don

Ethulia angustifolia DC.

Gutenbergia sp.

Tridax procumbens L.

Pluchea sordida (Vatke)Oliv. & Hiern

Solanecio angulatus (Vahl)C.Jeffrey

Vernonia aemulans Vatke

Vernonia hildebrandtii Vatke

Vernonia sp.

Vernonia wakefieldii Oliv.

CONVOLVULACEAE

Ipomoea mauritiana Jacq.

Ipomoea pileata Roxb.

Ipomoea shupangensis Bak.

Ipomoea urbaniana (Dammer)Hall.f.

Stictocardia incomta (Hall.f.)Hall.f.

CRASSULACEAE

Kalanchoe lateritia Engl. var. *lateritia*

Kalanchoe obtusa Engl.

CUCURBITACEAE

Cucumis sp.

Cyclantheropsis parviflora (Cogn.)Harms

Kedrostis foetidissima (Jacq.)Cogn.?

Kedrostis heterophylla A.Zimm.

Momordica boivinii Baill. ?

Zehneria pallidinervia (Harms)C.Jeffrey

CYPERACEAE

Cyperus alternifolius L. ssp. *flabelliformis* (Rottb.)Kuk.

Cyperus exaltatus Retz.

Cyperus kaessneri C.B.Cl.

Cyperus sp.

Cyperus sp.

Kyllinga sp.

Mariscus hemisphaericus (Boeck.)C.B.Cl.

DICHAPETALACEAE

Dichapetalum zenkeri Engl.

Tapura fischeri Engl.

DRACAENACEAE

Dracaena sp cf aletriformis (Haw.)Bos ?ined

Sansevieria arborescens Cornn.

Sansevieria conspicua N.E.Br.

Sansevieria fischeri (Baker)Marais

Sansevieria gracilis N.E.Br.

Sansevieria kirkii Bak.

Sansevieria robusta N.E.Br.?

Sanseviera sp.

EBENACEAE

Diospyros bussei Guerke

Diospyros consolatae Chiov.

Diospyros natalensis (Harv.)Brenan

Diospyros squarrosa Klotzsch

ERYTHROXYLACEAE

Erythroxylum emarginatum Thonn.

Nectaropetalum kaessneri Engl. var. *kaessneri*

EUPHORBIACEAE

Acalypha engleri Pax

Acalypha fruticosa Forssk. Var. *fruticosa*

Acalypha neptunica Muell.Arg. var. *neptunica*

Aristogeitonia monophylla Airy Shaw

Bridelia cathartica Bertol.f.

Croton pseudopulchellus Pax

Drypetes parvifolia (Muell. Arg.)Pax & K.Hoffm.

Drypetes sp.

Erythrococca kirkii (Muell.Arg.)Prain

Erythrococca pentagyna A.R.-Sm.

Euphorbia nyikae Pax var. *neovolkensii* (Pax)Carter?

Euphorbia tirucalli L.

Euphorbia wakefieldii N.E.Br.

Excoecaria madagascariensis (Baill.)Muell.Arg.

Jatropha hildebrandtii Pax var hildebrandtii

Mallotus oppositifolius (Geisel.)Muell.Arg. var oppositifolius

Meineckia fruticans (Pax)Webster var. *fruticans*

Mildbraedia carpinifolia (Pax)Hutch. var. *carpinifolia*

Phyllanthus kaessneri Hutch. var. *kaessneri*

Phyllanthus reticulatus Poir.?

Phyllanthus sp

Phyllanthus welwitschianus Muell.Arg. var. *beillei* (Hutch.)Radc.-Sm.

Pycnocoma littoralis Pax

Ricinodendron heudelotii (Baill.)Pierre ssp. *africanum* Muell.Arg.)J.Leon. var. *tomentellum*(Hutch. & E.A.Bruce)A.R.-Sm.

Ricinus communis L.

Spirostachys venenifera (Pax)Pax

Suregada zanzibariensis Baill.

Synadenium pereskiifolium (Baill.)Guill.

Tragia furialis Bojer

Uapaca nitida Muell.Arg.

FLACOURTIACEAE

Dovyalis hispidula Wild

Grandidiera boivinii Jaub.

FLAGELLARIACEAE

Flagellaria guineensis Schumach.

GRAMINEAE

Hyperthelia dissoluta (Steud.)W.D.Clayton

Megastachya mucronata (Poir.)P.Beauv.

Panicum maximum Jacq.

Panicum sp.

Setaria sp.

GUTTIFERAE

Garcinia livingstonei T.Anders.

HERNANDIACEAE

Gyrocarpus americanus Jacq. ssp. *americanus*

HIPPOCRATEACEAE

Salacia elegans Oliv.

HYACINTHACEAE

Albuca abyssinica Jacq.

Ledebouria sp.

ICACINACEAE

Pyrenacantha kaurabassana Baill.

Pyrenacantha malvifolia Engl. var. *malvifolia*

Pyrenacantha vogeliana Baill.

LABIATAE

Hoslundia opposita Vahl

Ocimum americanum L.

Orthosiphon rubicundus (D.Don)Benth. s.l.

Plectranthus flaccidus (Vatke)Guerke

Plectranthus tenuiflorus Vatke?

Plectranthus tetragonus Guerke

Solenostemon latifolius (Benth.)J.K.Morton

Tinnea aethiopica Hook.f.

LECYTHIDACEAE

Barringtonia racemosa (L.)Spreng.

LINACEAE

Hugonia castaneifolia Engl.

LOBELIACEAE

Lobelia fervens ssp. *fervens*

LOGANIACEAE

Mostuea brunonis Didr. var. *brunonis*

Strychnos madagascariensis Poir.

Strychnos panganensis Gilg

Strychnos sp.

Strychnos spinosa Lam.

LYTHRACEAE

Lawsonia inermis L.

MALPIGHIACEAE

Acridocarpus alopecurus Sprague var. *alopecurus*

MALVACEAE

Abutilon mauritianum ?(Jacq.)Medic.

Abutilon zanzibaricum Mast.

Gossypioides kirkii (Mast.)J.B.Hutch.

Hibiscus altissimus Hornby

Hibiscus faulknerae Vollesen

Hibiscus surattensis L.

Pavonia leptocalyx (Sond.)Ulbr.

Sida acuta Burm.f.

Thespesia danis Oliv.

MELASTOMATACEAE

Memecylon fragrans A. & R.Fernandes

MELIACEAE

Xylocarpus sp.

MENISPERMACEAE

Cissampelos pareira L. var. *hirsuta* (DC.)Forman

Tiliacora funifera (Miers)Oliv.

Tinospora oblongifolia (Engl.)Troupin

MIMOSACEAE

Acacia adenocalyx Brenan & Exell

Acacia etbaica Schweinf. ssp. *platycarpa* Brenan

Acacia mellifera (Vahl)Benth. ssp. *mellifera*

Acacia rovumae Oliv.

Acacia stuhlmannii Taub.

Albizia anthelmintica Brongn.

Albizia glaberrima (Schumach. & Thonn.)Benth. var. *glabrescens* (Oliv.)Brenan

Dichrostachys cinerea (L.)Wight & Arn.

Parkia filicoidea Oliv.

Pseudoprosopis euryphylla Harms ssp. *puguensis* Brenan & Lock

MORACEAE

Dorstenia hildebrandtii Engl. var. *hildebrandtii* form b of FTEA

Ficus exasperata Vahl

Ficus lingua DeWilld & Th.Dur. ssp. *depauperata* (Sim)C.C.Berg

Ficus sp.

Ficus sycomorus L.

Ficus tremula Warb. ssp. *tremula*

MYRTACEAE

Eugenia tanaensis Verdc.

Syzygium cuminii (L.)Skeels ?

OCHNACEAE

Ochna sp

Ochna mossambicensis Klotzsch

Ochna thomasiana Engl. & Gilg

OLACACEAE

Ximenia americana L. var. *caffra* (Sond.)Engl.

OLEACEAE

Jasminum fluminense Vell.

Jasminum streptopus E.Mey.

OPILIACEAE

Opilia amentacea Roxb.

Pentarhopalopilia umbellulata (Baill.)Hiepko

ORCHIDACEAE

Aerangis kirkii (Reichb.f.)Schltr.

Angraecum cultriforme Summerh.

Acampe pachyglossa Reichb.f.

Bonatea rabaiensis (Rendle)Rolfe

Bulbophyllum maximum (Lindl.)Reichb.f.

Habenaria trilobulata Schltr.

Microcoelia exilis Lindl.?

Microcoelia sp.

Microcoelia sp.

Oeceoclades saundersiana (Reichb.f.)Garay & Taylor

Solenangis aphylla (Thou.)Summerh.

Solenangis wakefieldii (Rolfe)Cribb & J.Stewart

PALMAE

Hyphaene compressa H.Wendl.

PANDANACEAE

Pandanus rabaiensis Rendle

PAPILIONACEAE

Abrus precatorius L. ssp. *africanus* Verdc.

Alysicarpus glumaceus (Vahl)DC. ssp. *glumaceus* var. *intermedius* Verdc.

Craibia brevicaudata (Vatke)Dunn ssp. *brevicaudata*

Crotalaria axillaris Ait. ?

Crotalaria goodiiformis Vatke

Crotalaria polysperma Kotschy

Dalbergia boehmii Taub. ssp. *boehmii*

Dalbergia melanoxylon Guill. & Perr.

Dalbergia vacciniifolia Vatke

Erythrina sacleuxii Hua

Millettia usaramensis Taub. ssp. *usaramensis* var. *usaramensis*

Lonchocarp*us bussei* Harms

Ormocarpum kirkii S.Moore

Ormocarpum sennoides (Willd.)DC. ssp. *zanzibaricum* Brenan & Gillett
Stylosanthes fruticosa (Retz.)Alston
Tephrosia noctiflora Bak.
Tephrosia villosa (L.)Pers. ssp. *ehrenbergiana* (Schweinf.)Brummitt

PASSIFLORACEAE
Adenia kirkii (Mast.)Engl.
Adenia lindiensis Harms
Adenia rumicifolia Engl. ?
Schlechterina mitostemmatoides Harms

PEDALIACEAE
Sesamum calycinum Welw. ssp. *angustifolium* (Oliv.)Seidenst.

POLYGALACEAE
Carpolobia goetzei Guerke
Polygala petitiana A.Rich.

POLYPODIACEAE
Microgramma lycopodioides (L.)Copel.

PORTULACACEAE
Talinum caffrum (Thunb.)Eckl. & Zeyh.
Talinum portulacifolium (Forssk.)Schweinf.

RHAMNACEAE
Ziziphus mauritiana Lam.
Ziziphus mocronata Willd. ssp. *mucronata*
Ziziphus pubescens Oliv.

RHIZOPHORACEAE
Ceriops tagal (Perr.)C.B.Robinson

Rhizophora mucronata Lam.

RUBIACEAE

Agathisanthemum bojeri Klotzsch var. *bojeri*

Canthium glaucum Hiern ssp. *glaucum*

Canthium kilifiensis Bridson

Canthium mombazense Baill.

Canthium sp.

Catunaregam nilotica (Stapf)Tirvengadum

Coffea sessiliflora Bridson

Heinsia crinita (Afz.)G.Tayl. ssp. *parvifolia* (K.Schum. & K.Krause)Verdc.

Hymenodictyon parvifolium Oliv. ssp. *parvifolium*

Lamprothamnus zanguebaricus Hiern

Oldenlandia johnstonii (Oliv.)Engl. ssp. A of FTEA

Pachystigma loranthifolium (K.Schum.)Verdc. ssp. *loranthifolium*

Pavetta crebrifolia Hiern var. *crebrifolia*

Pavetta linearifolia Bremek.

Pavetta uniflora Bremek.

Pentas bussei K.Krause

Polysphaeria parvifolia Hiern

Psychotria amboniana K.Schum. var. *amboniana*

Psychotria holtzii (K.Schum.)Petit

Psychotria punctata Vatke var. *tenuis* Petit

Psydrax faulknerae Bridson

Psydrax polhillii Bridson

Psydrax recurvifolia (Bullock)Bridson

Pyrostria bibracteata (Bak.)Cavaco

Rytigynia celastroides (Baill.)Verdc.

Tarenna graveolens (S.Moore)Bremek. var. *graveolens*

Tarenna supra-axillaris (Hemsley)Brem. ssp. *supra-axillaris*

Tricalysia ovalifolia Hiern var. *glabrata* (Oliv.)Brenan

RUTACEAE

Toddaliopsis sansibarensis (Engl.)Engl.

Vepris eugeniifolia (Engl.)Verdoorn

Vepris glomerata (F.Hoffm.)Engl.

Vepris sp. nov.

Zanthoxylum chalybeum Engl. var. *chalybeum*

SALVADORACEAE

Dobera loranthifolia (Warb.)Harms

Salvadora persica L. ? var persica

SAPINDACEAE

Allophylus pervillei Blume

Allophylus rubifolius (A.Rich.)Engl. var. *alnifolius* (Bak.)Friis & Vollesen

Deinbollia borbonica Scheff. forma *glabrata* Radlk.

Haplocoelum foliolosum (Hiern)Bullock

Haplocoelum inoploeum Radlk.

Lecaniodiscus fraxinifolius Bak. ssp. *scassellatii* (Chiov.)Fries

Lecaniodiscus fraxinifolius Bak. ssp. *vaughanii* (Dunkley)Fries

Lepisanthes senegalensis (Poir.)Leenh.

Majidea zanguebarica Oliv.

Pancovia golungensis (Hiern)Exell & Mendonca

Pancovia sp.

SAPOTACEAE

Manilkara sansibarensis (Engl.)Dubard

Manilkara sulcata (Engl.)Dubard

Mimusops obtusifolia Lam.

Mimusops somaliensis Chiov.

Sideroxylon inerme L. ssp. *diospyroides* (Bak.)J.H.Hemsl

Vitellariopsis kirkii (Bak.)Dubard

SELAGINELLACEAE

Selaginella eublepharis A.Br.

Selaginella mittenii Bak.

SOLANACEAE

Solanum goetzei Dammer

Solanum zanzibarense Vatke

STERCULIACEAE

Byttneria fadenii Dorr ined

Cola minor Brenan

Melhania velutina Forssk.

Sterculia appendiculata K.Schum.

Sterculia rhynchocarpa K.Schum.

Waltheria indica L.

THYMELAEACEAE

Synaptolepis kirkii Oliv.

TILIACEAE

Grewia densa K.Schum.

Grewia forbesii Mast.

Grewia holstii Burret

Grewia plagiophylla K.Schum.

Grewia stuhlmannii K.Schum. ?

Triumfetta rhomboidea Jacq.

URTICACEAE

Urera sansibarica Engl.

VERBENACEAE

Avicennia marina (Forssk.)Vierh.

Clerodendrum acerbianum (Vis.)Benth. & Hook.f.

Lantana camara L.

Premna chrysoclada (Boj.)Guerke

Stachytarpheta urticifolia Sims

Vitex mombassae Vatke ?

Vitex payos (Lour.)Merr. var. *payos*

VIOLACEAE

Hybanthus enneaspermus (L.)F.Muell. var. *enneaspermus*

Rinorea ilicifolia (Oliv.)Kuntze var. *ilicifolia*

VITACEAE

Ampelocissus obtusata (Bak.)Planch. ssp. *kirkiana* (Planch.Wild & Drummond

Cissus aralioides (Welw.)Planch.

Cissus phymatocarpa Masinde & L.E.Newton

Cissus quinquangularis Chiov.

Cissus rotundifolia (Forssk.)Vahl

Cissus sciaphila Gilg

Cissus sylvicola Masinde & L.E.Newton

Cyphostemma adenocaule (A.Rich.)Wild & Drummond ssp. *adenocaule*

Cyphostemma buchananii (Planch.)Wild & Drum.

Cyphostemma duparquetii (Planch.)Descoings

Cyphostemma kirkianum (Planch.)Wild & Drummond ssp. *kirkianum*

Rhoicissus revoilii Planch.

ZAMIACEAE

Encephalartos hildebrandtii A.Br. & Bouche var. *hildebrandtii*

ZINGIBERACEAE

Siphonochilus kirkii (Hook.f.)B.L.Burtt

Appendix VIII: Plant list of species recorded in *kaya* Fungo (species arranged in alphabetic order of families)

ACANTHACEAE

Asystasia gangetica (L.)T.Anders. s.l. 259

Barleria ramulosa C.B.Cl.

Blepharis maderaspatensis (L.)Roth

Crossandra pungens Lindau

Elytraria minor Dokosi

Hypoestes forskaolei (Vahl)R.Br.

Pseuderanthemum hildebrandtii Lindau

Ruellia prostrata (Nees)T.Anders.

Ruellia sp.

ADIATACEAE

Adiantum comorense (Tard.)Verdc.

Pellaea doniana Hook.

ALISMATACEAE

Burnatia enneandra Micheli

Aloe kilifiensis Christian

Aloe secundiflora Engl.

Aloe volkensii Engl. ssp. *volkensii*

AMARANTHACEAE

Aerva lanata (L.)Schultes

Amaranthus sp

Celosia hastata Lopr.

Gomphrena celosoides Mast

Psilotrichum cyathuloides Susseng & Launert

Psilotrichum scleranthum Thwaites

Crinum sp.

Scadoxus multiflorus (Martyn)Raf. ssp. *multiflorus*

ANACARDIACEAE

Lannea schweinfurthii (Engl.)Engl. var. *acutifoliolata* (Engl.)Kokw.

Lannea schweinfurthii (Engl.)Engl. var. *stuhlmannii* Engl.)Kokw.

Rhus natalensis Krauss

Sclerocarya birrea (A.Rich.)Hochst. ssp. *caffra* Sond.)Kokw.

ANNONACEAE

Artabotrys modestus Diels ssp. *macranthus* Verdc.

Asteranthe asterias (S.Moore)Engl. & Diels ssp asterias

Monanthotaxis fornicata (Baill.)Verdc.

Monanthotaxis sp.

Monodora grandidieri Baill.

Ophrypetalum odoratum Diels

Uvaria acuminata Oliv.

Uvariodendron kirkii Verdc.

ASPHODELACEAE

Chlorophytum tenerrimum Poelln.?

Chlorophytum sp. cf *comosum* (Thunb.)Jacq.

APOCYNACEAE

Adenium obesum (Forssk.)Roem. & Schult.

Ancylobotrys petersiana (Kl.)Pierre

Carissa tetramera (Sacl.)Stapf?

Hunteria zeylanica (Retz.)Gardn.

Landolphia kirkii Dyer

Rauvolfia mombasiana Stapf

Strophanthus kombe Oliv.

Tabernaemontana elegans Stapf

Thevetia peruviana (Pers.)Merr.

ARACEAE

Anchomanes abbreviatus Engl.

Gonatopus boivinii (Decne)Engl.

Gonatopus petiolulatus (Peter)Bogner

Stylochaeton salaamicus N.E.Br.

Zamioculcas zamiifolia (Lodd.)Engl.

ARALIACEAE

Cussonia zimmermannii Harms

ASCLEPIADACEAE

Ceropegia aristolochioides Decne. s.l.?

Ceropegia nilotica Kotschy

Cryptolepis hypoglauca K.Schum.

Sarcostemma viminale (L.)R.Br. s.l.

Secamone parvifolia (Oliv.)Bullock ?

Tylophora stenoloba (K.Schum.)N.E.Br.

ASPARAGACEAE

Asparagus falcatus L.

Asparagus sp.

BALANITACEAE

Balanites pedicellaris Mildbr. & Schlecht.

BIGNONIACEAE

Markhamia zanzibarica (DC.)Engl.

BOMBACACEAE

Adansonia digitata L.

Bombax rhodognaphalon Engl.

BORAGINACEAE

Bourreria nemoralis (Guerke)Thulin

Cordia faulknerae Verdc.

Ehretia amoena Klotzsch

Ehretia bakeri Britten

BURSERACEAE

Commiphora africana (A.Rich.)Engl.

Commiphora campestris Engl. ?

Commiphora edulis (Kl.)Engl. ssp. *boiviniana* Engl.)Gillett

Commiphora eminii Engl. ssp. *zimmermannii* (Engl.)Gillett

Commiphora lindensis Engl.

CACTACEAE

Opuntia vulgaris Nill

CAESALPINACEAE

Afzelia quanzensis Welw.

Dialium orientale Bak.f.

Julbernardia magnistipulata (Harms)Troupin

Tamarindus indica L.

CANELLACEAE

Warburgia stuhlmannii Engl.

CAPPARIDACEAE

Boscia sp. nr *mossambicensis* Klotzsch

Cadaba carneo-viridis Gilg & Bened.

Capparis *sepiaria* L. ?

Capparis sp.

Capparis viminea Oliv. var viminea

Cladostemon kirkii (Oliv.)Pax & Gilg

Maerua calantha Gilg ?

Maerua decumbens (Brongn.)DeWolf

Maerua grantii Oliv.

Maerua holstii Pax

Maerua macrantha Gilg ?

Maerua sp.

Maerua triphylla A.Rich.

Ritchiea capparoides (Andr.)Britten

CELASTRACEAE

Elaeodendron schlechterianum (Loes.)Loes.

Elaeodendron schweinfurthianum (Loes.)Loes.

Maytenus heterophylla (Eckl. & Zeyh.)N.Robson

Maytenus mossambicensis (Klotzsch)Blakelock var. *ambonensis* (Loes.)N.Robson

Maytenus putterlickioides (Loes.)Exell & Mendonca

Mystroxylon aethiopicum (Thunb.)Loes.

COLCHICACEAE

Gloriosa superba L.

COMBRETACEAE

Combretum hereroense Schins ssp. *volkensii* (Engl.)Vickens

Combretum illairii Engl.

Combretum schumannii Engl.

Pteleopsis tetraptera Wickens

Quisqualis littorea (Engl.)Exell

Terminalia spinosa Engl.

COMMELINACEAE

Aneilema aequinoctiale (P.Beauv.)Kunth

Aneilema sp.

Commelina sp.

Cyanotis sp. nov.

Murdannia simplex (Vahl)Brenan

COMPOSITAE

Achyrothalamus marginatus O.Hoffm.

Aspilia mossambicensis (Oliv.)Wild

Bidens pilosa L.

Blepharispermum zanguebaricum Oliv. & Hiern

Brachylaena huillensis O.Hoffm.

Erythrocephalum minus Oliv.

Kleinia sp.

Microglossa sp. (? *pyrifolia*)

Solanecio angulatus (Vahl)C.Jeffrey

Vernonia aemulans Vatke

Vernonia hildebrandtii Vatke

Vernonia sp. (not matched in EA)

CONVOLVULACEAE

Ipomoea shupangensis B.k

Ipomoea sp.

Stictocardia incompta (Hall.f.)Hall.f.

CRASSULACEAE

Kalanchoe lateritia Engl. var. *lateritia*

CUCURBITACEAE

Cyclantheropsis parviflora (Cogn.)Harms

Zehneria pallidinervia (Harms)C.Jeffrey

CYPERACEAE

Bulbostylis sp.

Cyperus niveus Retz. var. *leucocephalus* (Kunth)Fosberg, syn C. obtusiflorus Vahl

Cyperus sp.

Cyperus sp.

DIOSCORIACEAE

Dioscorea sp.

DRACAENACEAE

Sansevieria arborescens Cornn.

Sansevieria conspicua N.E.Br. ?

Sansevieria fischeri (Baker)Marais

Sansevieria gracilis N.E.Br. ?

Sansevieria kirkii Bak.

Sansevieria robusta N.E.Br.

EBENACEAE

Diospyros bussei Guerke

Diospyros consolatae Chiov.

Diospyros loureiriana G.Don ssp. *rufescens* (Caveney)Verdc.

Diospyros natalensis (Harv.)Brenan

Diospyros squarrosa Klotzsch

Euclea natalensis A.DC. ssp. *obovata* F.White

Euclea racemosa Murr. spp. *schimperi* (A.DC.)F.White

ERYTHROXYLACEAE

Erythroxylum emarginatum Thonn.

EUPHORBIACEAE

Acalypha fruticosa Forssk. var. *fruticosa*

Acalypha neptunica Muell.Arg. var. *neptunica*

Acalypha neptunica Muell.Arg. var. *pubescens* Pax)Hutch.

Bridelia cathartica Bertol.f.

Bridelia micrantha (Hochst.)Baill

Croton pseudopulchellus Pax

Croton talaeporos A.R.-Sm.

Dalechampia trifoliata Verdc. & Greenway

Drypetes reticulata Pax

Erythrococca pubescens A.R.-Sm.

Euphorbia breviarticulata Pax

Euphorbia kassneri Pax

Euphorbia nyikae Pax var. *neovolkensii* (Pax)Carter

Euphorbia tirucalli L.

Excoecaria madagascariensis (Baill.)Muell.Arg.

Flueggea virosa (Willd.)Voigt ssp. *virosa*

Jatropha sp.

Margaritaria discoidea (Baill.)Webster

Mildbraedia carpinifolia (Pax)Hutch. var. *carpinifolia*

Phyllanthus amarus Schumach. & Thomn

Phyllanthus kaessneri Hutch.

Suregada zanzibariensis Baill.

Synadenium pereskiifolium (Baill.)Guill.

Tragia furialis Bojer

FLACOURTIACEAE

Dovyalis macrocalyx (Oliv.)Warb.

Dovyalis sp.

Grandidiera boivinii Jaub.

FLAGELLARIACEAE

Flagellaria guineensis Schumach.

GRAMINEAE

Chloris roxburghiana Schult

Dactyloctenium giganteum Fisher & Schweick.

Enteropogon sechellensis (Baker)Th.Dur. & Schinz

Eragrostis superba Peyr.
Hyperthelia dissoluta (Steud.)W.D.Clayton
Panicum maximum Jacq.
Panicum sp.
Sporobolus fimbriatus (Trin.)Nees

HERNANDIACEAE
Gyrocarpus americanus Jacq. ssp. *americanus*

HIPPOCRATEACEAE
Elachyptera parvifolia (Oliv.)N.Halle
Loeseneriella africana (Willd.)N.Halle var. *richardiana* (Cambess.)N.Halle
Salacia elegans Oliv.
Salacia sp.

ICACINACEAE
Pyrenacantha malvifolia Engl. var. *malvifolia*
Pyrenacantha vogeliana Baill.

LABIATAE
Hoslundia opposita Vahl
Ocimum gratissimum L. var. *macrophyllum* Briq.
Ocimum sp.
Plectranthus tenuiflorus Vatke
Solenostemon latifolius (Benth.)J.K.Morton
Tinnea aethiopica Hook.f.

LINACEAE
Hugonia castaneifolia Engl.

LOGANIACEAE
Strychnos magascariensis Poir.

Strychnos spinosa Lam.
Strychnos usambarensis Gilg

LORANTHACEAE
Agelanthus longipes (Baker & Sprague)Polh. & Wiens

MALPIGHIACEAE
Acridocarpus alopecurus Sprague var. *alopecurus*
Acridocarpus zanzibaricus (Loud.)A.Juss.

MALVACEAE
Abutilon zanzibaricum Mast.
Cienfugosia hildebrandtii Garcke
Gossypioides kirkii (Mast.)J.B.Hutch.
Hibiscus altissimus Hornby
Hibiscus micranthus L.f.
Hibiscus faulknerae Vollesen
Hibiscus schizopetalus Hook.f.
Pavonia leptocalyx (Sond.)Ulbr. syn *P. mollissima*
Sida acuta Burm.f.
Thespesia danis Oliv.

MENISPERMACEAE
Anisocycla blepharosepala Diels ssp. *tanzaniensis* Vollesen
Cissampelos pareira L. var. *hirsuta* (DC.)Forman
Dioscoreophyllum volkensii Engl. var. *volkensii*
Tiliacora funifera (Miers)Oliv.
Tinospora sp.
Triclisia sacleuxii (Pierre)Diels

MIMOSACEAE
Acacia adenocalyx Brenan & Exell

Acacia mellifera (Vahl)Benth. ssp. *mellifera*

Acacia nilotica (L.)Del. ? ssp. *subalata* (Vatke)Brenan

Acacia reficiens Wawra ssp. *misera* (Vatke)Brenan

Acacia robusta Burch. Ssp. *usambarensis* Taub.)Brenan

Acacia zanzibarica (S.Moore)Taub. var. *zanzibarica*

Albizia adianthifolia (Schumach.)W.F.Wright

Albizia anthelmintica Brongn.

Dichrostachys cinerea (L.)Wight & Arn

MORACEAE

Ficus bussei Mildbr. & Burret

Ficus lingua DeWild & Th.Dur. ssp. *depauperata* (Sim)C.C.Berg

MYRTACEAE

Eugenia capensis (Eckl. & Zeyh.)Sond. ssp. *multiflora* Verdc.

OCHNACEAE

Ochna mossambicensis Klotzsch

Ochna thomasiana Engl. & Gilg

OLACACEAE

Ximenia americana L. var. *caffra* (Sond.)Engl.

OPILIACEAE

Opilia amentacea Roxb.

Pentarhopalopilia umbellulta (Baill.)Hiopko

ORCHIDACEAE

Aerangis kirkii (Reichb.f.)Schltr.

Bonatea rabaiensis (Rendle)Rolfe

Eulophia speciosa (Lindl.)Bolus

Microcoelia exilis Lindl.

Microcoelia sp. (not exilis)

Oeceoclades saundersiana (Reichb.f.)Garay & Taylor

Vanilla roscheri Reichb.f.

PALMAE

Hyphaene compressa H.Wendl.

PAPILIONACEAE

Abrus precatorius L. ssp. *africanus*

Craibia brevicaudata (Vatke)Dunn ssp. *brevicaudata*

Dalbergia melanoxylon Guill. & Perr.

Dalbergia vacciniifolia Vatke

Erythrina sacleuxii Hua

Indigofera longimucronata Bak.f.

Indigofera sp.

Ormocarpum kirkii S.Moore

Tephrosia villosa (L.)Pers. ssp. *ehrenbergiana*

PASSIFLORACEAE

Adenia gummifera (Harv.) Harms var. *gummifera*

Adenia keramanthus Harms

Adenia kirkii (Mast.)Engl.

Adenia rumicifolia Engl.

Schlechterina mitostemmatoides Harms

PEDALIACEAE

Sesamum calycinum Welw. ssp. *angustifolium* (Oliv.) Seidenst.

POLYPODIACEAE

Platycerium alcicorne Desv. syn *P. vassei*

POLYGALACEAE

Carpolobia goetzei Guerke

POLYGONACEAE

Oxygonum sp

PORTULACACEAE

Talinum portulacifolium (Forssk.)Schweinf.

RHAMNACEAE

Lasiodiscus pervillei Baill. ssp. *ferrugineus* (Verdc.)E.Figueredo

Scutia myrtina (Burm.f.)Kurz.

Ziziphus mucronata Willd. ssp. *mucronata*

Ziziphus pubescens Oliv.

RUBIACEAE

Agathisanthemum bojeri Klotzsch var. *bojeri*

Canthium kilifiensis Bridson

Canthium mombazense Baill.

Catunaregam nilotica (Stapf)Tirvengadum

Coffea sessiliflora Bridson ssp. *sessiliflora*

Heinsia crinita (Afz.)G.Tayl. ssp. *parvifolia* K.Schum. & K.Krause) Verdc.

Hymenodictyon parvifolium Oliv. ssp. *parvifolium*

Kraussia kirkii (Hook.f.)Bullock ?

Lamprothamnus zanguebaricus Hiern

Oxyanthus zanguebaricus (Hiern)Bridson

Pavetta crebrifolia Hiern var. *crebrifolia*

Pavetta linearifolia Bremek.

Pentas bussei K.Krause

Polysphaeria parvifolia Hiern

Psychotria amboniana K.Schum.

Psydrax faulknerae Bridson

Psydrax recurvifolia (Bullock)Bridson

Pyrostria phyllanthoidea (Baill.)Bridson

Rytigynia mrimaensis Verdc.

Tricalysia ovalifolia Hiern var. *glabrata* (Oliv.)Brenan

Vangueria randii S.Moore ssp. *acuminata* Verdc.

RUTACEAE

Clausena anisata (Willd.)Benth.

Toddaliopsis sansibarensis (Engl.)Engl.

Vepris eugeniifolia (Engl.)Verdoorn

Vepris glomerata (F.Hoffm.)Engl.

Vepris sp.

Zanthoxylum chalybeum Engl.

SALVADORACEAE

Azima tetracantha Lam.

Dobera loranthifolia (Warb.)Harms

Salvadora persica L.

SAPINDACEAE

Allophylus rubifolius (A.Rich.)Engl. var. *alnifolius* (Bak.)Friis & Vollesen

Allophylus rubifolius (A.Rich.)Engl. var. *dasystachys* (Gilg)Verdc.

Cardiospermum halicacabum L. var?

Deinbollia borbonica Scheff. forma *glabrata* Radlk.

Haplocoelum foliolosum (Hiern)Bullock ssp. *mombasense* (Bullock)Verdc.

Haplocoelum inoploeum Radlk.

Lecaniodiscus fraxinifolius Bak. ssp. *scassellatii* (Chiov.)Fries

SAPOTACEAE

Manilkara mochisia (Bak.)Dubard

Manilkara sansibarensis (Engl.)Dubard

Manilkara sulcata (Engl.)Dubard

Mimusops obtusifolia Lam.

Sideroxylon inerme L. ssp. *diospyroides* (Baker.)J.H.Hemsl.

SCROPHULARIACEAE

Cycnium veronicifolium (Vatke)Engl. ssp. *veronicifolium*

SIMAROUBACEAE

Harrisonia abyssinica Oliv.

SOLANACEAE

Solanum goetzei Dammer

Solanum incanum L. s.l.

STERCULIACEAE

Cola minor Brenan

Dombeya taylori Bak.f.

Sterculia appendiculata K.Schum.

Sterculia rhynchocarpa K.Schum.

THYMELAEACEAE

Synaptolepis kirkii Oliv.

TILIACEAE

Grewia densa K.Schum.

Grewia forbesii Mast.

Grewia plagiophylla K.Schum.

Grewia stuhlmannii K.Schum.

Grewia truncata Mast.

Triumfetta rhomboidea Jacq.

URTICACEAE

Urera sansibarica Engl. ?

VERBENACEAE

Clerodendrum robustum Klotzsch var. *fischeri* (Guerke)Verdc.

Clerodendrum sansibarense Guerke ssp. *sansibarense*

Lantana camara L.

Premna chrysoclada (Boj.)Guerke

Premna hildebrandtii Guerke

Vitex mombassae Vatke

Vitex payos (Lour.)Merr. var. *payos*

Vitex strickeri Vatke & Hildebr.

VITACEAE 193

Cissus phymatocarpa Masinde & L.E.Newton

Cissus quinquangularis Chiov

Cissus rotundifolia (Forssk.)Vahl var. *rotundifolia*

Cissus sciaphila Gilg

Cissus sylvicola Masinde & L.E.Newton

Cyphostemma adenocaule (A.Rich.)Wild & Drummond ssp. *adenocaule*

Cyphostemma buchananii (Planch.)Wild & Drum.

Rhoicissus revoilii Planch.

Rhoicissus tridentata (L.f.)Wild & Drummond

ZAMIACEAE

Encephalartos hildebrandtii A.Br. & Bouche var. *hildebrandtii*

ZINGIBERACEAE

Siphonochilus kirkii (Hook.f.)B.L.Burtt