

Original article

A Contribution to Native Flora of AlRoseiris Locality, Blue Nile State, Sudan

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Locality

Abstract

This study identified and document species of the endemic flora of AlRoseiris Locality, Blue Nile State, Sudan. This study identified and updated 174 species belonging to 133 genera, 45 families and 26 orders, and including two new records to the Flora of the Sudan. The flora consist a variety of different growth-forms. The majority of the plant species have important economic uses.

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Introduction

Previously the vegetation of Sudan was classified under five main vegetation zones which are desert, semi-desert, low rainfall woodland savannah, high rain fall woodland savannah and mountainous vegetation (Harrison and Jackson, 1958). AlRoseiris locality located in Blue Nile State, which is classified under low rainfall woodland savanna.

Floras studies of Sudan are few, which are represented by the work of Broun and Massey (1929), Andrews (1950, 1952 and 1956) and Elamin (1990). In-addition to some regional studies regarding the vegetation of the Blue Nile State, but these studies did not cover all parts of the State. The studies include Gumaa (1988), Musa *et al.*, (2011), Gibreel *et al.*, (2013) and Ismail and ElSheikh (2016).

AlRoseiris locality was selected for this study because the area is considered as one of the most richest and diverse in plant species in Sudan, in-addition to large number of specimens previously collected from the study area were incorporated in various herbaria need to be revised and updated and included in the main flora of the Sudan. The present study aimed at documentation of the present flora of the AlRoseiris, Blue Nile State and consequently contributes to the updating of the Sudan's Flora.

Material and methods**Study area**

This study was carried out in AlRoseiris locality, Blue Nile State. Most of the study area is a plain with cracking clay soil and good drainage nature. It is lies between 12°33'N - 11°14'.11"N and 34°23' E - 35°05' E (Fig. 1). The Blue Nile State is characterized by heavy rainfall starting from April to November ranging from 300-800 mm/annum with peak months being July and September. The mean maximum temperature ranging between 32 C° to 40 C° and mean minimum temperature between 17 C° to 26 C° , with 20% to 80% relative humidity (Osman and Idris, 2012).

Specimen collection and identification

Plant specimens were collected during 2014-2015. Collection procedure followed the methods described by Lawrence (1969) and Forman and Bridson (1991). Specimens were identified and verified with the aid of Floras namely: Broun & Massey (1929), Andrews (1950, 1952 and 1956) and Elamin (1990). Also specimens were matched with already identified and authenticated herbarium specimens in the Forestry

Research Centre Herbarium (Soba, south of Khartoum) and Herbarium catalogue of the Royal Botanic Gardens, Kew
For confirmation <http://apps.kew.org/herbcat/navigator.do>

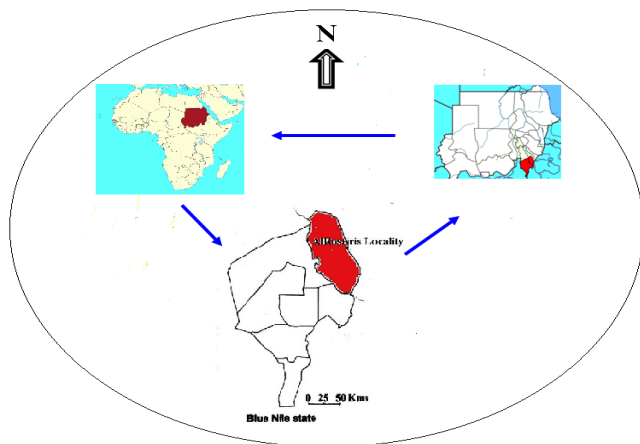


Figure 1. Study area: AlRoseiris locality, Blue Nile State, Sudan

Updating of plant names was taken into account according to recent literature namely: the catalogue of Friis and Vollesen (1998 and 2005), <http://www.theplantlist.org/> and Herbarium catalogue, Royal Botanic Gardens, Kew (<http://apps.kew.org/herbcat/navigator.do>). The plant families were arranged in a table follows APG III (2009) and the Linear Angiosperm Phylogeny Group (LAPG) III (Hastón *et al.*, 2009) classification system. While subfamilies, genera and species are arranged alphabetically within the families. Vernacular names and economic uses given were compiled from local people and available literature.

Results and Discussion

Survey of flora in AlRoseiris Locality revealed a total of 174 plant species belonging to 133 genera, 45 families and 26 orders (table 1).

Most of species belong to the order Poales (32 species, 20 genera and 2 families), Fabales (27 species, 20 genera, 2 families) Malvales (12 species, 8 genera, one family), Lamiales (12 species, 11 genera, 4 families), Malpighiales (10 species, 9 genera, 3 families) and the other orders include

species between 8 to 1.

The families Fabaceae (Leguminosae), Poaceae (Graminae) and Malvaceae are well represented in the flora of Al-Roseiris locality. While Nymphaeaceae, Aristolochiaceae, Asparagaceae, Arecaceae (Palmae), Cyperaceae, Celastraceae, Polygalaceae, Ochnaceae, Lythraceae, Onagraceae, Sapindaceae, Meliaceae, Salvadoraceae, Olacaceae, Loranthaceae, Nyctaginaceae, Loganiaceae, Scrophulariaceae, Pedaliaceae not include more than one species in each (Figure 2).

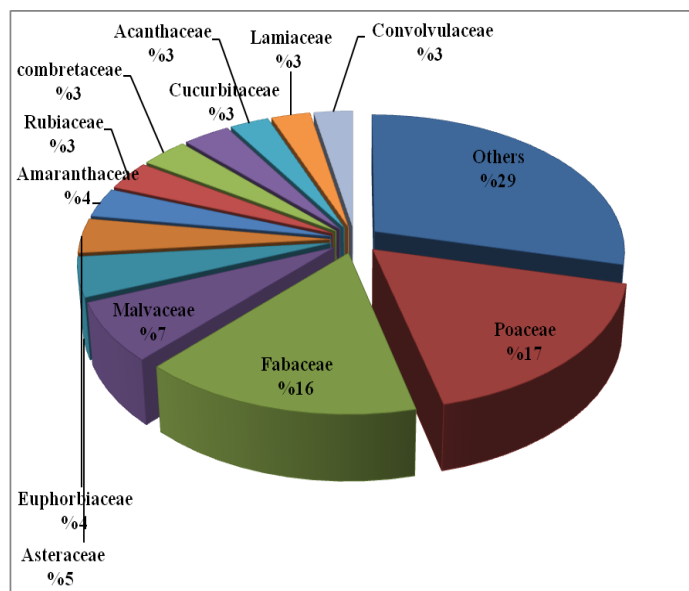


Figure 2. Distribution of plant species by family.

In this study, two new species (Figure 4) were added as new record to the flora of Sudan: *Ormocarpum trachycarpum* (Taub.) Harms (Fabaceae) and *Dorstenia barnimiana* Schweinf. (Moraceae)

Most of the plant species of the study area have important economic uses. 30% of plant species are fodder plants which play an important role of providing animals with fodders. The study area is considered as important sources for animal wealth; especially Blue Nile State is inhabited by Ambararu tribe, which is considered one of the important nomadic pastoralist tribes in the Sudan.

32% of plant species are used as medicinal plants by local

people. 17% of plant species especially trees and shrubs are considered as important source for fuel (fire wood and people especially in famine time).

Timber wood provided by 6% plant species, which are represented by Large trees and shrubs that utilized for timber which is used for making furniture, tool handles, and as building and constructional material. And only 3% plant species provide gums. (Figure 3)

charcoal). 12% of plants are edible and be consumed by local

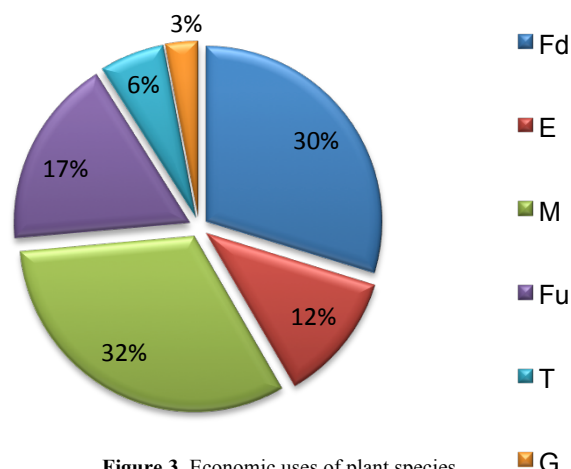


Figure 3. Economic uses of plant species

Table (1) Checklist of Flora of AlRoseiris locality, Economic uses: Fd = fodder, M= medicinal, T = timber, Fu = Fuel wood, E= edible fruit, G =gum.

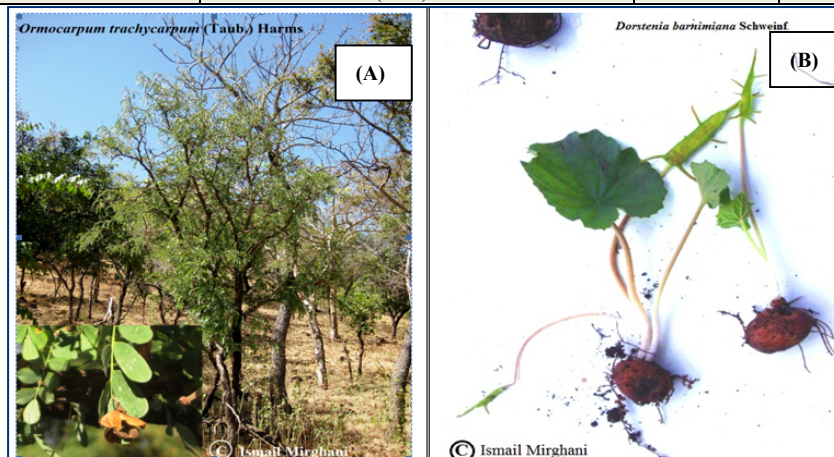
Order	Family	Species	Vern.name	Growth form	Uses
Nymphaeales	Nymphaeaceae	<i>Nymphaea lotus</i> L.	lotus	Aquatic herb	M
Piperiales	Aristolochiaceae Subf. Aristolochioideae	<i>Aristolochia bracteolata</i> Lam.	Um Jalajil,	Annual grass	M
Alismatales	Araceae subf. Aroideae	<i>Amorphophallus abyssinicus</i> (A. Rich.) N. E. Br. Subsp <i>abyssinicus</i>	Gandah	Herb	E
		<i>Stylochaeton hypogaeus</i> Lepr.	Basal Elkilab	herb	M,E
Asparagales	Asparagaceae sub f. Asparagoideae	<i>Asparagus flagellaris</i> (Kunth) Baker.	Dayoog	Herb	M,E
Arecales	Arecaceae	<i>Hyphaene thebaica</i> (Linn.) Mart.	Dom	Tree	M, E, T
Commelinales	Commelinaceae subf. Commelinoideae	<i>Commelina benghalensis</i> L.	Bayad	Annual herb	Fd
		<i>Commelina imberbis</i> Ehrenb. ex Hassk.	Ibrig El Faki	Annual herb	Fd
Poales	Cyperaceae	<i>Cyperus rotundus</i> L.	Seida	Herb	M
	Poaceae subf. Aristidoideae	<i>Aristida adscensionis</i> L	Gaw	Grass	Fd
		<i>Aristida hordeacea</i> Kunth.	Danab Elkadees	Grass	Fd
		<i>Aristida mutabilis</i> Trin. & Rupr.	Milesa	Grass	Fd
	Poaceae subf. Bambusoideae	<i>Oxytenanthera abyssinica</i> (A. Rich.) Munro.	Ganna	Woody grass	Fd
	Poaceae subf. Chloridoideae	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Um Asabi	Grass	Fd
		<i>Dinebra retroflexa</i> (Vahl) Panz. var. <i>Retroflexa</i>	Um Mamleiha	Grass	Fd
		<i>Eragrostis aspera</i> (Jacq.) Nees.		Grass	Fd
		<i>Eragrostis cilianensis</i> (All.) Janch.	Gash Elnamil	Grass	Fd
		<i>Eragrostis ciliaris</i> (L.) R.Br.	El Sherbakek	Grass	Fd
		<i>Eragrostis japonica</i> (Thunb.) Trin.		Grass	Fd
		<i>Eragrostis tremula</i> Hochst. exSteud.	Bannu	Grass	Fd
		<i>Eleusine indica</i> (L.) Gaertn	Telabun	Grass	Fd
		<i>Schoenefeldia gracilis</i> Kunth.	Um farida	Grass	Fd
	Poaceae subf. Panicoideae	<i>Brachiaria lata</i> (Schum.) Hubb.		Grass	Fd
		<i>Brachiaria reptans</i> (L.) C. A. Gardner & C. E. Hubb.		Grass	Fd
		<i>Cymbopogon nervatus</i> (Hochst.) Chiov.	Nal	Grass	Fd

		<i>Echinochloa colona</i> (L.) Link	Difra	Grass	Fd
		<i>Echinochloa rotundiflora</i> Clayton.	Um-Chir	Grass	Fd
		<i>Hyparrhenia confinis</i> var. <i>nudiglumis</i> (Hack.) Clayton	Um Sileila	Grass	Fd
		<i>Ischaemum afrum</i> (J.F. Gmel.) Dandy.	Ankoog	Grass	Fd
		<i>Pennisetum pedicellatum</i> Tan. subsp. <i>Pedicellatum</i>	Danab Elkadees, Um Dofoyo	Grass	Fd
		<i>Pennisetum ramosum</i> (Hochst.) Schweinf.	Abu Farwa	Grass	Fd
		<i>Pennisetum violaceum</i> (Lam.) Rich.		Grass	Fd
		<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Danab Elkalib	Grass	Fd
		<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E.Hubb. ex Moss.	Um-Tebis	Grass	Fd
		<i>Setaria verticillata</i> (L.) P.Beauv	Abu Liseg	Grass	Fd
		<i>Ophiuros papillosus</i> Hochst.		Grass	Fd
		<i>Oryza punctata</i> Kostchy ex Steud.	Ruz Elwadi, Um-Shebeety	Grass	Fd
		<i>Paspalum scrobiculatum</i> L.		Grass	Fd
		<i>Sorghum arundinaceum</i> (Desv.) Stapf.	Anees	Grass	Fd
		<i>Schizachyrium exile</i> (Hochst.)pilg.		Grass	Fd
Vitales	Vitaceae subf. Vitoideae	<i>Cissus quadrangularis</i> L.	Salala	Succulent climber	M
		<i>Cissus cornifolia</i> (Baker) Planch..		Erect woody herb	M
		<i>Cissus populnea</i> Guill. & Perr.		Woody climber	M
Zygophyllales	Zygophyllaceae subf. Tribuloideae	<i>Tribulus terrestris</i> L.	Direisa	Herb	Fd
		<i>Balanites aegyptiaca</i> (L.) Delile var. <i>Aegyptiaca</i>	Heglig	Tree	T, E, Fd, M, Fu
Celastrales	Celastraceae subf. Celastroideae	<i>Maytenus senegalensis</i> (Lam.) Exdl.	Yoi	Shrub	M, Fu
Fabales	Fabaceae subf. Caesalpinoideae	<i>Cassia arereh</i> Delile	Gaga	Tree	M, Fu
		<i>Senna italica</i> Mill.	Sin Elkalib	Herb	M
		<i>Senna obtusifolia</i> (L.) Irwin & Barneb	Kawal	Herb	E
		<i>Senna occidentalis</i> (L.) Link.	Soreeb	Herb	M,E
		<i>Tamarindus indica</i> L.	Aradeib	Tree	E, Fd, Fu
		<i>Tylosema fassoglensis</i> (Schweinf.) Torre & Hille	abu bukhas	Woody climber	M
	Fabaceae subf. Faboideae	<i>Alysicarpus glumaceus</i> (Vahl) DC. subsp. <i>Glumaceus</i>	Rizza	Herb	Fd
		<i>Aeschynomene nilotica</i> Taub.		Annual undershrub	Fd
		<i>Dalbergia melanoxylon</i> Guill. & Perr.	Babanous	Tree	T, M, Fd, Fu
		<i>Indigofera spicata</i> Forssk. var. <i>spicata</i>	Dahaseer	Herb	
		<i>Ormocarpum trachycarpum</i> (Taub.) Harms		Small tree	Fu
		<i>Rhynchosia minima</i> (L.) DC. var. <i>Memnonia</i>	Irg-Aldam	Herb	M
		<i>Desmodium dichotomum</i> (Wild.)DC.	Abu Areeda	Herb	Fd
		<i>Indigofera hochstetteri</i> Baker	Sharaya	Herb	Fd
		<i>Lonchocarpus laxiflorus</i> Guill. & Perr.	Khashkhash Azrag	Tree	T, Fu, M
		<i>Pterocarpus lucens</i> Guill.& Perr.	Traya	Tree	T, Fd, Fu

	Fabaceae subf Mimosoideae	<i>Tephrosia uniflora</i> Pers.	Irg El Tais, Abu Rassein	Herb	Fd
		<i>Zornia glochidiata</i> Reichb. ex DC.	Sheleni	Herb	Fd
		<i>Acacia mellifera</i> (Vahl) Benth.	Kitir	Shrub	Fu, , Fd
		<i>Acacia nilotica</i> (L.) Willd. Ex <i>Delile</i> subsp. <i>tomentosa</i> (Benth.) Brenan	Sunut	Tree	T, Fd, M, Fu, G
		<i>Acacia oerfota</i> (Forssk.) Schweinf	Laot	Shrub	M, Fu
		<i>Acacia polyacantha</i> Willd. subsp. <i>campylacantha</i> (Hochst. ex A, Rich.) Brenan	Kakamut	Tree	G, Fd, M, Fu
		<i>Acacia senegal</i> (L.) Willd. var. <i>senegal</i>	Hashab	Tree	G, Fd, Fu
		<i>Acacia seyal</i> Del. var. <i>seyal</i>	Talih	Tree	G, Fd, Fu, M
		<i>Acacia seyal</i> Del. var. <i>fistula</i>	Sufar Abiad	Tree	G, Fd, Fu, M
		<i>Dichrostachys cinerea</i> (L.) White & Arn.	Kadad	Shrub	Fu, Fd
		<i>Entada africana</i> Guill. & Perr.	Sesaban	Tree	Fu, Fd
Rosales	Rhamnaceae	<i>Securidaca longepedunculata</i> Fresen. var. <i>longepedunculata</i>	Alali	Tree	M, Fu
		<i>Ziziphus abyssinica</i> Hochst. ex A. Rich.	Nabag Elfeel	Tree	T, E, Fd, Fu
	Moraceae	<i>Ziziphus spina-christi</i> (L.) Desf.	Nabag, Elsiddir	Tree	T, E, Fd, Fu
		<i>Ficus glumosa</i> Delile	Gumaiz	Tree	T, Fu
		<i>Ficus sycomorus</i> L.	Gumaiz	Tree	E, Fu
		<i>Ficus thonningii</i> Blume.	Irkabi	Tree	M, Fu
		<i>Dorstenia barnimiana</i> Schweinf.	Irg Alagrab	Herb	M, Fu
Cucurbitales	Cucurbitaceae su bf. Cucurbitoideae	<i>Ctenolepis cerasiformis</i> (Stocks) Hook.f.	Sim Elter	Climber herb	M
		<i>Coccinia grandis</i> (L.) Voigt		Climber herb	
		<i>Cucumis prophetarum</i> L. subsp. <i>prophetarum</i>	Fagoos Elmarfaeen	Climber herb	M
		<i>Lagenaria siceraria</i> (Molina) Standl.	Garaa or Bukhsa	Climber herb	M
		<i>Luffa cylindrica</i> (L.) M. Roem.	Leef	Climber herb	M
		<i>Mukia maderaspatana</i> (L.) M. Roem.		Climber herb	
Malpighiales	Euphorbiaceae subf. Acalyphoideae	<i>Acalypha indica</i> L.		Herb	M
		<i>Chrozophora plicata</i> (Vahl) A.Juss. ex Spreng.		Herb	
		<i>Ricinus communis</i> L.	Khirwa	Shrub	M
		<i>Tragia plukenetii</i> Radcl.-Sm.	Um Hawera	Herb	
	Euphorbiaceae subf.. Crotonoideae	<i>Jatropha aethiopica</i> Muell.Arg.	Abu ofein	Herb	M
	Euphorbiaceae subf. Euphobioidae	<i>Euphorbia hirta</i> L.	Um libena	Herb	M
		<i>Euphorbia prostrata</i> Ait.Hort.	Um libena	Herb	M
	Phyllanthaceae	<i>Flueggea virosa</i> (Roxb. Ex Will) Royle		Shrub	Fu
		<i>Phyllanthus neruri</i> L.	Eregana	Herb	
		<i>Phyllanthus amarus</i> Schurnach.	Eregana kabeera	Herb	
	Ochnaceae	<i>Ochna leucophloeos</i> Hochst. ex A. Rich.	Um- Sumaeen	Tree	Fu
Myrtales	Combretaceae	<i>Anogeissus leiocarpa</i> (DC.) Guill. & Perr.	Sahab	Tree	T, Fu, Fd, M
		<i>Combretum aculeatum</i> Vent.	Shuheit	Shrub	Fu, Fd, M
		<i>Combretum collinum</i> Fresen subsp. <i>binderianum</i> (Kotschy) Okafa.	Elhabeel	Tree	T, Fu

		<i>Combretum hartmannianum</i> Schwein .	Habeel	Tree	M , Fu
		<i>Combretum molle</i> R.Br. ex G.Don.	Habeel	Tree	T, Fu, M
		<i>Terminalia laxiflora</i> Engl. &Diels.	Darout	Tree	T, M, Fu
	Lythraceae	<i>Ammannia auriculata</i> Willd.	Tamr Elfar	Herb	M
Sapindales	Onagraceae subf. Ludwigioideae	<i>Ludwigia erecta</i> (L.) H. Hara.		Herb	Fd
	Burseraceae	<i>Boswellia papyrifera</i> (Delile.) Hochst.	Taragtarag	Tree	G, M, Fu
		<i>Commiphora pedunculata</i> Engl.	Gafal	Tree	Fu, M,G
	Anacardiaceae	<i>Lannea humilis</i> (Oliv.) Engl.	Leyun	Tree	E, M, Fu
		<i>Lannea fruticosa</i> (Hochst. ex A. Rich.) Engl.	Leyun	Tree	T, Fu
		<i>Lannea schimperi</i> (Hochst. ex. A. Rich.) Engl.	Elmilais, Amzaq	Tree	Fu, E
		<i>Sclerocarya birrea</i> (A. Rich.) Hochst.	El Homeid	Tree	T, E, M, Fu
	Sapindaceae	<i>Cardiospermum halicacabum</i> L.		Climber herb	M
Malvales	Meliaceae	<i>Khaya senegalensis</i> A. Juss.	Mahogani	Tree	T, M., Fu
	Malvaceae subf. Bombacoideae	<i>Adansonia digitata</i> L.	Tabaldi	Tree	E, M, Fd
	Malvaceae subf. Grewioideae	<i>Corchorus tridens</i> L.	Khodra	Herb	E, Fd
		<i>Corchorus olitorus</i> L.		Herb	E,Fd
		<i>Grewia flavescens</i> Juss.	Khlekhsan	Woody climber	Fu,E, Fd, M
		<i>Grewia mollis</i> Juss.	Basham	Shrub	Fu, E
		<i>Grewia tenax</i> (Forsk.) Fiori.	Elgudiem	Shrub	Fu, E, Fd
		<i>Triumfetta pentandra</i> A. Rich.	Abu liseig	Herb	Fd ,E, M
	Malvaceae subf. Malvoideae	<i>Abutilon angulatum</i> (Guill. & Perr.) Mast. var. <i>angulatum</i>	Amboru	Herb	M
		<i>Abutilon pannosum</i> (G.Forst.)Schltdl.	Humbook	Herb	M
		<i>Abelmoschus esculentus</i> (L.) Moench	Weika	Herb	E
		<i>Sida alba</i> L.	Um-shadia	Herb	M
	Malvaceae subf. Sterculioideae	<i>Sterculia setigera</i> Delile.	Tartar	Tree	G, M, Fu
Brassicales	Salvadoraceae	<i>Salvadora persica</i> L. var. <i>persica</i>	Arak	Shrub	Fd ,E, M, Fu
	Capparaceae.	<i>Boscia senegalensis</i> (Pers.) Lam. ex Poir.	Mikhiet, Kursn	Shrub	E, Fd, M, Fu
		<i>Capparis deciduas</i> (Forsk.) Edgew.	Tundub	Shrub	Fu, E, Fd
	Cleomaceae	<i>Cleome gynandra</i> L.	Tamaleka	Herb	E
Santalales	Olacaceae	<i>Ximenia americana</i> L. var. <i>Americana</i>	Kalto, Um Medeika	Shrub	E, Fd, M
	Loranthaceae	<i>Tapinanthus globiferus</i> (A. Rich.) Tiegh.	Anaba	Parasitic herb	Fd, M
Caryophyllales	Amaranthaceae subf. Amaranthoideae	<i>Achyranthes aspera</i> L. var. <i>aspera</i>	Fakhah	Herb	M
		<i>Amaranthus graecizans</i> L.	Lisan Elteir	Herb	Fd
		<i>Amaranthus hybridus</i> L.	Khadiga kouro	Herb	Fd
		<i>Celosia argentea</i> L.	Danab Elkalib	Herb	O, M
		<i>Pupalia lappacea</i> (Linn) Juss.	Abu Luseg	Herb	M
	Amaranthaceae subf. Gomphrenoideae	<i>Alternanthera pungens</i> Kunth.	Haskaneet	Herb	Fd
	Nyctaginaceae	<i>Boerhavia erecta</i> L.	Gashayt Elter	Herb	E, Fd, M
Caryophyllales	Aizoaceae	<i>Trianthema portulacastrum</i> L.	Rabaa	Herb	
Gentianales	Rubiaceae subf. Ixoroideae	<i>Catunaregam nilotica</i> (Stapf.) Tirveng.	Shagart Elmarfaein	Tree	Fu, M
		<i>Gardenia ternifolia</i> subsp. <i>jovis-tonantis</i>	Baggis,	Small tree	M

		(Welw.) Verdc. var. <i>jovis-tonantis</i>	Abu Gawi		
		<i>Vangueria madagascariensis</i> Gmel.	Kirkir	Small tree	E
	Rubiaceae subf. Rubioideae	<i>Oldenlandia corymbosa</i> L.	Bushari	Herb	M
		<i>Kohautia grandiflora</i> DC.		Herb	
		<i>Spermacoce pusilla</i> Wall.	Tamr Elfar	Herb	M
Loganiaceae	<i>Strychnos innocua</i> Del.	Um Bikhesa	Tree	E, T, Fd, M, Fu	
	Apocynaceae subf. Asclepiadoideae	<i>Calotropis procera</i> (Aiton) W.T.Aiton	Elushar	Tree	M
		<i>Leptadenia arborea</i> (Forssk.)Schweinf.	Uleg	Climber herb	
Solanales	Convolvulaceae	<i>Merremia aegyptia</i> (L.) Urb.	El Liwais	Climber herb	M
		<i>Merremia emarginata</i> (Burm.f.) Hallier f.	U m Shireta	Creeping herb	Fd
		<i>Merremia hederacea</i> (Burm.f.) Hallier f.		Climber herb	M
		<i>Ipomoea aquatica</i> Forssk.		Aquatic herb	
		<i>Ipomoea eriocarpa</i> R. Br.		Herb	Fd
	Solanaceae subf. Solanoideae	<i>Datura innoxia</i> Mill.	Sikeran	Herb	M
		<i>Physalis peruviana</i> L.	kurm kurum	herb	M
		<i>Solanum incanum</i> L.	Gubein	Herb	M
Lamiales	Scrophulariaceae	<i>Striga hermonthica</i> (Delile) Benth.	Bouda	Herb	M
	Pedaliaceae	<i>Sesamum radiatum</i> Schumach.	Simsim Eljebal	Herb	E, M
	Lamiaceae	<i>Hyptis spicigera</i> Lam.		Herb	
		<i>Hyptis suaveolens</i> (L.)Poit.		Herb	
		<i>Leonotis nepetifolia</i> (L.) R. Br. var. <i>africana</i> (P. Beauv.) J.K.Morton	Kashaw	Herb	M
		<i>Leucas martinicensis</i> (Jacq.) Ait.f.	Baraw	Herb	M
		<i>Ocimum americanum</i> L.	Rehan	Herb	M
		Acanthaceae subf. Acanthoideae	<i>Peristrophe paniculata</i> (Forssk.) Brummitt.	Abu Rukab	Herb
	<i>Barleria tetraglochin</i> Milne-Redh.			Herb	Fd
	<i>Blepharis maderaspatensis</i> (L.) Roth.			Herb	Fd
	<i>Dicliptera verticillata</i> (Forssk.) C.Chr.			Herb	M
	<i>Justicia flava</i> (Vahl) Vahl		Fakha	Herb	Fd
	Asterales	Asteraceae subf. Asteroideae	<i>Acanthospermum hispidum</i> DC.	Hurab hawsa	Herb
<i>Bidens bipinnata</i> L.				Herb	E, M
<i>Goniocaulon indicum</i> C. B. Clarke			Abu-morowa	Herb	M
<i>Pentanema indicum</i> (L.) Y. Ling				Herb	M
<i>Xanthium strumarium</i> L.			Ramtook	Herb	M
<i>Dicoma tomentosa</i> Cass.			Um shoka	Herb	M
<i>Ethulia conyzoides</i> L.f. subsp. <i>conyzoides</i>			Haza	Herb	M
<i>Guizotia scabra</i> (Vis.) Chiov.				Herb	M

Figure 4. (A). *Ormocarpum trachycarpum* and (B). *Dorstenia barnimiana*

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