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Taxonomic Study of Trees and Shrubs of Zalingei Area West Darfur State- Sudan

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Abstract: ***The present study forms a checklist on taxonomy of trees and shrubs of Zalingei area Western Sudan. The material examined included freshly collected specimens plus all specimens deposited at various herbaria and those reported for the study area in different sites (publication) (Triag, Abata, Orokam and Shawa). A total number of forty eight plant species that belong to thirty one genera, twenty families and three subfamilies were documented to represent the present taxonomy of trees and shrubs of Zalingei area. The study resulted in identification of four species not recorded in the study area before and disappearance of nine species; In addition to that the species names were updated.***

Keywords: trees and shrubs

1. Introduction

Studies on the flora of Sudan are few, represented in the works of Broun and Massey (1929) and Andrews (1950, 1952, and 1956). Recently El Amin (1990) made valuable attempt to up-date the trees and shrubs of the Sudan.

Studies on regional floras include Crowfoot (1928), Andrews (1948) Obaid and Mohmoud (1968). Over four decades passed since, Harrison and Jackson (1958) had published their work on the ecological classification of the vegetation of the Sudan, definitely, several ecological changes have occurred. These changes are attributed to climatic change and human intervention. Like other Sahelian countries they are under study and have witnessed a period of severe drought, conflict and illegal cutting of trees, Thriakul (1984). For these reasons Zalingei district was specifically selected for this study.

From an ecological point of view Zalingei locality is very important for its great potential resources particularly forests. Although neighboring areas like Jebel Marra received some research work on forestry and flora in general e. g. Wickens (1976), no detailed research was conducted in Zalingei area except the work of Wickens (1976) who described 155 species from Zalingei area.

2. Study Area

The study area is confined to the Zalingei locality western Darfur State Sudan. It lies approximately between latitudes 12˚30́ North and longitude 23˚ 30́ west.

The climate of the study area is described with respect to two meteorological stations located at Jebel Marra project in Zalingei town for the period 2001-2009 as follows:

Average temperature at Zalingei is up to 25.7 C˚ in May the temperature is the highest 41.2 C˚. The rainy season (April-May) is with mean annual rainfall of 700 mm October. Relative humidity is 80% in August.

3. Materials and Methods

Firstly the author collected specimens from the different plant species in the Study area, the fresh specimens were collected via two field trips in rainy season. The collection sites were Abata, Traij, Shawa and Gerye, all specimens were deposited at, and confirmed with the herbarium of Botany Department Herbarium, University of Khartoum, secondly using digital camera photos were taken for (whole trees or shrubs, leaves, fruits and flowers).

Synonyms of species identified (where exist) were extracted from references such as Wickens (1976), Andrews (1947, 1948 and 1953), Sahni (1968), El Amin (1983, 1990), Thirkul (1984), Vogt (1995) and Von Maydell (1986).

4. Results and Discussion

Twenty families were identified including 31 genera and 48 species. These include 38 trees and 10 shrubs.
The studied families, genera and species were alphabetically arranged and listed as shown in the table below.

Table 1: List of the plant species (indigenous) in Zalingei

No	Family	Species	Vern names
1	Anacardiaceae	*Lannea fruticosa* (Hochst. ex A. Rich.) Engl	Leyun-Ghallub
		Lannea schimperi (Hochst. exA. Rich.) Engl.	Leyun-Amzag-Suda
		Sclerocarya birrea (A. Rich.) Hochst.	Humeid
2	Asclepiadaceae	*Calotropis procera* (Aiton.)W.T. Aiton	Usher
3	Balanitaceae	*Balanites aegyptiaca* (L.) Delile.	Hegleeg (Laloub)
4	Bignoniaceae	*Kigelia africana* (lam.) Benth.	Um shutur
5	Boraginaceae	*Cordia africana* Lam.	Gmbil
6	Burseraceae	*Commiphora africana* (A.Rich) Engl	Gafal

		Boswellia papyrifera (Del.) Hochst.	Trag Trag
7	Capparaceae	*Boscia angustifolia* A. Rich.	Sraih
		Boscia senegalensis (Pers.) lam. ex Poir.	Mukheit
8	Combretaceae	*Anogeissus leiocarpus* (DC.) Guill. & Perr.	Sahab – seilk
		Combretum aculeatum Vent., Choix.	Habeel Shehait
		Combretum collinum Fresen. Subsp.	Habeel
		Guiera senegalensis J.F. Gmel.	Gobaish
		Terminalia brownii Fresen.	Subagh – Shaf
9	Ebenaceae	*Diospyros mespiliformis* Hochst.ex. A. DC.	Gughan, Jokhan
10	Euphorbiacea	*Ricinus communis L.*	Khirwa
11	LLeguminoseae-Caesalpiniaceae	*Bauhinia rufescens* Lam	Kulkul
		Piliostigma thonningii (Schumach.) Milne-Redh.	Kharub
		Tamarindus indica L.	Aradeib
12	Leguminoseae- sub Fabaceae	*Dalbergia melanoxylon* Guill &per	Babanous
13	Leguminoseae- sub family Mimosaceae	*Acacia ataxacantha* DC.	
		Acacia gerrardii Benth.	Salgam
		Acacia laeta R.Br. ex Benth.	Subahi ,Kitir achbash
		Acacia mellifera (vahl) Benth.	Kitir
		Acacia nilotica. (L.) Willd ex De subsp. *tomentosa*	Sunt
		Acacia oerfota (forssk.) Schweinf.	Laut
		Acacia polyacantha subsp. *campylacantha* (Hochst. ex A.Rich.) Brenan	Kakamut, Um siniena
		Acacia senegal (L.) Willd.	Hashab
		Acacia seyal var. *seyal* Delile.	Talih Ahmar – Talih
		Acacia sieberiana DC.	Kuok
		Albizia amara (Roxb) Boiv. subsp *sericocephela* (Benth) Bren	Arad
		Albizia anthelmintica Brongn.	Girfat ad dud
		Dichrostachys cinerea (L.) Wight & Arn.	Kaddad
		Faidherbia albida (Delile) A.Chev.	Haraz
14	Meliaceae	*Khaya senegalensis* (Desr.) A. Juss	Mahogoni
15	Moraceae	*Ficus platyphylla* Delile	
16	Rhamnaceae	*Ziziphus mauritiana* Lam.	Sidr
		Ziziphus mucronata willd.	
		Ziziphus spina-christi (L.) Desf.	Sidr
17	Rubiaceae	*Catunaregam nilotica* (Stapf) Tirveng.	
		Gardenia ternifolia Schumach. & Thonn.	Abu guei
18	Sterculiaceae	*Sterculia setigera* Del.	Tartar, Faider
19	Tiliaceae	*Grewia flavescens* Juss,	Khelisan
		Grewia picta Baill. var. picta	Guddiem
		Grewia villosa Willd	Gregdan, Tikko
20	Ulmaceae	*Celtis toka (Forssk.)* Hepper & J.R.I.Wood	Mohagria, Lipingo

Names of species were updated and that include *Celtis integrifolia* to *Celtis toka* (Forssk.) Hepper & J.R.I.Wood, *Xeromphis nilotica* (Stapf) Keay to *Catunaregam nilotica* (Stapf) Tirveng and *Grwia tenax* to *Grewia picta* Baill. var. *picta*.

According to African plant database the family Leguminosae is divided into three sub-families: Caesalpiniodeae which was Caesalpiniaceae, Fabaceae which was Papilionaceae before and Mimosoideae which was Mimosaceae.

Wickens (1976) described 155 species from Zalingei including trees, shrubs and herbs. This study revealed the presence of new species in the area as well as disappearance of other species. The new species are *Acacia laeta*, *Boscia angustifolia*, *Catunaregam nilotica* and *Ziziphus mucronata* which are found for the first time. The species which disappeared are *Cadaba farinose, Capparis oblongfolia, Cleome nephyeln, Crataeva adansonii, Maerea pseudopetalosa, Combertum microplyllum, Euphorbia prostrola, Euphorbia tirucalli* and *Prosopis spp*. *Acacia* species are more dominant in the area.

Table 2: The new species recorded for the first time in the study area:

No	The species
1	*Acacia laeta* R.Br. ex Benth.
2	*Boscia angustifolia* A. Rich.
3	*Catunaregam nilotica* (Stapf) Tirveng.
4	*Ziziphus mucronata* willd.

Table 3: The species which disappeared are:

No	The species
1	*Cadaba farinose*
2	*Capparis oblongfolia*
3	*Cleome nephyeln*
4	*Crataeva adansonii*
5	*Maerea pseudopetalosa*
6	*Combretum microplyllum*
7	*Euphorbia prostrola*
8	*Euphorbia tirucalli*
9	*Prosopis spp*

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