

MORPHO-TAXONOMIC AND ECOLOGICAL STUDY OF *ALOE VERA* TOURN. EX L. SPECIES FOUND IN KEBBI STATE, NIGERIA, WEST TROPICAL AFRICA

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During floristic exploration in the Kebbi State Nigeria, 300 plant specimens were collected. After scrutiny of literature 150 species has identified during 2008 -2011 but no flower of *Aloe vera* Tourn. ex L. species were found. So, present investigation deal with morphology, taxonomy and ecology of *Aloe vera* Tourn. ex L. species.

Keywords : *Aloe vera*; Flower; Kebbi State; Nigeria.

Introduction

Geographical Position: Kebbi State is located at approximately latitudes 10 °N and 30 °N and longitudes 3° E and 6°E. It is situated in the North Western part of Nigeria and is bordered by the Niger and Benin Republics in the North and West respectively, while on the East and South, it is surrounded by Sokoto and Niger States, respectively. Kebbi State has a total land area of approximately 37,698 sq. km¹.

Topography: Kebbi State is dominated by massive flood plains of the in-land river valley system. Thus, it typically has a flat but undulating elevation of about 150 m in the flood plains. This increase towards the Niger River basin to about 600 m on the eastern side. The alluvial sediments in the flood plains range from gravel to clay. It is this sediment which gets saturated during the rains, to store water in the sands for dry season farming. The Geology of Kebbi State is characterized by thick sedimentary deposited of the Sokoto-Rima basin. Other areas in Kebbi State are under laid by Pre-Cambrian Basement Complex rocks¹.

Climatic conditions: Kebbi State enjoys a tropical type of climate, generally characterized by wet and dry seasons. The rainfall begins in April with the heaviest rainfall recorded in the months of July and August. The cold harmattan period characterized by dust laden wind prevails in November to January while the months of February and March are extremely hot and dry. The mean annual temperature vary considerably but usually stand at 42°C. The mean annual rainfall is 500 mm¹.

Material and Methods

Taking into consideration the detailed political map of

the state and physiographical information about it, collection localities were chalked out so as to cover maximum geographical and topographical range. During the collection drives observations on habit and habitat, flower colour and fragrance, colour of bark and blaze (in case of trees and shrub), besides dominance and sociability of the collected plants, were entered in field books. At least five tagged specimens were pressed on spot for preparing herbarium sheets and a bundle of a few plant specimens, tagged with the same field number, was also collected in polythene bag for study at laboratory. Macroscopic and microscopic studies on collected specimens, determination of their identity and preparation of the herbarium specimens were performed after Jain and Rao² and Okoli³. Duly processed herbarium specimens were housed in the herbarium of Department of Biological Sciences, Kebbi State University of Science and Technology Aliero, Kebbi State, Nigeria, for record and references.

Justification for the research -During floristic explorations in Kebbi State, Nigeria, the author did not observed flower in *Aloe vera* Tourn. ex L. species and did not observed by earlier floribologist⁴⁻⁹. The present taxonomy of *Aloe vera* Tourn. ex L. will be useful for taxonomist, ethnomedicinist and phytochemist.

Description of Taxon-*Aloe vera* Tourn ex L. synonyms *Aloe barbedensis* Miller, *A. vulgaris* Lamk., Royle; *A. perfoliata* L. var. *vera* L.; belong to family Liliaceae (Monocot family).

The authors have planted *Aloe vera* Tourn ex L. species around his house premises. After three years deep observation the flowers has occurred between October to November.

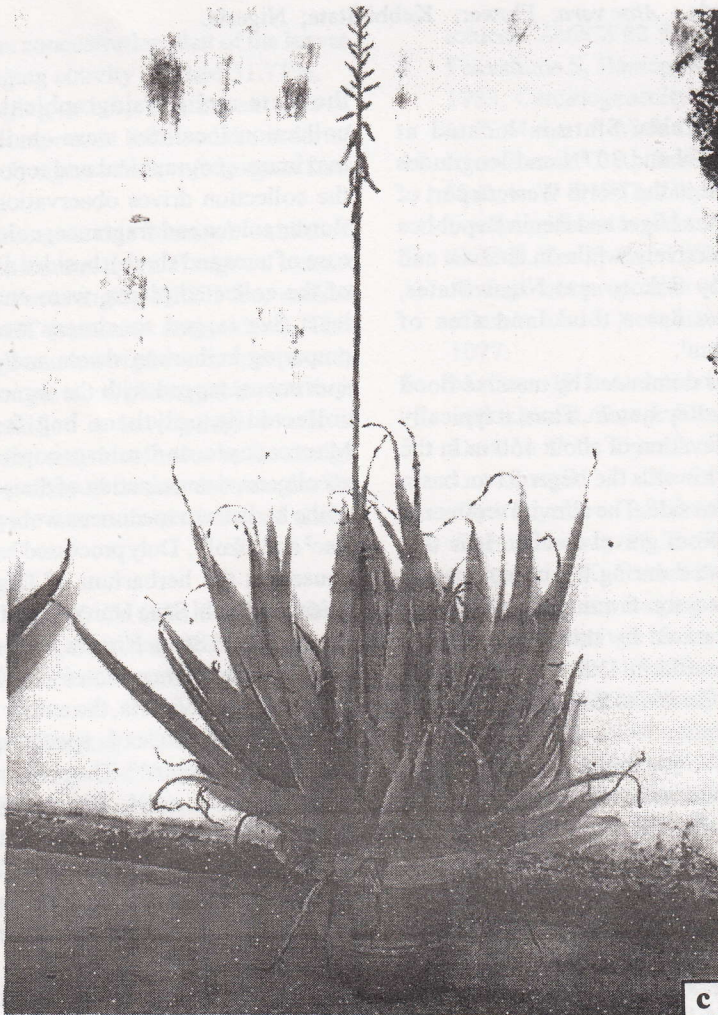


Fig.1. a, b and c distribution : Arabian peninsula , North Africa (Sudan and Egypt) , West Africa (Nigeria) , China , India and North America.

It is a perennial herb, stemless succulent plant growing to 60-110 cm, tall spreading by offsets. Roots are fibrous and adventitious. Leaves are 12, thick and fleshy, green to grey in colour. Margin of the leaf is serrated and small white teeth. The flowers appear during October to November months, on spike up to 105 cm in tall, pedicellate. The colours of flowers are orange to red colours. Flower length is 3.5 cm and stamens, petals, sepals each of them 6 in numbers. The length of stamens are 2.1 cm. Corolla is tubular and 2 to 3 cm long. The fruits did not seen. Aliero, D.Singh: 133.(See Fig. 1 a, b and c). *Ecological notes* : Grow in sandy soil, fadama land, fieldbunds, gardens, around house premises and waste places. Leaves are thick and fleshy. Roots are fibrous adventitious and well developed. Leaves margins are serrated.

Results and Discussion

The present investigation has considered particularly morphology, taxonomy and ecology of *Aloe vera* Tourn ex L. species found in Kebbi state, Nigeria (West Tropical Africa

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