Faculty of Science
Botany

Phylogenetic and Phenetic Analyses on Apocynaceae *senso lato*

A Thesis Submitted for the Degree of Doctor of Philosophy of Science (Botany)

(Taxonomy of Flowering Plants)

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قَالُوا۟ سُبْحَٰنَكَ لَا عِلْمَ لَنَآ

إِلَّا مَا عَلَّمْتَنَآ ۖ إِنَّكَ أَنتَ ٱلْعَلِيمُ ٱلْحَكِيمُ

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Declaration

This thesis has not been previously submitted for a degree this or any other universities.

Hanan Aboulghasm Salim Dabbub

Dedication

I dedicate this work to my country Libya and Zawia university. To my parents brothers and sisters for their love and support.

Hanan Aboulghasm Salim Dabbub

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Abstract

Apocynaceae *senso lato* is considered as one of the interesting angiospermic family (varied between evergreen trees, shrubs or herbs). It contains milky latex or rarely watery juice. Twenty species are dealt within the present study (representing 19 genera and four out of five subfamilies). The morphological characters and molecular data are investigated and extracted then grouped in tables and plates using traditional and modern tools (LM & SEM and chloroplast rbcL scquene respectively).

The aim of the present study is to explore the weight of taxonomic and molecular criteria in the evaluating the relationships between the species under investigation in addition a contribution to explain the anguments among the family in considering it as one family or two taxonomic entities.

The obtained 167 morphological and 68 palynological were numerically subjected and analyzed using NTSYST-PC program (version 2.02). The obtained dendrograms from the combined (morphological and palynological criteria) and from palynological only reinforced the treatment of the family as two distinct taxonomic entities. The obtained cladogram based on molecular data support the treatment of Apocynaceae and Asclepiadaceae as one large (Apocynaceae *senso lato*) as compared by some old or modern systems of classification.

Keywords: Apocynaceae, Asclepiadaceae, Lamina architecture, Epidermal characters, Pollen grains, rbcL.