CHEMICAL INVESTIGATION OF
INDIAN MEDICINAL PLANTS

Thesis Submitted To
SRI VENKATESWRA UNIVERSITY
for the Degree of
DOCTOR OF PHILOSOPHY

By
K. V. SYAMASUNDAR
MAY, 1982
PREFACE

The research work embodied in this thesis has been carried out in the Chemical Laboratories of Sri Venkateswara University, Tirupati, Andhra Pradesh, under the guidance of Prof. Dr. D. Adinarayana, M.A., Ph.D. The extent of information derived from the existing literature has been indicated in the body of the thesis at appropriate places by Arab numerals giving the source of information. The work is original and has not been submitted, in part or in full, for any other degree or diploma.

The author wishes to express his sincere thanks and profound sense of gratitude to Prof. Dr. D. Adinarayana, M.A., Ph.D., for his inspiring guidance and constant encouragement.

(K. V. SYAMASUNDAR)
ACKNOWLEDGEMENTS

The author wishes to express his sincere thanks to:

Prof. V. R. Krishnan, M.A., Ph.D. (Kansas) and Prof. N. Appala Raju, D.Sc., Department of Chemistry, Sri Venkateswara University College of Sciences, Tirupati for providing research facilities.

Dr. K. N. Rao, M.Sc., Ph.D., Lecturer in Botany, S. V. University, Tirupati for taxonomical identification of plant materials used in this research work and Sri P. Ranga Rao, I.F.S., Group Manager, A.P.F.D.C. Ltd., for providing the root-wood of *Pterocarpus marsupium*.

Prof. H. Wagner, Director, Institut für Pharmazeutische Biologie der Universität München, Karlstraße 29, München, West Germany and Prof. Swaminathan, University of Madras, for providing NMR and MS data.

Prof. V. S. R. Rao and Dr. K. R. K. Easwaran, Department of Molecular Biophysics, I.I.Sc., Bangalore for recording ORD and CD spectra.

Dr. D. Gunasekar, Sri P. Ramachandraiah and those friends who rendered help in the progress of my research work.

The University Grants Commission, New Delhi for the award of Junior Research Fellowship.
CONTENTS

CHAPTER I

Part A: Review of polyphenolic constituents of Pterocarpus members 1

Part B: Chemical investigation of Pterocarpus marsupium (Leguminosae), structure elucidation of pterosin - A new C-glucosyl-β-hydroxy-dihydrochalcone 28

Experimental 58

References 76

CHAPTER II

Terpenic constituents of Pterocarpus marsupium 87

Experimental 121

References 133

CHAPTER III

C-Glycosides of Desmodium triflorum 137

Experimental 169

References 185

CHAPTER IV

Phytochemical investigation of Polygonum glabrum (N.O. Polygonaceae) 193

Experimental 214

References 228

SUMMARY 234
I Structure Elucidation of Pterosupin from *Pterocarpus marsupium*, the First Naturally Occurring C-Glycosyl-β-hydroxy-dihydrochalcone

II A New Sesquiterpene Alcohol from *Pterocarpus marsupium*

III Occurrence of a Rare Diholpseylflavones, 2'-O-Glucosylvitexin From *Desmodium*

IV Polyphenolic constituents of *Polyzonum glabrum* seeds admixed with flowers and stem.

[Naturforsch. (accepted)]

[Phytochemistry (in press)]

[Current Science (communicated)]

[Leather Science, Vol. 27, (1980), 264]