The subject matter of the present thesis has been described in five chapters and deals with the phytochemical investigations carried out on (i) *Trichosanthes cucumerina* (Linn), (ii) *Momordica charantia* (Linn), (iii) *Albizia lebbek* (Benth), (iv) *Mimusops elengi* (Linn) and (v) *Saponaria vaccaria* (Linn). A brief resume of each one as given below;

CHAPTER - I

INTRODUCTION:

The first chapter which is an introductory one deals with the importance of plant chemistry and describes the physiological importance of (i) *Trichosanthes cucumerina* (Linn), (ii) *Momordica charantia* (Linn), (iii) *Albizia lebbek* (Benth), (iv) *Mimusops elengi* (Linn) and (v) *Saponaria vaccaria* (Linn), along with the phytochemical investigations already carried out on them chronologically.

It also mentions some of the recent discoveries made in the field of plant chemistry and applications of modern analytical techniques in their structural elucidation, covering in brief the problem taken and work done.
CHAPTER - II

ISOLATION AND STUDY OF A NEW INSECT MOURTING HORMONE, TAXISTERONE-B (3 EPI-22 DEOXYECDOCYSTERONE), FROM THE LEAVES OF TRICHOSANTHES CUCUMERINA (LINN).

This chapter comprises of two parts:

PART - I: ISOLATION AND IDENTIFICATION OF A NEW INSECT MOURTING HORMONE, TAXISTERONE-B FROM TRICHOSANTHES CUCUMERINA (LINN).

Isolation and structural elucidation of a new insect moulting hormone, molecular formula \(C_{27}H_{44}O_6\), m.p. 115-118\(^0\), \(M^+ = 464\), yield (0.100%) from the concentrated methanol soluble fraction of the concentrated 95% ethanolic extract of the leaves of *Trichosanthes cucumerina* (Linn), and identified as; 3 epi-22 deoxyecdysterone (I), has been dealt in this part of the chapter.
PART - II: PHARMACOLOGICAL STUDY OF A NEW INSECT MOLTING HORMONE, TAXISTERONE-B, ON DYSDERCUS SIMILIS (HETEROPTERS, PYROHOCORIDAE).

Insect moulting hormone Taxisterone-B, which was isolated from the leaves of *Trichosanthes cucumerina* (Linn), when administered orally and injected to *Dysdercus similis* at a dose level 10 ug/insect (5th nymph). On the basis of observations we concluded that, Taxisterone-B has more potential insect moulting activity than the Taxisterone.
CHAPTER III

ISOLATION AND STUDY OF A NEW SAPONIN, STIGMAST-5, 17(20)-Dien-3-O-β-D-arabinofuranosyl (1 → 4)-O-α-L-rhamnopyranosyl (1 → 4)-O-β-D-glucopyranoside FROM THE ROOTS OF MOMORDICA CHARANTIA (LINN).

The concentrated chloroform:ethanol extract of the concentrated 95% ethanolic extract of the roots of Momordica charantia (Linn), when worked up, yielded a new saponin in (0.060%) yield, molecular formula C_{46}H_{76}O_{14}, m.p. 146-148°, M^+ = 852 and was identified as; stigmaster-5, 17(20)-dien-3-O-β-D-arabinofuranosyl (1 → 4)-O-α-L-rhamnopyranosyl (1 → 4)-O-β-D-glucopyranoside (II); by its chemical degradation and spectral studies.
CHAPTER IV

ISOLATION AND STUDY OF A NEW SAPONIN (ECHINOCYSTIC ACID-
3-0-\(\alpha\)-L-RHAMNOPYRANOSYL (1 \(\rightarrow\) 5)-0-\(\beta\)-D-XYLOFURANOSYL
(1 \(\rightarrow\) 5)-0-\(\beta\)-D-ARABINOFURANOSYL (1 \(\rightarrow\) 4)-0-\(\beta\)-D-GLUCO-
PYRANOSIDE FROM THE ROOTS OF ALBIZZIA LEBBEK (BENTH).

The concentrated methanolic extract of the concentrated
95% ethanolic extract of the roots of Albizzia lebbek (Benth),
when worked up, yielded a new saponin in (0.070%) yield,
molecular formula \(C_{52}H_{84}O_{21}\), m.p. 211-212\(^{\circ}\), \(M^+ = 1044\) and was
identified as; echinocystic acid-3-0-\(\alpha\)-L-rhamnopyranosyl
(1\(\rightarrow\)5)-0-\(\beta\)-D-arabinofuranosyl
(1 \(\rightarrow\) 5)-0-\(\beta\)-D-xylofuranosyl(1 \(\rightarrow\) 4)-0-\(\beta\)-D-glucopyranoside
(III); by its chemical degradation and spectral studies.
CHAPTER - V

STUDIES ON THE STEROIDAL CONTENTS FROM THE ROOTS OF MIMUSOPS ELENGI (LINN) AND LEAVES OF SAPONARIA VACCARIA (LINN).

This chapter comprises of two parts:

PART - I: ISOLATION AND STUDY OF A STEROL (5α-STIGMAST-9(11)-EN-3β-OL) FROM THE ROOTS OF MIMUSOPS ELENGI (LINN).

The concentrated methanolic extract of the concentrated 95% ethanolic extract of the roots of Mimusops elengi (Linn), when worked up, yielded a sterol in (0.063%) yield, molecular formula C_{29}H_{50}O, m.p. 153-154°C, M^+ = 414 and was identified as: 5α-stigmast-9(11)-en-3β-ol (IV); by its chemical degradation and spectral studies.
PART - II: ISOLATION AND STUDY OF \( \beta \)-SITOSTEROL FROM

THE LEAVES OF SAPONARIA VACCARIA (LINN).

The concentrated methanolic extract of the concentrated 95% ethanolic extract of the leaves of Saponaaria vaccaria (Linn), when worked up yielded a sterol in (0.070%), molecular formula \( \text{C}_{25}\text{H}_{50}\text{O} \), m.p. 140-142\( ^\circ \), \( M^+ = 414 \) and was identified as; \( \beta \)-sitosterol (V); by its chemical degradation and spectral studies.