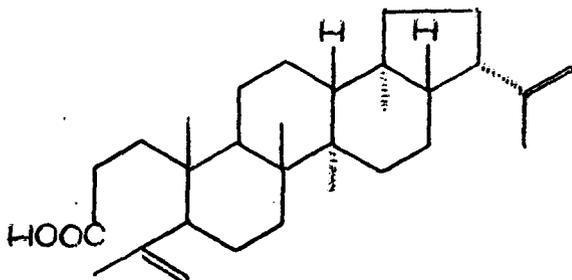


## S U M M A R Y

The work embodied in the present thesis has been divided into four parts:

- A. The first three parts (Parts I, II & III) consist of investigations carried out on the benzene extract of the trunk bark and stem of Sapium sebiferum Roxb.
- B. The last part (Part IV) deals with the investigations on the neutral part of Euphorbia Sikkimensis Boiss.
- A. Part I, Chapter III deals with the acidic fraction of Sapium sebiferum Roxb. from which a new 3,4-seco-triterpene acid,  $C_{30}H_{48}O_2$ , m.p.  $178-80^\circ$ ,  $[\alpha]_D^{25} +28.57^\circ$  has been isolated. The name Sebiferic acid has been proposed for it by the author after the name of the species from which it has been isolated for the first time. The investigations on the elucidation of the structure of sebiferic acid (A) have been discussed.



A

The presence of a carboxyl group in a side chain has been established from the observation of easy hydrolysis of methyl

sebiferate. The presence of two double bonds were established by perbenzoic acid titration and formation of tetrahydro derivative. The appearance of two active methylene groups and two methyl groups on a double bond in the NMR spectra of methyl sebiferate revealed the presence of two isopropenyl side chains.

Partial synthesis of the acid from moretenone oxime by the methods of Whitham and Klinot established the absolute configuration of sebiferic acid.

Part II, Chapter II comprises of the work of the constituents of the neutral part of Sapium sebiferum. Isolation and identification of moretenone, a new triterpene alcohol - 3-epi-moretenol, a paraffin alcohol  $C_{28}H_{58}O$ , moretenol,  $\beta$ -sitosterol have been discussed. Isolation of a new nor-triterpene,  $C_{29}H_{46}O_4$ , and work on its partial structure have been discussed.

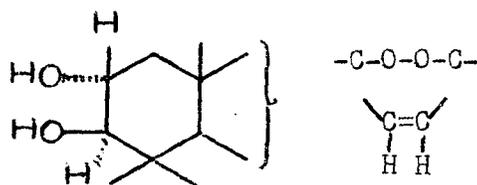
Section C deals with the elucidation of the structure of a ketone and its subsequent identity with moretenone.

Section D deals with the elucidation of the structure of 3-epi-moretenol. The configuration of the hydroxyl group at C-3 position was indicated by NMR. Chromium trioxide gave moretenone. Its stereochemistry was confirmed by partial synthesis of 3-epi-moretenol and moretenol from moretenone by Paton's method.

Section E deals with the isolation of a branched chain paraffin alcohol  $C_{28}H_{58}O$ , m.p.  $86-9^{\circ}$ ,  $[\alpha]_D^{25} -13.8^{\circ}$ .

Section F deals with the isolation and identification of moretenol.

Section G comprises the isolation of a new nor-triterpene alcohol  $C_{29}H_{46}O_4$ , m.p.  $228-9^\circ$ ,  $[\alpha]_D^{25} -9.09^\circ$ . Two of the oxygen functions have been found to be present as  $2^\alpha$ ,  $3^\beta$  hydroxy groups by NMR. Acetylation of this nor-triterpene gave a diacetate and from the IR it was evident that neither of the two remaining oxygen functions were present as hydroxyl or carbonyl group which was supported by chemical reactions. The presence of a AB quartet (HC=CH) was indicated by NMR. The diacetate liberated two mole equivalents of iodine for one mole of the compound in acetic acid solution. From this result the presence of peroxide linkage has been assumed. Partial structure B has been postulated for the compound.



B

Part III comprises the isolation and elucidation of the structure of 3,4-di-O-methyl ellagic acid - a new derivative of ellagic acid obtained from the benzene insoluble part of Sapium sebiferum Roxb.

The presence of ortho dihydroxy grouping was established by the formation of diphenyl methylene acetal derivative by reaction with  $\alpha, \alpha$  dichlorodiphenyl methane. The UV spectra of the compound and the effect of the presence of aluminium chloride and boric acid on the UV spectra has been studied and discussed.

B. Part IV deals with the results of investigation on the neutral part of Euphorbia Sikkimensis Boiss. Glutenone, Butyrospermol,  $\beta$ -sitosterol were isolated and identified in addition to a new triterpene  $C_{31}H_{52}O$  ( $M^+$  440), m.p.  $94-6^\circ$ ,  $[\alpha]_D^{25} +58.6^\circ$ . Presence of a double bond was indicated by NMR and perbenzoic acid titration. It gave an acetate, m.p.  $107-8^\circ$ ,  $[\alpha]_D^{25} +50^\circ$ , benzoate m.p.  $274-5^\circ$ . Further work was interrupted as the compound could not be isolated from the plant procured in different seasons. However, this yielded only a paraffin alcohol-identified as 1-Hexacosanol.