STUDIES ON THE EXTRACTIVES AND RESINS OF SOME SPECIES OF THE PLANT FAMILIES FLACOURTIACEAE AND DIPTEROCARPACEAE

Presented by

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Synopsis

In this programme the extractives and resins of some species of the families Flacourtiaceae and Dipterocarpaceae have been studied. The bark, timber, fruit pericarp and seed extractives of Hydnocarpus octandra Thw. , and bark and timber extractives of Hydnocarpus venenata Gaertn. and Trichadenia zeylanica Thw. of the family Flacourtiaceae have been studied. Similarly resin, bark and timber extractives of the species Dipterocarpus hispidus Thw. and the resin of the species Doona congestiflora Thw. of the family Dipterocarpaceae have been studied.

The chemical investigations by the earlier workers of the family Flacourtiaceae have been outlined with reference to the pure compounds isolated. Similarly the earlier work on resins of the family Dipterocarpaceae have been outlined with reference to biogenesis and variety of compounds isolated.

Hydnocarpus octandra Thw.

From the bark the following compounds were isolated and characterised. Friedelan-3-one, Friedelan-3β-ol, Friedelan-3α-ol, Friedelan-3α-ol acetate, octandrolal, octandronal, octandrolic acid, octandronic acid, octandrolol, octandronol, β-sitosterol, trichadenic acid A, trichadenic acid B, ursolic acid and mangostin. From the timber and the pericarp of the fruit β-sitosterol and friedelan-3-one were isolated and characterised.

Hydnocarpus venenata Gaertn

From the bark the following compounds were isolated and characterised. Acetoxy ursolic acid, acetoxy betulinic acid, ursolic acid, betulinic acid, betulonic acid, β-sitosterol and mangostin. From the timber β-sitosterol was isolated and characterised.

Trichadenia zeylanica Thw.

From the bark the following compounds were isolated and characterised. β-sitosterol, friedelan-3α-ol acetate, trichadenic acid A, acetoxy trichadenic acid B, acetoxy trichadonic acid A and trichadonic acid. From the timber β-sitosterol and acetoxy trichadenic acid B were isolated and characterised.

Dipterocarpus hispidus Thw.

The following compounds were isolated and characterised from the resin. Humulene, caryophyllene, alloaromadendrene, dipterocarpol, ocotillone (20R), ocotillone (20S), asiatic acid and 2α,3β dihydroxyurs-12-en-28-oic acid. From the bark betulinic acid and dammarenediol (20S) and from the timber dipterocarpol and asiatic acid were isolated and characterised.

Doona congestiflora Thw.

From the resin the following compounds have been isolated and characterised. Dipterocarpol, β-amyrin, ursolic acid, dammarenediol, 2α,3β dihydroxyurs-12-en-28-oic acid and asiatic acid.

The compounds trichadenic acid A, trichadenic acid B, acetoxy trichadenic acid A, acetoxy trichadenic acid B, trichadonic acid, octandrolal, octandronal, octandrolol, octandronol, octandrolic acid, octandronic acid are reported for the first time. In addition to the above the following, partially synthesised new compounds are reported. 2α,3β,dihydroxyurs-12-ene-23-al-28-oic acid, asiatic acid α brome γ lactone, acetoxy octandrolal, Methyltrichadenate A, acetoxy methyltrichadenate A, methyltrichadonate, deoxytrichadenic acid, deoxymethyltrichadonate, mesyltrichadenic acid A, acetoxy methyl-trichadenate B, ethyl trichadonate and ethylene ketal of trichadonic acid.