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SHORT COMMUNICATION

IDENTITY OF THE POLYPHENOL OF SHOREA SPECIES WITH HOPEAPHENOL

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Plant. *Shorea talura* and *S. robusta* Dipterocarpaceae.

Uses. Host for lac insect, *Laccifer lacca.*

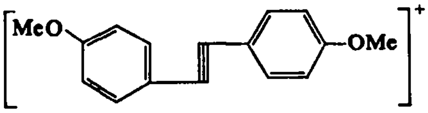
Previous work. *S. talura,*[1] *S. robusta.*[2]

Heartwood. (Extracted with light petroleum—negligible amounts of wax.)

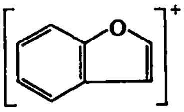
Ether extract gave hopeaphenol;[3, 4] $C_{56}H_{42}O_{12}$; m.p. > 350° $[\alpha]_D^{28} = -402{\cdot}9°$: u.v., i.r. recorded. Oxidation with alkaline-nitrobenzene and nitric acid gave *p*-hydroxy benzaldehyde and picric acid respectively.

Hopeaphenol methyl ether. M.p. 170° (m.p. and mixed m.p.; TLC comparison with an authentic sample) $[\alpha]_D^{28°} = -301{\cdot}6°$; methoxyl value 29%; Mol. wt. 1013 (Rast): u.v., i.r., NMR recorded. Oxidation with cold alkaline potassium permanganate yielded anisic acid.

Because of ready decomposition, the mass spectrum was not obtained satisfactorily and did not have the molecular ion peak. The prominent mass peak was 238 which could be accounted for as due to (I); the other important mass peak was 118 which may be due to (II). Based on these data a suggestion[4] was made that the phenolic component from *S. talura* could be made up of stilbene units condensed in some novel fashion.



(I)



(II)

Dibromo derivative of the methyl ether. (M.p. and mixed m.p.; TLC comparison with an authentic sample.)

Hopeaphenol Acetate. M.p. 245–247°; —$CO.CH_3$ value 33·5%; NMR spectrum recorded.

Recent study of hopeaphenol by X-ray analysis[5] has revealed its structure as a complex polyphenol (III) with four stilbene units linked to one another; this is in agreement with mass spectral data. 3,5,4′-Trihydroxy stilbene (resveratrole) seems to be involved and this is one

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[1] R. MADHAV, T. R. SESHADRI and G. B. V. SUBRAMANIAN, *Tetrahedron Letters* **31**, 2713 (1965).

[2] CH. B. RAO, T. V. PADMANABHA RAO and V. VENKATESWARLU, *Current Sci.* (*India*) **32**, 544 (1963).

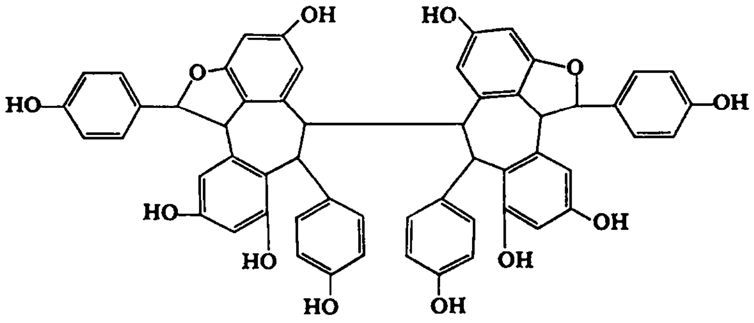
[3] P. COGGAN, N. F. JANES, F. E. KING, T. J. KING, R. J. MOLYNEUX, J. W. W. MORGAN and K. SELLARS, *J. Chem. Soc.* 406 (1965).

[4] R. MADHAV, Ph.D. Thesis, p. 161. University of Delhi (1965).

[5] P. COGGAN, T. J. KING and S. C. WALLWORK, *Chem. Commun.* 439 (1966).

of the common stilbene systems occurring in Nature; as has been already discussed.[6] the resorcinol part is derived from a C_8 unit and the phenol part from a C_9 unit.

Barks of *S. talura* and *S. robusta* on ether extraction yield hopeaphenol.



(III)

CONCLUSION

The polyphenol isolated from *Shorea talura* and *S. robusta* belonging to the family Dipterocarpaceae has now been identified as hopeaphenol originally found in *Hopea odorata* and *Balanocarpus heimii.* Therefore, its occurrence should be considered characteristic of this family.

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[6] T. R. SESHADRI, *Current Sci. (India)* **26**, 310 (1957).