

OCCURRENCE OF O-METHYL-DROSOPHILIN A IN FOMES FASTUOSUS LÉV.

Pratap Singh and S. Rangaswami

Advanced Centre for the Chemistry of Natural Products,
University of Delhi, Delhi.7, India

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While studying the petroleum ether extract of the wood rotting fungus Fomes fastuosus Lev. (collected in Madhya Pradesh, India) by chromatography over neutral alumina, a compound (colourless needles from acetone) m.p. 164-66° was obtained from the petroleum ether-benzene (9:1) eluate (yield - 0.24% calculated on weight of fungus). It analysed for $C_8H_6O_2Cl_4$, and contained two methoxyl groups and four chlorine atoms. It showed no optical rotation, burned with a sooty flame and showed aromatic absorption in I.R. and U.V. spectra. Its N.M.R. spectrum showed only a single sharp signal at 3.9 p.p.m. (characteristic of methoxy protons). From these data it could be inferred that the compound might be 1,4-dimethoxy-2,3,5,6-tetrachlorobenzene (tetrachlorohydroquinone dimethyl ether, I). A search through the literature¹ showed that a compound with this structure had been prepared as a derivative of drosophilin A (IV) [a substance having antibiotic properties which has been isolated from the insect Drosophila substrata (Batsch) Quel. and from the fungus Psathyrella conopilea (Fr.)

Pearson et Dennis (Psathyrella subatrata (Batsch ex Fr.) Quel.)] by methylation, and also by complete synthesis.



- I $R_1 = R_2 = \text{CH}_3$
 II $R_1 = R_2 = \text{H}$
 III $R_1 = R_2 = \text{COCH}_3$
 IV $R_1 = \text{H}, R_2 = \text{CH}_3$

This substance was therefore synthetically prepared now by a slightly modified procedure, by chlorination of p-benzoquinone to chloranil² (conc. HCl-H₂O₂), reduction (Zn-HCl) and methylation (CH₂N₂). The natural sample from Fomes fastuosus and the synthetic one were identical in all respects and their I.R. spectra were perfectly superimposable.

For confirming the identity further, the quinol (II), m.p. 225-28° obtained by demethylation of the natural sample with anhydrous aluminium chloride in benzene, and its diacetate (III) m.p. 252-54° were compared with the synthetic quinol and its diacetate. The melting points were identical, the mixed melting points were undepressed and the spectra of the respective pairs of substances were also completely superimposable. Though drosophilin A has been known as a natural product, its O-methyl ether has not been isolated from any natural source so far and has now been isolated from a fungus.

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