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THE STRUCTURE OF CEROPLASTOL II A SESTERTERPENIC ALCOHOL ISOLATED FROM INSECTS WAX*

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We have previously reported the isolation of ceroplastol I, II and of ceroplasteric and albolic acids. [1,2]

These compounds are believed to be the first examples of C_{25} terpenoids in insects.

The alcohol, which we have named ceroplastol II ($C_{25}H_{40}O$) (I), was obtained by saponification of its 3,5 dinitrobenzoate [1] (m.p.116-8°, [α] +80).

The nmr spectrum** of ceroplastol II showed the following signals: at 0.70 (s) and 0.79 (d, J = 6.5 cps) for the C_{11}, C_{15} methyl groups at 1.65 (s) and 1.55 (s) due to the vinylic methyl groups at C_3, C_7 and C_{19}; 3.65 (broad signal) for the C_6 allylic proton and 3.86 (s) attributed to the methylene suporting the primary hydroxyl group. The signals due to the two vinylic proton at C_6 and C_{18} overlapped and appeared together at 5.30 (t_r, J = 7).

The ceroplastol II showed absorption at 3350, 1670, 835 and 860 cm^{-1} in the infrared spectrum.

Ceroplastol I (II), whose molecular structure and absolute configuration have been determined by X ray crystallographic analysis of its 4-p-bromobenzoate [3] was correlated with ceroplastol II in the following manner: Ceroplastol I (II) was acetylated with acetic anhydride in pyridine and after treatment of the acetate (IIa) with toluene p-sulfuric acid in acetone afforded the acetate Ia. The alkaline hydrolysis of this acetate gave the ceroplastol II (I), whose 3,5 dinitro benzoate was identical with the same derivative obtained from natural ceroplastol II (I).

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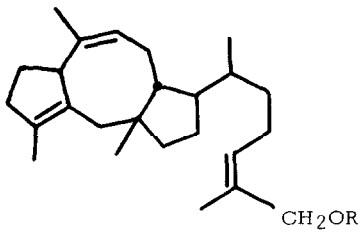
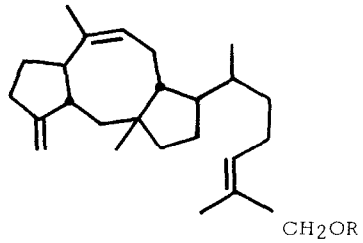
** Chemical shifts are given in δ values relative to tetramethylsilane.



I R = H
Ia R = Ac



II R = H
IIa R = Ac

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