

mechanism of this reaction in the various organic solvents investigated⁵

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Steroids from the Seaweed *Gracilaria corticata*

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Chemical constituents of the marine alga, *Gracilaria corticata* are under investigation in this institute as part of the studies on biodynamic compounds from marine organisms. Analysis of the neutral fraction of the methylene chloride extract of the alga led to the isolation of a sterol, identified as cholesterol on the basis of its chemical and spectroscopic characteristics. Mass spectrum and HPLC analysis indicated the presence of dehydrocholesterol, dihydrocholesterol and C₂₈-steroid as minor impurities.

THE presence of sterols in the marine algae has been reported by several workers¹⁻³. However, a survey of the literature showed that so far no work has been done on the chemical constituents

of the red seaweed, *Gracilaria corticata*. As a part of the project on biodynamic compounds from organisms, we had an opportunity to examine this material and we report our findings on the isolation of cholesterol from this alga.

Dried and powdered alga (5 kg) was extracted with methylene chloride at room temperature. Removal of the solvent left a waxy residue which was fractionated into acidic, basic and neutral fractions. The neutral fraction (13 g) was chromatographed over alumina (350 g). Elution with benzene gave fractions containing hydrocarbons and a crystalline solid. Rechromatography over silica gel and repeated crystallizations in ethanol gave cholesterol (3 g) as colourless platelets, m.p. 146° (lit.⁴ m.p. 148-49°), the identity of which was confirmed by comparison with an authentic sample; acetate, m.p. 113° (lit. m.p. 113-14°). The mass spectrum showed that the sample contains peaks at *m/e* 384 (dehydrocholesterol), 388 (dihydrocholesterol), 400 (C₂₈-steroid) in addition to the peak at 386 due to molecular ion of cholesterol. However, HPLC analysis indicated that these minor impurities are only about 5% of the steroid fraction.

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Letters to the Editor

Synthesis of 7-Isobutyl-9-methyl-11(H)-oxonaphtho[2,1-a]fluorene — A Rectification

THE recent paper of Nasipuri *et al.*¹ has established unequivocally the structure of the ketone (1b) previously synthesized by them² and also the one derived from second Diels hydrocarbon. In view of this it should be noted that our synthetic ketone³ is different from the oxidation product of second Diels hydrocarbon. Since our synthetic

ketone is different, its structure needs revision. Further work is being undertaken.

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