A New Glycoside from *Furcellaria fastigiata*

**BENGT LINDBERG**

*Organisk-chemiska Institutionen, Kungl. Tekniska Högskolan, Stockholm, Sweden*

As part of our investigations of the low-molecular carbohydrates in algae, the red alga *Furcellaria fastigiata* has been investigated. The glycerol α-galactoside, floridoside, first isolated by Colin and Guéguen from *Rhodymenia palmata* and recently shown by Putman and Hassid to be 2-glycerol α-D-galactopyranoside, was obtained. In addition to this substance another carbohydrate, slower than floridoside on the carbon column and with an $R_f$ value in the disaccharide region, was isolated. It did not crystallise but was purified via its highly crystalline acetate derivative. It was non-reducing and on hydrolysis yielded galactose, mannosone and glycerol, the proportions of which, determined by quantitative paper chromatography, were 1:1:1. The mannosone and galactose were characterised as the phenyl hydrazide and α-methylphenyl hydrazone, respectively. As floridoside was found in the same plant, it was probably a mannoside of this substance, the high specific rotation of the acetate indicating an α-mannoside. On periodate oxidation it consumed only 2 moles of oxidant, with the formation of 1 mole of formic acid, hence the hydroxyl group on carbon atom 3 in the galactose must be glycosidically linked and the substance should have the structure I.

This was finally shown by a degradation according to Barry, i.e. treatment of the periodate oxidised glycoside with phenyl hydrazine, when the oxidised units are split off. Floridoside, identical to an authentic specimen, was obtained in a satisfactory yield (50%), in agreement with the postulated structure.

3-Floridoside α-mannoside nonacetate: M.p. 153—154°, $[\alpha]_D^0 +103^\circ$ (Chloroform, $c = 2$). (Found: C 49.6; H 5.52. Calc. for $C_{16}H_{24}O_{18}$ (749.7): C 49.9; H 5.85.)

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