

1. Eliel, E. L. and Kofron, J. T. *J. Am. Chem. Soc.* **75** (1953) 4585.
2. Hadzi, D. and Sheppard, N. *Proc. Roy. Soc. (London)* **216** (1953) 247.
3. Gore, R. C. and Petersen, E. M. *Ann. N. Y. Acad. Sci.* **51** (1949) 924.
4. Duncanson, L. A. *J. Chem. Soc.* **1952** 1753.
5. Schiedt, U. and Reinwein, H. *Z. Naturforsch.* **7 B** (1952) 270.

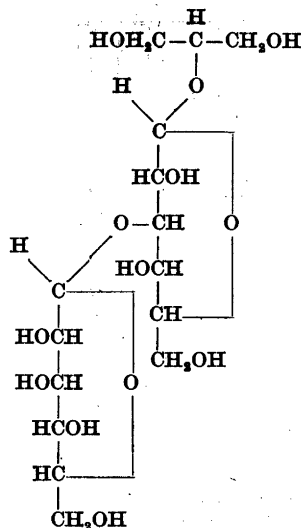
Received May 20, 1954.

A New Glycoside from *Furcellaria fastigiata*

BENGT LINDBERG

Organisk-kemiska 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 Guéguen¹ from *Rhodymenia palmata* and recently shown by Putman and Hassid² 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, mannose and glycerol, the proportions of which, determined by quantitative paper chromatography³, were 1:1:1. The mannose and galactose were characterised as the phenyl hydrazone 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.



I

This was finally shown by a degradation according to Barry⁴, *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 nonaacetate: M.p. 153–154°, $[\alpha]_D^{20} +103^\circ$ (Chloroform, $c = 2$). (Found: C 49.6; H 5.52. Calc. for $C_{23}H_{46}O_{22}$ (749.7): C 49.9; H 5.85.)

The author is indebted to *Statens Naturvetenskapliga Forskningsråd* for financial support and to *Institut for Tang- og Tareforskning*, Trondheim, for a generous gift of the alga.

1. Colin, H. and Guéguen, E. *Compt. rend.* **191** (1930) 163.
2. Putman, E. W. and Hassid, W. Z. *J. Am. Chem. Soc.* **76** (1954) 2221.
3. Hirst, E. L. and Jones, J. K. N. *J. Chem. Soc.* **1949** 1659.
4. Barry, V. C. *Nature* **152** (1943) 537.

Received May 21, 1954.