1-Mannitol β-glucoside 0.11 g (0.045 %). M. p. 138–139°.

1,6-Mannitol di-(β-glucoside), about 5 mg (0.002 %). Amorphous, chromatographically indistinguishable from authentic material.

The melting points of all the crystalline compounds were undepressed on admixture with authentic specimens.

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Low-molecular Carbohydrates in Algae

VIII *. Investigation of Two Green Algae

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Two green algae, one marine, *Enteromorpha compressa*, and one fresh water alga, *Chlorella*, strain Tx 14–10, have been investigated, using the same technique previously applied to brown algae (Part V [1]).

Sucrose was isolated in good yield from both algae and evidence for the occurrence of *meso*-inositol in the two algae was also obtained. A small amount of mannitol was isolated from *E. compressa*, but this might have come from contaminating brown algae. From the *Chlorella* maltose and maltotriose were isolated. These substances certainly have some connection with starch, either as precursors in its biosynthesis or as products of a post-mortal, enzymatic hydrolysis. In addition, the presence of several unidentified substances, occurring in small amounts, was demonstrated by paper chromatography.

Enteromorpha compressa (250 g), kindly supplied by Marinbotaniska Institutionen, Göteborg, was extracted and worked up as previously described for the brown algae [1]. The carbohydrate fraction was separated on a carbon column, using the gradient elution technique. Mannitol (90 mg), m. p. 158–162° and sucrose (1.4 g), m. p. 178–179° were isolated, and the presence of *meso*-inositol demonstrated by paper chromatography.

Chlorella, strain Tx 14–10, (160 g), kindly supplied by Docent L. E. Enebo, Kungl. Tekniska Högskolan, Stockholm, was refluxed for 4 hours with 75 % ethanol (2 000 ml), the extract separated by centrifugation and the residue re-extracted and treated in the same manner. The combined extracts were worked up as above, separated on a carbon column and further fractionated on thick filter paper. The following substances were isolated:

meso-Inositol (0.22 g), m. p. 216–217°. Acetate, m. p. 209–211°. Sucrose (3.8 g), m. p. 182–183°.

Maltose (80 mg) was isolated by further separation of a fraction from the carbon column on thick filter paper. It was amorphous and not quite pure, $[\alpha]_D^{20} + 110°$ (c, 2.0 in water), but was chromatographically indistinguishable from authentic maltose and on hydrolysis yielded glucose only.

Maltotriose (270 mg) was isolated from another fraction in the same manner. It was also amorphous and not quite pure, $[\alpha]_D^{20} + 139°$ (c, 2.0 in water), but chromatographically indistinguishable from authentic maltotriose and on partial hydrolysis yielded glucose and maltose (identified by paper chromatography).

The melting points of all the crystalline compounds were undepressed on admixture with authentic materials.

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