

on mannose indicate that the changes in the compositions of the solutions may involve changes in the proportions of the ring isomers. Rapid measurements at 0° of the optical rotations of α -*d*-gulose \cdot CaCl $_2$ \cdot H $_2$ O show that the mutarotation previously reported is preceded by a short period in which the change in rotation is less rapid than later on. This is evidence that the mutarotation is more complex than the reversible interconversion of only two isomers. It is noted that a new gulose calcium chloride compound has been separated. It corresponds to the formula (C $_6$ H $_{12}$ O $_6$) $_2$ CaCl $_2$, and gives $[\alpha]_D^{20} +34^\circ$ (1.4 minutes after solution in water), constant -167° (3.3292 g./100 cc.).

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CONCENTRATION OF THE HEAVY HYDROGEN ISOTOPE

Sir:

In connection with investigations on some commercial chromium plating baths, the writers have determined the specific gravities of the water contained therein.

The waters from nine baths give specific gravities varying from 1.00002 to 1.00064. These baths have been operated for varying periods of time, the maximum being about three years.

Increases in specific gravity on prolonged electrolysis of water have been reported by Washburn and Urey [*Proc. Nat. Acad. Sci.*, **18**, 496 (1932)] and Lewis [THIS JOURNAL, **55**, 1297 (1933)] and by them attributed to the concentrating of the heavier isotopes of hydrogen. On this basis the highest specific gravity (1.00064) observed by us indicates the presence of about 0.6% of water containing the heavier hydrogen isotope in one of the samples examined.

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THE PREPARATION OF CRYSTALLINE β -*l*-ALLOSE, A NEW ALDOHEXOSE, FROM *l*-RIBOSE BY THE CYANOHYDRIN REACTION

Sir:

In the extension of our studies with *l*-ribose, the synthesis of which from *l*-arabinose through *l*-arabinal was recently announced [THIS JOURNAL, **54**, 4749 (1932)], we have undertaken the preparation of the unknown aldohexoses, *l*-altrose and *l*-allose, by the cyanohydrin reaction. Our investigations have been guided in large measure by the valuable contribution of Levene and Jacobs [*Ber.*, **43**, 3141 (1910)], who prepared the crystalline