

of the hexamethylene ring. 'Dextro' and 'lævo' menthone are shown to be not true optical isomers. Several other cases of rotation change were noted, and found to be due in general to chemical alteration of the nucleus.

The author emphasized the value of geometric formulæ, and especially a modification of the Kekulé-Baeyer tetrahedral models, and showed that certain plane formulæ, which have been seriously discussed, are impossible of construction by the models, and must be considered as, at least, improbable.

The Determination of Formaldehyde: R. H. WILLIAMS.

The author gave the results of a critical study of four of the more commonly used methods for the determination of formaldehyde. Two of these, the 'iodimetric' and the 'hydrogen peroxide' being oxidation methods, while the other two, the 'potassium cyanide' and Leglers's 'ammonia' methods, are based upon condensation reactions. The oxidation methods were found in all cases to give noticeably higher results than the condensation methods. Test analyses made with the addition of alcohol, aldehydes and acetone indicated that the difference was not due to the influence of other substances present in the formaldehyde solution, but to the reactions on which the methods are based. Paraformaldehyde may be determined as readily as formaldehyde, with any of the four methods mentioned. The formation and properties of the hexamethylene-tetramine, on which the ammonia method depends, will be studied further.

H. C. SHERMAN,
Secretary.

DISCUSSION AND CORRESPONDENCE.

ASYMMETRON LUCAYANUM IN BERMUDA.

BESIDES establishing the fact that *Amphioxus caribæus*—known since 1876 to exist at the Flatts—is found in numerous localities in these islands, the work of the station this year has resulted in the discovery that another representative of this very interesting group of Chordates—*Asymmetron lucayanum*—is also found in these waters. Especial credit for the discovery of this more rare ani-

mal is due to Mr. Louis L. Mowbray, a young Bermudian naturalist in the employ of the station.

E. L. MARK,
Director.

BERMUDA BIOLOGICAL STATION,
FLATTS, BERMUDA, July 22, 1904.

THE ASCENT OF WATER IN TREES.

TO THE EDITOR OF SCIENCE: It would not be necessary to notice at all the note on 'The Ascent of Water in Trees,' published in your issue for July 22, were plant physiologists and physicists alone to be considered. A single remark, for the benefit of those who might be misled, will suffice to show the futility of the theory proposed. The structures at the lower end of the conducting tissues are essentially identical with those at the upper end. If at the upper end the 'water ducts are protected from direct atmospheric pressure by their structures,' they are equally shielded from it below.

C. R. BARNES.

THE UNIVERSITY OF CHICAGO.

CONCERNING SPECTACLES.

RATHER an extensive literature exists on the question raised by Dr. C. Barck in his paper on 'The History of Spectacles' (SCIENCE, XX., July 8, 1904, p. 50) as to whether Nero was near-sighted and viewed gladiatorial combats with glasses. The passages in Pliny's 'Natural History' which have furnished food for this discussion occur in xi. 54, and xxxvii. 16; and the best interpretation thereof known to the writer of the present paragraph is found in Dr. August Nies's interesting thesis 'Zur Mineralogie des Plinius,' pp. 18-20 (Mayence, 1884). The claims of other alleged inventors of spectacles besides those mentioned by Dr. Barck are considered more or less fully in Beckmann's 'History of Inventions,' and in J. Fiedler's 'Geschichte der Erfindung der Fernröhre.'

C. R. E.

SPECIAL ARTICLES.

THE FORMATION OF TOXIC PRODUCTS BY VEGETABLE ENZYMES.

No subject in the domain of plant chemistry has aroused more discussion of late than the physiological rôle of the various enzymes.