

sugars were found to be ascribable entirely to the mutual influence of the two *cis* hydroxy groups on C<sub>2</sub> and C<sub>3</sub>. (b) The negative rotations of tetramethyl  $\gamma$ -mannonolactone in organic solvents were explained by the nature of the rotatory dispersion, which requires for its representation a two-term Drude equation with terms of opposite sign, the induced term being positive both in water (where the lactone rule is obeyed) and in organic solvents. (c) The sign of the induced term in the rotations of amides can be correlated with the configuration of C<sub>2</sub> for those substances which obey the amide-rule, but exceptions occur which necessitate special explanations.

Mr. E. G. Cox gave an account of recent progress in the crystallography of carbohydrates. X-ray studies of a number of simple and methylated sugars lead to the conclusion that the six-atom ring in the pyranoses, unlike the hexamethylene ring, does not possess the Sachse form, but contains five nearly co-planar carbon atoms, the oxygen atom being displaced out of their plane. Various chemical and physical properties of carbohydrates find a satisfactory explanation in terms of this ring conformation; for example, there is much evidence that hydroxyl groups which, according to the Haworth structural formulæ, are *cis*, are actually contiguous in space. This is true for the ring form deduced from the X-ray data, but it is by no means necessarily so with a Sachse ring.

The configuration on the first carbon atom of the cyclic forms of the sugars is not established by the same rigid methods which are applied to the remainder of the molecule; the confirmation by X-ray methods of the configurations usually ascribed to the  $\alpha$ - and  $\beta$ -forms of glucose is therefore a matter of considerable importance.

## Educational Topics and Events

CAMBRIDGE.—At Emmanuel College, Dr. T. S. Hele, fellow of the College and University lecturer in biochemistry, has been elected into the mastership.

A. C. Bartlett, of Emmanuel College, has been approved for the degree of Sc.D.

P. H. Blair, of Emmanuel College, has been appointed an assistant lecturer in archæology and anthropology.

EDINBURGH.—The Rockefeller Foundation has made a grant of £1,500 to the Department of Medical Chemistry, to provide for the expenses of Prof. Barger's research work on vitamin B<sub>1</sub>, for a period of three years from October 1935.

It has been agreed to offer accommodation in the University for the meeting of the International Union of Geodesy and Geophysics, which is to take place in Edinburgh on September 15–26, 1936.

SHEFFIELD.—The following appointments have recently been made: Prof. C. J. Patten, formerly professor of anatomy, and Prof. Miles H. Phillips, formerly professor of obstetrics and gynaecology, as emeritus professors; Dr. H. A. Krebs, as lecturer in pharmacology; Mr. H. E. Collins, as lecturer in mining; Dr. M. Ritchie, as assistant lecturer in chemistry; Mr. J. Harwood, as research assistant in fuel technology; Dr. J. W. Rodgers, as Iron-mongers' Company research fellow (for one year).

## Science News a Century Ago

### Meeting of the Medico-Botanical Society

THE first general meeting of the session for 1835–36 of the Medico-Botanical Society was held on November 10, Earl Stanhope being in the chair. After the reading by Dr. Sigmond of an eulogium on the character of the late Gilbert Burnett, professor of botany to the Society, Mr. C. Johnson delivered a lecture on the importance of botany to medicine. He contrasted the present knowledge with that of the practitioner of former days, and dwelt on the necessity of giving to the vendor of drugs an education superior to what they had and of making the study of botany indispensable.

### The Paris to St. Germain Railway

THE first railway to be authorised in France was that from Paris to St. Germain, and on November 14, 1835, the *Athenæum* said of this line that it "is to commence near the Church de la Madeleine on the Boulevards, and afterwards pass through a tunnel under the Commune of Les Batignolles Monceaux. This tunnel will be 907 yards in length. There are to be three stations for receiving and delivering luggage. The number of bridges or viaducts to be erected over streets and roads, between the point of departure and the Seine will be twelve. Altogether, it is considered that this railroad will be one of the best constructed, and most useful of any yet projected, not excepting those now in progress in England. It is expected, that the steam carriages on this road will be able to travel at the rate of thirty miles an hour, and according to this calculation, the distance between Paris and St. Germain will be performed in twenty-four minutes. It now occupies one hour and forty minutes."

### Darwin at Tahiti

ON November 15, 1835, H.M.S. *Beagle* arrived at Tahiti, where she remained until November 26, when she sailed for New Zealand. Both Capt. FitzRoy and Darwin wrote interesting accounts of the island and its people, and Darwin said:

"I was pleased with nothing so much as with the inhabitants. There is a mildness in the expression of their countenances which at once banishes the idea of a savage; and an intelligence which shows they are advancing in civilisation. . . . On the whole, it appears to one that the morality and religion of the inhabitants are highly creditable." Of those who attacked the work of the missionaries among the islanders and its effect, he said: "They forget, or will not remember, that human sacrifices, and the power of an idolatrous priesthood—a system of profligacy unparalleled in any other part of the world—infanticide a consequence of that system—bloody wars, where the conquerors spared neither women nor children—that all these have been abolished; and that dishonesty, intemperance, and licentiousness have been greatly reduced by the introduction of Christianity. In a voyager to forget these things is base ingratitude. . . ."

On November 26, when the ship sailed, Darwin wrote: "In the evening, with a gentle land-breeze, a course was steered for New Zealand; and as the sun set, we had a farewell view of the mountains of Tahiti—the island to which every voyager has offered up his tribute of admiration."