

for Lodgings. The Committee will think it right to pay regard to economy, as well as convenience, in these arrangements." Without doubt the present local committee shares this aspiration; but members will not fail to take cognisance of a footnote to the above announcement, which appears in the

Report for 1831: "On Tuesday a public dinner was provided at Twelve Shillings a Ticket; on the other days, during the session, ordinaries at from Five to Seven Shillings a head: venison, game, and fruit being contributed. . . ." In this respect at least there need be no fear that history will repeat itself.

Obituary

M. GUILLAUME BIGOURDAN

THE death of M. Bigourdan has taken from us a veteran astronomer, well known to many of his English colleagues. He attended the meeting of the Paris Academy of Sciences on Feb. 22, in his usual health, but died suddenly on Feb. 28. Born at Sistels (Tarn-et-Garonne) on April 6, 1851, M. Bigourdan graduated in the *École d'Astronomie* in Paris, and was in 1877 appointed by M. Tisserand as an assistant in the Observatory at Toulouse. Here he was employed on meridian astronomy and devoted his leisure to historical studies in astronomy, which interested him all his life.

In 1879, M. Bigourdan was appointed assistant at the Paris Observatory and had charge of the large equatorial. Here he spent many years in the most assiduous observations of the positions of nebulae and clusters. In this very trying work he determined the positions of the known nebulae with all the precision possible from visual observations, discovered many new ones, and incidentally made measures of comets and double stars. The intention underlying these arduous observations was to provide such accurate positions of the nebulae that future astronomers might detect small movements in these very distant objects. The results were published in the *Annales* of the Paris Observatory, and have since been collected in five large volumes, consisting of about three thousand pages. The gold medal of the Royal Astronomical Society was awarded to M. Bigourdan in 1919 for this monumental work.

Owing to differences between French and English observers in the values for the longitude of Paris, a re-determination was made in 1902 by M. Bigourdan and M. Lancelin working simultaneously with Sir Frank Dyson and Mr. Hollis. The results were in satisfactory accordance, and the mean differs by only 0.01^s from the recent

determination made by 'wireless' transmission of time-signals. M. Bigourdan was from its commencement interested in the transmission of time by wireless, which is due to so great an extent to the initiative of General Ferrié. When Paris became the centre of the international time service, he was, until 1928, director of the Bureau.

In 1882, M. Bigourdan took part in the observations of the transit of Venus in Martinique, and he was a member of eclipse expeditions to Senegal in 1892, to Spain in 1900, and to Tunis in 1905. He was for many years a member of the Bureau des Longitudes, and enriched many volumes of the *Annuaire* by articles on astronomical topics. His most important work on the history of astronomy was the bringing out of the "*Annales célestes du dix-septième siècle*" by A. G. Pingré. This work was completed in manuscript in 1791 and a beginning made of its publication. This went on slowly until the death of Pingré and then ceased. The manuscript was lost, but was found by M. Bigourdan under a wrong designation in the Paris Observatory. It was printed in 1901 under the auspices of the Academy of Sciences.

M. Bigourdan was courteous and affable, and always put his point of view with vigour and vivacity. An incident which took place at the meeting of the International Astronomical Union at Rome in 1922 may be recalled. The discussion was bilingual. One of the British delegates spoke in French, which his British colleagues all understood. Whether M. Bigourdan had not been listening, or whether he wished maliciously to indicate that the French was not perfect, I do not know, but he amused his British colleagues by calling out "Traduction".

He married a daughter of Admiral Mouchez, and they had nine children, to whom we would offer our respectful sympathy. F. W. DYSON.

News and Views

Oliver Heaviside's Work

AT a meeting of the Institution of Electrical Engineers on April 21, Dr. W. E. Sumpner gave the annual Kelvin Lecture, choosing as his subject the work of Oliver Heaviside. Before the lecture, the Faraday medal, the highest honour the Institution can give, was presented to Sir Oliver Lodge. Dr. Sumpner said that the work of Heaviside blended telegraphy, the earliest activity of electrical engineers, with radio communication, their latest activity. The older electricians were in the habit of applying Kelvin's formulæ, which apply only to submarine cables, to telephony. Heaviside's idea of increasing the self-

induction of the line was diametrically opposed to the prevailing practice. The whole industry was in the hands of a government department very properly reluctant to try expensive experiments. Heaviside's mathematics were not easy to understand and wanted laborious study even by professed mathematicians. This was why some of his theories, although suggested several years before they were practically tried in France and America, were never actually put to the test in Great Britain. His 'distortionless' circuit enabled signals to be transmitted at high speed in submarine cables and made telephony through long cables possible. His work on the cable problem did