WE have received from Mr. A. C. Cossor, of Farringdon-road, E.C., an illustrated catalogue of Röntgen ray tubes, electrical instruments and fittings, and small electric lamps for all purposes. The catalogue should be of interest to physicists, medical men and others interested in high vacuum work.

THE fourth part of the second volume of "The Fauna and Geography of the Maldive and Laccadive Archipelagoes: being the Account of the Work carried on and of the Collections made by an Expedition during the years 1899 and 1900," edited by Mr. J. Stanley Gardiner, has been published by the Cambridge University Press. This part contains reports on the Alcyonaria of the Maldives by Prof. S. J. Hickson, F.R.S.; on marine crustaceans by Major Alcock, F.R.S., and Prof. H. Coutière; on hydroids by Mr. L. A. Borradaile; on Rhynchota by Mr. W. L. Distant; and notes on parasites by Mr. A. E. Shipley, F.R.S.

MESSRS. TEUBNER, of Leipzig, have just issued a fifth edition of Schlömilch's "Uebungsbuch zum Studium der höheren Analysis," part i., of which the first edition appeared in 1868, and a second edition of Dr. A. Föppl's "Einführung in die Maxwell'sche Theorie der Elektrizität," the first edition of which appeared in 1894. Of these, the former, which in England would be called a "treatise on the calculus," has been revised by Prof. E. Naetsch, of Dresden, and several new paragraphs on transformation of coordinates have been added. The work of editing Dr. Föppl's treatise has been undertaken by Dr. M. Abraham, who is preparing a second volume dealing with "theory of electromagnetic radiations."

OUR ASTRONOMICAL COLUMN.

JUPITER'S SEVENTH SATELLITE.—*Circular* 74 from the Kiel Centralstelle confirms the telegram received last week concerning the discovery of a seventh satellite to Jupiter.

It contains a message from Prof. Campbell in which he states that the object was discovered by Prof. Perrine, using the Crossley reflector. The position previously given, viz. position angle=62°, distance from Jupiter 21′, was that occupied by the satellite on February 25.6 (G.M.T.). The apparent motion was direct, and the orbit is considerably inclined to the ecliptic. This latest satellite has been under observation, with the Crossley reflector, since January 2, but no particulars of the observations, other than those for January 25, are given in the circular.

LONGITUDE OBSERVATIONS OF POINTS ON MARS.—*Bulletin* No. 14 from the Lowell Observatory contains the results of the longitude determinations of nearly sixty features on the surface of Mars made at Flagstaff during 1903. For each point the times of the several observations and the resulting longitudes are given, and these are followed by the mean value for the longitude and its probable error; the mean value for the latitude of each point is also given.

The longitudes were determined by noting the time of transit of each marking across the micrometer thread when the latter was placed parallel to the position angle of the polar axis, as given in Mr. Crommelin's ephemeris, and passing through the polar cap. As the thread obliterated the markings it became easier in practice to record the time at which the marking and the cap were equidistant from the thread.

Mr. Lowell has allotted a number to the result of each determination showing the relative weight to be attached to the value obtained.

OBSERVATIONS OF COMETS.—The comets 1904 *e* (Borrelly), 1904 *d* (Giacobini), and 1904 *a* (Brooks) have been regularly observed, at Lick, by Dr. R. G. Aitken, and the results are published in No. 69 of the Lick Observatory *Bulletins*.

Observations of comet 1904 *e* were made during the end of December and the beginning of January, and two sets of parabolic elements were computed from the results. Subsequent observations did not confirm these, and consequently Dr. Aitken computed elliptic elements from his observations of December 31, 1904, January 17 and 27, 1905. When the observational values were compared with the places calculated from these elements, the agreement was found to be satisfactory, and it seems probable that the comet is moving in an elliptical orbit with a period of about 7.3 years. An ephemeris based upon these elements and extending to March 31 is given, and shows that on March 11 the comet will be only 0.27 as bright as at the time of discovery, when it was variously estimated as being of the tenth or eleventh magnitude.

Comet 1904 *d* was observed on January 28, and the observation showed that the orbit published in *Bulletin* No. 67 needs very little correction. From the comet's appearance on that date it is evident that this object will soon be beyond the reach of all but the most powerful telescopes. An ephemeris extending to April 3 is given.

Observations of comet 1904 *a* were made with the 12-inch refractor by Messrs. Maddrill and Aitken during the period June 21–September 4, 1904, and the results are given in the same circular. A footnote by Dr. Aitken states that the comet was still visible in the 12-inch telescope on January 26, and an observation made on that date showed that Prof. Nijland's ephemeris is very nearly exact.

THE GOVERNMENT OBSERVATORY AT VICTORIA.—We have received the annual reports of the board of visitors and the director of the Victoria (Australia) Observatory for the years ending March 31, 1903, and 1904.

The reports show that the routine work connected with the meridian observations, the time service, the meteorological, magnetic, and seismological observations, and instrument testing was carried out as usual.

On the later date the taking of the catalogue plates for the astrographic chart, to the number of 1149, had been completed, whilst satisfactory progress had also been made with the other sections of the work. The measurement of both the Sydney and the Melbourne plates is being carried out at Melbourne, and on March 31, 1904, 239 Sydney plates containing 137,812 stars, and 522 Melbourne plates containing 151,343 stars, had been completely measured. A new measuring machine designed by Mr. H. C. Russell was finished, and its fitness was being investigated when the report was issued.

The director, Mr. P. Baracchi, states that the work of measuring the magnetograph curves and reducing all the magnetic observations made since 1868 is progressing satisfactorily, and that he hopes the results will be published within the next two or three years.

OBSERVATIONS OF SATURN'S SATELLITES.—The results of a series of observations of the relative positions of the seven inner satellites of Saturn are published in *Bulletin* No. 68 of the Lick Observatory. The observations were made by Prof. Hussey with the 36-inch refractor between August 3 and December 2, 1904, and in each case the position angle and distance of the satellite in regard to one of the other satellites are given.

BRIGHT METEORS.—Mr. R. L. Jones, writing from 3 King's Bench Walk, Temple, E.C., refers to three bright meteors observed on the nights of February 27 and 28. All the three appear to have started from the constellation Monoceros, and to have tracked thence in a north-westerly direction. A brilliant meteor was also seen at 12.10 a.m. on March 1, its brightness far exceeding that of Venus.

THE MAGNETIC SURVEY OF THE UNITED STATES.

THE report for the year ending June 30, 1904, on the magnetic survey of the United States and its outlying territories has lately been issued by the authorities of the Coast and Geodetic Survey, and contains a long list of field observations of the magnetic elements made with the usual completeness, supported by results obtained in five fixed observatories. Two of the latter are at Porto Rico and Honolulu respectively.

The new feature in the present report is that the survey has been extended to the neighbouring seas both on the Atlantic and Pacific sides of North America, and it records the successful observation at sea of thirty-four values of