

THE latest catalogue of second-hand books offered for sale by Mr. F. Edwards, 83 High Street, Marylebone, W.1, is No. 437 (November). It gives the titles, and in many cases descriptions, of upwards of 800 volumes on oriental matters, mainly Chinese and Japanese.

THE old-established firms of instrument-makers, T. Cooke and Sons, Ltd., of London, York, and Cape Town, and Troughton and Simms, Ltd., of London and Charlton, have amalgamated, and the joint business will be conducted under the name of Cooke, Troughton and Simms, Ltd.

WE have received from Messrs. A. Gallenkamp and Co., Ltd., of 19 and 21 Sun Street, Finsbury Square, London, E.C.2, Part I. of the seventh edition of their

catalogue of general chemical apparatus, including balances and weights. In addition to the ordinary requirements of the chemical laboratory, the catalogue includes some special features such as Mellor's porosity apparatus and a series of vacuum drying ovens.

THE "Collected Scientific Papers" by the late Dr. John Aitken, the final sheets of which were passed for press by Dr. C. G. Knott just before his death, will shortly be published by the Cambridge University Press. The volume will contain a biographical sketch of the author. "The Theory of Spectra and Atomic Constitutions," by Prof. Niels Bohr, will also be published by the Press in the near future. It is based on lectures delivered in Cambridge and deals with the application of the quantum theory to problems of atomic structure.

Our Astronomical Column.

THE LEONID METEOR SHOWER.—Mr. W. F. Denning writes that "The nights of November 13 and 15 were alone suitable for observation at the period of the Leonid display this year, and very few meteors appeared. Mr. J. P. M. Prentice watched the heavens on the night of November 15 between 5.45 and 12.45 and recorded only 44 meteors during the seven hours, of which three were Leonids. At Bristol the sky was watched at a later hour, but only one Leonid was seen between 13^h and 13^h 45^m, after which observations were discontinued. Mr. Prentice noticed several minor showers of which radiant points at 41°+29°, 42°+21°, 53°+13°, and 55°+84° were the most actively pronounced." The shower of Leonids was not expected to be abundant this year, as the parent comet (1866 I) will not return until 1933. It sometimes happens, however, that a moderately active display of Leonids occurs when the comet is far removed from perihelion, as in 1879 and 1888.

COMET NOTES.—Baade's Comet, 1922 c, was observed at Copenhagen on November 9 and at Cambridge by Mr. G. Merton, using the Northumberland Equatorial, on November 11. It has a fairly definite nucleus 10" to 20" in diameter, and a coma 1½' in diameter. The stellar magnitude is variously estimated at 9 and 10.5, the former being probably nearer the truth. The brightness is slowly diminishing, but the comet should be observable for some months. The following orbit is from observations on October 19, 28, November 11 :—

$$\begin{aligned} T &= 1922 \text{ Oct. } 27^{\text{h}} 25^{\text{m}} \text{ G.M.T.} \\ \omega &= 118^{\circ} 46' 3'' \\ \Omega &= 220^{\circ} 34' 2'' \quad 1922^{\circ} 0. \\ i &= 51^{\circ} 22' 3'' \\ \log q &= 0.35318. \end{aligned}$$

EPHEMERIS FOR GREENWICH MIDNIGHT.

	h.	R.A. m.	s.	N. Decl.	log r .	log Δ .
Nov. 25.	21	15	32	27° 20'	0.3579	0.3150
29.	21	25	36	26 20	0.3593	0.3222
Dec. 3.	21	35	39	25 21	0.3608	0.3297
7.	21	45	39	24 26	0.3625	0.3377
11.	21	55	35	23 33	0.3643	0.3400
15.	22	5	27	22 44	0.3663	0.3549

The comet is well placed in the evening sky, high up in the south-west; it is visible in moderate telescopes. The above path begins 3° S.E. of ζ Cygni, and ends 3° S. of ι Pegasi. It is important to observe it as long as possible, in order to detect any deviation from a parabola.

Mr. F. E. Seagrave has computed the two following orbits of Comet Pons-Winnecke from observations made respectively before and after perihelion passage in 1921 :—

T = 1921 June 12 ^h 9 ^m 16.5.	June 12 ^h 9 ^m 27.6.
$\omega = 170^{\circ} 17' 18''$.	$170^{\circ} 15' 56''$.
$\Omega = 98^{\circ} 6' 29''$.	$98^{\circ} 8' 19''$.
$i = 18^{\circ} 54' 37''$.	$18^{\circ} 56' 33''$.
$\log q = 0.017372$.	0.017409 .
$\mu = 592'' 888$.	$587'' 184$.
Period = 2185.9 days.	2207.1 days.

The next perihelion passage will be in June 1927. The conditions will be very similar to those in 1921, but the approach to the earth will probably be closer; search should again be made for meteors in that year, since these are evidently spread fairly widely around the comet's orbit. The perturbations in the present revolution are small, there being no approach to Jupiter.

REPORT OF THE PARIS OBSERVATORY FOR 1921.—This report shows that in spite of difficulties caused by the war there is quite a large output of work. The observations for three important star catalogues have been completed, namely, (1) The supplementary catalogue of Lalande stars; (2) that of 15,000 *étoiles de repère* of the Paris zone; (3) that of 3000 fundamental stars; they will be published in a few years. The work on the Astrographic Chart is approaching completion; the 2500 copper plates, 26 × 26 mm., will be carefully stored, as it is suggested that they may form a priceless record of the state of the heavens in an age long after the paper copies have perished. It is hoped that the Paris Astrographic Catalogue will be completed in four or five years.

It is noted that M. Krassowski of Varsovie has undertaken the calculation of the perturbations of Giacobini's Comet 1896 V which is expected early next year.

Full details are given of the system of Time signals, which are under the direction of M. Bigourdan. M. Hamy has been investigating the diffraction of the images of stars and hopes to apply his results to obtain an improved diameter of the sun.

Photography of stars by the extreme red rays has been carried out experimentally, and it is proposed to continue this work on Mont Blanc. The aim is to study the possibilities of daylight star photography. The report also deals with spectroscopic work on bright stars, the sun and chromosphere, and several stars have been photographed in three colours with colour screens.