

London, or by students before meetings of local associations during the same period: The James Forrest Medal, the James Prescott Joule Medal, and a Miller Prize to Mr. R. W. Mountain (London); and Miller Prizes to Messrs. H. S. Smith (London) and C. D. Crosthwaite (London), H. C. Toy (Birmingham), F. W. S. Hawtayne (London), E. G. Wilson (North Shields), and W. W. Davies (London).

THE various types of microscopes manufactured by Messrs. C. Baker, of 244 High Holborn, London, W.C., are described and illustrated in a recently issued edition of this firm's catalogue. Instruments suitable for use in biological, metallurgical, and mineralogical work are included, as well as simpler models for science students. With the view of obtaining greater facility of adjustment or increased rigidity or efficiency, modifications have been introduced in several of the firm's well-known models, and standardisation of parts has been effected wherever possible. Full details are given of all necessary optical equipment, including a series of orthochromatic eyepieces recently designed by Lt.-Col. Gifford to give an increased field. A very complete list of mechanical accessories and illuminating apparatus is also given. Amongst the photomicrographic apparatus may be mentioned the

Universal Geometric Slide Camera, designed by Mr. J. E. Barnard. In the design of this apparatus the geometric principle has been observed throughout, with the result that extreme rigidity can be obtained, and relative movement of any parts avoided when the apparatus is subjected to vibration.

MESSRS. Percy Lund, Humphries and Co., Ltd., hope to publish in December the Transactions, in four volumes, of the recently held World Power Conference. The work will include all the papers presented at the conference, and contain a synopsis of the discussions which followed the presentation of the papers. Most of the papers will be illustrated by maps, charts, diagrams, and reproductions of photographs.

WE learn from Messrs. Adam Hilger, Ltd., 75A Camden Road, London, N.W.1, that the firm has been entrusted with the manufacture of the interferometric apparatus with which the metre will be established in Japan, in accordance with the law passed in March 1921 by the Japanese Diet making the metric system compulsory in that country. The apparatus will also provide for the measurement of the 5-metre base, which is the foundation of the geodetic survey in Japan.

### Our Astronomical Column.

FINSLER'S COMET, 1924 *c*.—This comet has been well observed, and was of at least the fifth magnitude on September 22, when it was visible in considerable twilight. Dr. W. H. Steavenson traced the tail to a length of 15'. The following elements, by J. P. Möller and B. Strömgren, from observations on September 21, 22, 23, are near the truth.

$$\begin{aligned} T &= 1924, \text{ Sept. } 4.559 \text{ G.M.T.} \\ \omega &= 66^\circ 26.5' \\ \Omega &= 79 \quad 5.8 \\ i &= 121 \quad 59.8 \end{aligned} \left. \vphantom{\begin{aligned} T \\ \omega \\ \Omega \\ i \end{aligned}} \right\} 1924.0$$

$$\log q = 9.61047$$

#### EPHEMERIS FOR GREENWICH MIDNIGHT.

		R.A.	S. Decl.	log <i>r</i> .	log $\Delta$ .
Oct. 6.	15 <sup>h</sup> 12 <sup>m</sup> 6 <sup>s</sup>	7° 51'	9.9446	0.1688	
„ 10.	15 22 12	10 39	9.9804	0.2033	
„ 14.	15 31 0	13 2	0.0132	0.2347	
„ 18.	15 38 36	15 6	0.0433	0.2633	

The comet will be difficult to observe, being in the evening twilight, and low down. It is, moreover, fading rapidly.

RELATIVE NUMBERS OF STARS OF DIFFERENT SPECTRAL TYPES.—Many valuable papers on stellar statistics have been published. One of the latest is by K. G. Malmquist (K. Svenska vetenskaps. Handlingar, 3rd series, Band 1, No. 2) on the distribution of absolute magnitudes. The author adopts as his unit of distance the siriometer, which is a million astronomical units, or 4.85 parsecs. He gives as the number of stars of each type in a cubic siriometer in the neighbourhood of the sun:—B 0.005, A 0.033, F 0.300, G (giant) 0.006, (dwarf) 0.830, K (giant) 0.045, (dwarf) 2.100, M (giant) 0.004, (dwarf) more than 2.400; total 5.723.

The table brings out in a striking manner the vast excess of dwarfs over giants. The actual excess is probably much higher than the above figures indicate. Thus, Malmquist gives some 24,000 stars within 10 siriometers of the sun, of which 1 is of absolute magnitude -4, 7 of -3, the number per magnitude

increasing to about 4000 in the neighbourhood of mag. 8, and then falling off to 30 for mag. 12. This falling off is probably only apparent, and due to the manner of selection of the stars he used, as a study of the sun's nearest neighbours suggests that the absolutely faint stars are far more numerous.

It is to be hoped that a decision will be made between the siriometer and the parsec as units of stellar distance. The use of two different systems causes needless confusion.

ORBITS OF COMETS.—A Copenhagen circular gives the following elements of Comet 1924 *a* (Reid) from observations made at the Cape in March, April, May.

$$\begin{aligned} T &= 1924 \text{ March } 13.290 \text{ G.M.T.} \\ \omega &= 271^\circ 20'.19 \\ \Omega &= 113 \quad 59 \quad 5.7 \\ i &= 72 \quad 20 \quad 36 \end{aligned} \left. \vphantom{\begin{aligned} T \\ \omega \\ \Omega \\ i \end{aligned}} \right\} 1924.0$$

$$\log q = 0.24432.$$

An ephemeris is given for September, the estimated magnitude being 10. But as no observation is reported, it is probably fainter than this.

Prof. A. Dubiago, of Kasan, gives in *Astr. Nachr.* 5311 the following elliptical elements of the comet 1921 I, discovered by him.

$$\begin{aligned} T &= 1921 \text{ May } 4.87982 \text{ G.M.T.} \\ \omega &= 97^\circ 26' 32''.2 \\ \Omega &= 65 \quad 59 \quad 8.8 \\ i &= 22 \quad 21 \quad 20.0 \end{aligned} \left. \vphantom{\begin{aligned} T \\ \omega \\ \Omega \\ i \end{aligned}} \right\} 1921.0$$

$$\log q = 0.048102.$$

$$e = 0.939585.$$

$$\log a = 1.266949.$$

$$\text{Period, } 79.50 \text{ years.}$$

The comet was observed from April 24 until June 11, 1921, at eleven observatories. It was ill-defined, and the probable errors of the observations are large, but a parabolic orbit appears to be definitely excluded.

The comet is an eighth member of Neptune's family. Five of them, including Halley's, have been seen at more than one apparition.