

who live or learn by having to "put the weights on the balance-pan and weigh, weigh, weigh." Scientific workers may, indeed, be grateful that their really good balances outlive them by many years (we wonder which balance holds the time-record for continuous service!), but the makers can also be thankful that the ever-increasing development of scientific instruction in our schools and colleges ensures a perennial demand for their wares. They may even smile when they reflect that although these balances are used to illustrate the great law of indestructibility, their ephemeral "up and down" existence at the hands of schoolboys affords some welcome evidence to the contrary. Some of the illustrations in the catalogue are very well executed in natural colours; and the prices quoted compare very favourably with those demanded a few years ago. Thus the "little Becker balance," well known to nearly every schoolboy, is now obtainable at a price less than 50 per cent. above the pre-War price and 30 per cent. below the price asked in 1918; and the prices of the more costly balances appear to have fallen to a similar extent.

UNDER the title "Iter Turcico-Persicum," Dr. Fr. Nábělek is publishing the results of his botanical explorations, during 1909-1910, in the countries of Palestine, Mesopotamia, Kurdistan, and Armenia. Part I., *Plantarum Collectarum Enumeratio* (*Ranunculaceæ-Dipsacaceæ*), appears in the Publications de la Faculté des Sciences, de l'Université Masaryk, 1923.

MESSRS. SIDGWICK AND JACKSON, LTD., announce the publication in July next of "A Human Geography of Cambridgeshire," by J. Jones, the aim of which is to encourage the closer geographical study of the home area. It will endeavour to show how this may be done, by presenting the human geography of an English county, as deduced from an examination of maps and Government returns.

MR. JAMES THIN, South Bridge, Edinburgh, has just circulated Catalogue No. 200 of upwards of 5000 books of science offered for sale by him in new or second-hand condition. Practically all branches of science are represented. There is also a section devoted to scientific journals and proceedings of learned societies. The list may be had free upon application to the publisher.

MESSRS. W. HEFFER AND SONS, LTD., Petty Cury, Cambridge, have just started an interesting and useful serial publication entitled *The Recorder*, being a list of "remainders" on sale by them in new condition, at greatly reduced prices. It is, we understand, the intention of the publishers to issue the list some six times a year, and it will be sent post free upon request. Among the books offered for sale in No. 1 are "The Life of Alfred Newton" (the ornithologist), by B. F. R. Wollaston; "Wild Creatures of Garden and Hedgerow," by Frances Pitt; and "The Natives of the Loyalty Group," by E. Hadfield.

Our Astronomical Column.

THE TRANSIT OF MERCURY ON MAY 8.—Fine weather favoured the observation of this phenomenon at Greenwich, Ipswich, and several other stations. Egress took place $1\frac{1}{4}$ hours after sunrise; owing to the low altitude the limbs were somewhat tremulous, which made it difficult to time the contacts with accuracy, but they were concluded to have taken place some seconds earlier than the predicted times, which were, for Greenwich, $5^h 36^m 13^s$ A.M. for internal contact, and $5^h 39^m 12^s$ for external contact. Mr. E. H. Collinson, at Ipswich, made them $5^h 36^m 5^s$ and $5^h 38^m 30^s$. He noticed a "black drop" before internal contact, and also saw a somewhat lighter ring surrounding the planet when wholly on the sun's disc. This effect has been noted before, and is probably optical.

May transits usually occur at intervals of 13 and 33 years alternately, but on the present occasion there are two consecutive 33-year intervals, the dates being 1891, 1924, 1957. Several books state erroneously that there will be a transit in May 1937. There will, however, be an extremely near approach, and the planet may not improbably be seen with a spectroscope projected on the chromosphere.

DENSITY OF DWARF STARS.—Prof. Eddington's paper, in Mon. Not. Roy. Ast. Soc. for March, on stellar masses contains a suggestion as to a possible means of verifying the great density of certain dwarf stars which was indicated by his research. The companion of Sirius is of type F, and is of about the solar mass; if its surface brightness is really that associated with type F, its density must be very high and its diameter small. Calculation indicates that on these assumptions the Einstein spectral shift at its surface would correspond to a speed of some 20 km./sec. This is

an amount that should be quite easy to detect were it not for the disturbing effect of the very brilliant primary; it must be practically impossible to obtain a spectrum of the faint star without some diffused light of the bright one. The Mt. Wilson observers are attempting this research, and their conclusions will be awaited with interest.

STAR DISTRIBUTION.—The *Scientific Monthly* for May contains an article by Prof. Harlow Shapley, in which he discusses the bearing of recent researches on our view of the stellar system. He considers that this contains numerous subsidiary systems, one being the Cygnus star-cloud, on the edge of which he supposes the sun to be; the dark patches in Taurus, Ophiuchus, and Sagittarius are ascribed to nebulous clouds a few hundred parsecs from us. He goes on to determine the numbers of stars of different types in a million cubic parsecs; they are given as Giant M 22, Giant K 160, B $4\frac{1}{2}$, A 250, Dwarf F 680, Dwarf G 7600. The Dwarf K, M stars are presumed to be much more numerous than Dwarf G, but they are mostly too faint to come into our catalogues. The very small number of B stars indicates that only those of very exceptional mass can attain this type.

A diagram is given of the degree of galactic concentration for different types. This is practically zero for types F and G, showing that the stars considered are mostly dwarfs at a moderate distance; it is very pronounced for types B and A, and evident, though to a less extent, for K and M. It is welcome news that the Henry Draper Catalogue of Spectra is now being extended to much fainter stars in the galactic region. Thus in a field in Aquila, Miss Cannon has recorded 1567 spectra, of which less than 200 were previously classified.