

WE have received from the Pullman Publishing Company, New York, the first issue of a new monthly journal entitled *Testing*, which aims at becoming an international means of publishing papers on all aspects of the testing of materials. The January number, which is excellently printed and illustrated, contains some highly interesting articles, one by R. G. Batson on the fatigue of wires and wire-ropes; a German contribution to the theory of the hardening of duralumin; an account of the carbometer, a Swedish instrument for determining the carbon content of steels rapidly by a magnetic method; an attempt to arrive at a satisfactory method of comparing notched-bar impact tests by P. Fillunger of Vienna, and other papers on calibrating testing-machines, measuring Brinell hardness, investigating the quality of lubricating oils and bearing alloys, the testing of wood, and the detection of strain in glass by means of a simple polariscope. Although the multiplication of technical journals is to be deprecated, there is no doubt that this new publication will find an interested public.

WE learn from Messrs. H. K. Lewis and Co., Ltd., 136 Gower Street, W.C.1, that they, as well as Mr. A. F. Bird, 22 Bedford Street, W.C.2, have been appointed agents for the sale of the publications of the Chemical Catalog Company in the British Isles. They inform us that they have all the principal books in stock.

WE have received two further parts of the Dutch zoological periodical *Capita Zoologica*, which is issued under the editorship of Prof. E. D. van Oort, director of the State Museum of Natural History at Leyden.

The journal is devoted to the publication of transactions on systematic zoological subjects, each forming a complete work and sold separately. A number of transactions form a volume of about 500 pages with illustrations. One of the parts before us is by Dr. K. Friedrichs, who writes on "Ökologische Beobachtungen über Embiidinen." The other is by Mr. Masamitsu Oshima, on "Fauna Simalurensis Termitidæ." Both memoirs are of a high standard and are well illustrated.

MANY books of science figure in the spring announcement list of Messrs. Chapman and Hall, Ltd. Among them are the following: "Practical Microscopical Metallography," Dr. R. H. Greaves and H. Wrighton; "Testing of High Speed Internal Combustion Engines; with Special Reference to Automobile and Aircraft Types," A. W. Judge, dealing with the measurement of fuel consumption, density and calorific value, water for cooling, horse-power (brake and indicated), pressures and temperatures in the cylinder, and the commercial testing of automobile engines and chassis; "Merchant Ship Types: A Survey of the Various Units engaged in the Water Transport of People and Merchandise," A. C. Hardy, providing details of the principal characteristics of all types of steam vessels engaged in ocean and sea transportation of passengers and merchandise; "Gas Engine Operation, Testing and Maintenance," W. A. Tookey; "Electric Vehicles," C. W. Marshall; and "Coal and Oil-fired Boilers," Eng.-Comdr. F. J. Drover. We notice that Messrs. Chapman and Hall are now the English publishers of Sir J. J. Thomson's "The Electron in Chemistry," issued in America by the Franklin Institute, Philadelphia.

### Our Astronomical Column.

PLANETARY ROTATIONS.—Various attempts have been made to find some law connecting the periods of planetary rotation with each other. A fairly plausible one was given by Herbert Kaul in the *Physikalische Zeitschrift* for April 15, 1922 (also in *Astr. Nach.*), and further discussed by H. Troeger-Wohlau in the same publication, September 15, 1922. His formula involves diameter of planet, distance from sun, and a quantity K, which is a function of the inverse ratio of the orbital velocities of earth and planet. He is able to choose a value for K which gives correct rotation periods for Mars, Jupiter, and Saturn. But for Venus it gives  $26\frac{1}{2}$  hours, for Uranus  $13\frac{1}{2}$  hours, for Neptune 11 hours.

The last three results have been rendered improbable by recent observations. Mt. Wilson spectroscopic observations make a much longer period probable for Venus, and for Uranus and Neptune values of  $10\frac{1}{2}$  and  $7\frac{1}{2}$  hours have been deduced by fluctuations of light, in conjunction in the case of Uranus with spectroscopic observations.

Kaul's formula indicates for Mercury a rotation of eighty-eight days, equal to the revolution.

SPECTROSCOPIC PARALLAXES FROM THE DOMINION OBSERVATORY.—MESSRS. R. K. Young and W. C. Harper have made a new determination of the parallaxes of 1080 stars (*Journ. R.A.S. of Canada*, Jan. Feb. 1924). The work was conducted so as to be

quite independent of that at Mt. Wilson, the calibration of curves correlating line-intensities with absolute magnitude being done afresh, and many additional lines being selected for the purpose. The list of stars includes several of type A5, but the present paper deals mainly with those of types K and M. The spectral types have been redetermined, but accord very closely with those obtained at Mt. Wilson. There is a discussion as to the best method of combining the trigonometrical parallaxes so as to avoid systematic error in calibrating the curves; an important point is to have independent methods of dividing the stars into groups according to distance, and to use the mean of them.

The detailed results are given for 178 stars of "late" type. From K<sub>0</sub> to K<sub>2</sub>, there is no systematic difference from Mt. Wilson; from this point the Dominion Observatory absolute magnitudes begin to be brighter than the Mt. Wilson ones, the difference being very decided in type M. The greatest individual discordance is in  $\mu$  Cephei, the absolute magnitude of which was given as +0.3 at Mt. Wilson -4.9 here; this implies a distance some seven times as great as the former.

The new absolute magnitudes for Aldebaran and Betelgeuse are respectively 0.6 mag. and 0.4 mag. brighter than the Mt. Wilson ones. The parallax of Betelgeuse is given as 0.010", that of Arcturus 0.100".