Chandler gold medal in December 1927. Prof. Gomberg is well known for his work on free radicals and tri-valent carbon, and his lecture took the form of a review entitled "Radicals in Chemistry, Past and Present."

MESSRS. Galloway and Porter, Ltd., Cambridge, have just issued a catalogue (No. 163) of upwards of a thousand works on mathematical and physical science offered for sale by them. The prices asked appear very reasonable. The catalogue contains as an addendum particulars of a number of pamphlets on the same subjects, many out of print and not easily obtainable.

IN the autumn announcement list of Messrs. Methuen and Co., Ltd., we notice the following forthcoming books of science: "The Great Chemists," Dr. E. J. Holmyard; "Mine Ventilation: The Generation of the Air Current," Prof. H. Briggs; "X-rays," Dr. B. L. Worsnop; "The Applications of Interferometry," W. E. Williams; "Wireless," J. A. Ratcliffe; "Mechanical Aptitude: Its Existence, Nature, and Measurement," Dr. J. W. Cox; "Psychology and Modern Materialism," Prof. W. McDougall; "Psychology as Science: Its Problems and Points of View," H. P. Weld; and "The Desert Road to Turkestan," O. Lattimore.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An assistant master for chemistry and physics in the Wimbledon Junior Technical School for Boys—The Principal, Technical Institute, Gladstone Road, S.W.19 (Nov. 2). An Ackroyd memorial research fellow for textile industries in the University of Leeds—The Clerk to the Senate, University of Leeds (Nov. 3). A demonstrator in agricultural botany in the Department of Botany, the University, Leeds—The Registrar, The University, Leeds (Nov. 12). A professor of physiology at the King Edward Medical College, Lahore—The Inspector-General of Civil Hospitals, Punjab, Lahore (Dec. 1). A junior assistant under the Directorate of Ballistics Research, Research Department, Woolwich—The Chief Superintendent, Research Department, Woolwich, S.E.18. An assistant lecturer in physical chemistry in the University of Leeds—The Registrar, The University, Leeds.

Our Astronomical Column.

THE ROTATION PERIOD OF NEPTUNE.—J. H. Moore and D. H. Menzel have investigated this period by the spectroscopic method, using the 36-inch refractor at Lick (*Pubs. Astr. Soc. Pacific*, August). They placed the slit parallel to the planet's equator, as lately determined by Eichelberger and Newton from the shift in the node of the satellite; their deduced position for the planet's north pole was R.A. 295°·2, N.Decl. 41°·3, equinox 1900·0.

Seven spectrograms were obtained between Feb. 17 and May 30, 1928. They all showed the spectral lines inclined in the same sense, and gave $2{\cdot}76 \pm 0{\cdot}15$ km./sec. as the linear speed of a point on the equator. Taking the circumference of Neptune's equator as 157,000 km., they deduce 15·8 hours as the rotation period, with a probable error of 1 hour. This result makes it probable that the values $7^h\ 55^m\ 12^s$, and $7^h\ 50^m\ 6^s$ found by Maxwell Hall in 1883 and 1915 respectively, and those found a few years ago by Opik and Liviander at Tartu, $7^h\ 42^m\ 24^s{\cdot}1$ and $7^h\ 50^m\ 10^s{\cdot}7$, were really the half period. The latter were found by periodic variation in the planet's light; if opposite hemispheres happened to resemble each other, the light would vary in half the rotation period. Twice the mean of the four values is $15^h\ 38^m\ 56^s{\cdot}4$, which is very close to the new value. The longer value is supported by dynamical considerations, Dr. J. Jackson having shown, in *Mon. Not. Roy. Ast. Soc.* for March 1926, that the 7-hour period would imply a degree of oblateness in the planet much greater than that indicated by the shift of the node of the satellite. He found a period of 19·1 hours, but with a probable error of nearly a fifth of itself, so that the new value is not too discordant from it. The most surprising result of the new investigation is that the rotation of Neptune is direct, that is, in the same direction as the earth, and the opposite direction to the revolution of the satellite. The seven spectrograms are all in agreement on this point. In all other cases in the solar system, except the very remote outer satellites of Jupiter and Saturn, rotation and satellite movement are in the same sense. Moore and Menzel found that the shift in latitude 45° was $\frac{1}{10}$ of that at the equator, while that at the poles was almost zero; these results support the correctness of the assumed position of the planet's equator.

PHOTOGRAPHS OF VENUS.—The photography of Venus in light of different wave-lengths was undertaken by Mr. F. E. Ross during a very favourable elongation in June–July 1927, using the Mount Wilson 60-inch and 100-inch reflectors. A paper describing his results, and including a useful résumé of previous work on Venus (both photographic and visual), appears in a recent issue of the *Astrophysical Journal* (vol. 68, p. 57). Owing to the greater penetrating power of long waves, it was hoped that photographs taken by red or infra-red light might show some details of the true surface; it was found, however, that such photographs actually showed no detail, whereas many markings were clearly visible in photographs taken in ultra-violet light. The author suggests as a tentative explanation the existence of a very dense yellowish lower atmosphere above which lies a thin stratum of cirrus cloud. The ultra-violet photographs (which are well reproduced on two plates) show much variable detail, assumed to be due to atmospheric disturbances in the upper layers. The photographs appear to require a short rotation period, inconsistent with spectroscopic data, and a period of about 30 days is suggested as the best compromise which can be made at present from all existing data.

THE ORBIT OF μ' HERCULIS.—The work of E. Silbernagel on the orbit of ζ Herculis was recently mentioned in this column. He contributes a paper on μ' Herculis to *Astr. Nach.*, 5583. The observations used extend from 1857 to 1926, without any considerable gaps, and cover more than one and a half revolutions. The final period is 42·87 years, periastron 1879·42, semi-major axis 1·29″, eccentricity 0·183. A second solution, with slightly different values, represents the observations of distance somewhat better. Systematic corrections are determined for six of the observers.