

adviser in agricultural chemistry in the University of Manchester—The Registrar, The University, Manchester (June 20). A lecturer in physics in the University of Durham (Durham Division)—The Head of the Department of Science, University of Durham, South Road, Durham (June 22). A lecturer in mechanical engineering at Armstrong College—The Registrar, Armstrong College, Newcastle-upon-Tyne (June 22). An assistant inspector under the Ministry of Agriculture and Fisheries for work in connexion with agricultural and horticultural education and research—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (June 24). Two assistant superintendents under the Geological Survey of India—The Secretary to the High Commissioner for India, General Department, 42 Grosvenor Gardens, S.W.1 (June 24). A director of the Bureau of Economic Research of the Commonwealth of Australia—The Official Secretary, Commonwealth of Australia, Australia House, Strand, W.C.2 (July 1). A professor of Indian history and archæology in the University of Madras—The Registrar, University of Madras, Triplicane P.O., Madras (August 19). An instructor in engraving and etching, and an instructor in decorative composition and design in the new Higher School of Fine Arts, Cairo—The Ministry of Education, Cairo

(Sept. 30). A chemist under the Air Ministry, Kidbrooke, with up-to-date knowledge of analytical methods, organic and inorganic chemistry, with specialised knowledge of one of the following subjects: (a) metallurgy; (b) petroleum technology; (c) non-metallic aeronautical materials, *i.e.* lubricating oils, dopes, paints, etc.; (d) textiles; also a chemist with analytical experience in organic and inorganic work, and, if possible, specialised knowledge of metallurgical chemistry or petroleum technology—The Secretary (I.G.), Air Ministry, W.C.2. A supervisor for the scientific instrument testing department of W. G. Pye and Co.—W. G. Pye and Co., Granta Works, Cambridge. A laboratory steward for the biochemical laboratory of University College, London—The Secretary, University College, Gower Street, W.C.1. A plant physiologist at the Welsh Plant Breeding Station, Aberystwyth—The Secretary, Welsh Plant Breeding Station, Agricultural Buildings, Aberystwyth. A laboratory assistant for the Health Department of the Government of Iraq—The Crown Agents for the Colonies, 4 Millbank, S.W.1 (quoting M/1546). A junior assistant at the Experimental Station, Porton—The Chief Superintendent, Chemical Warfare Research Department, War Office, 14 Grosvenor Gardens, S.W.1.

Our Astronomical Column.

MATTER IN INTERSTELLAR SPACE.—The existence of interstellar calcium, as evidenced by the detached [*H*] and [*K*] lines in stellar spectra, has for some time engaged the attention of Dr. O. Struve (see, for example, *NATURE*, vol. 122, p. 252). His latest researches, made in collaboration with Prof. B. P. Gerasimovič, and described in the *Astrophysical Journal*, vol. 69, p. 7, deal with the physical properties of calcium and other elements in interstellar regions. Eddington's hypothesis of an interstellar substratum embodying the whole galactic system is regarded as the most satisfactory hypothesis at present, and the one most in accordance with both observational data and theoretical considerations. This substratum consists of many elements in various states of ionisation, with an average density of the order of 10^{-26} . The observed intensities of detached Ca^+ lines show a definite distance effect, such as would be expected from a uniform distribution of Ca^+ with a density of about 3.6×10^{-32} . The substratum of interstellar matter appears to share the rotational motion of the stars round a distant central mass in galactic longitude 325° .

THE SUNSPOT CYCLE AND THE CORONA.—It is about half a century since it was first noticed that the form of the corona varies with the progress of the sunspot cycle. Our knowledge on the subject has become more definite from the aid afforded by the long series of coronal photographs that is now available. Recently, studies on the subject have been made by Profs. H. Ludendorff and S. A. Mitchell. The latter contributes an article to *Popular Astronomy* for April, which discusses and amplifies Ludendorff's conclusions. The ellipticity of the corona near the sun's limb is denoted by a , that at a distance of one radius from the limb by $a+b$; a varies very little with the sunspot cycle, its mean value being 0.04;

b is zero at maximum sunspot activity and about 0.26 near minimum activity; it appears, however, to reach its maximum a year or two before sunspot minimum. Mitchell notes that the coronal spectrum appears also to change its type; thus the line at $\lambda 6374$ in the red, which is not often observed, was well seen both in 1914 and in 1925, these being at the same phase of the cycle. It is suggested that the Wolf numbers are a better guide to the type of corona than the phase of the sunspot cycle; it is also noted that the corona of 1918 was abnormal; it occurred a year after sunspot maximum, and had most of the features of maximum type, but there were also the strong polar brushes associated with minimum type.

OCCULTATIONS OF STARS BY VENUS.—*Acta Astronomica*, series A, vol. 2, contains a discussion by J. Witkowski of the occultations of three stars by Venus. That of the star BD $-0^\circ 2554$, mag. 7, was observed at Teramo on Nov. 9, 1895. This had not been predicted, and was observed by chance. Prof. T. Banachiewicz predicted that of the 4th magnitude star η Geminorum on July 26, 1910; it was observed at seven observatories. Dr. L. J. Comrie predicted that of BD $+18^\circ 1499$, mag. 7.4, on Aug. 22, 1924. Both phases were observed at Neu-Babelsberg, and the reappearance at Bergedorf.

From discussion of these phenomena Mr. Witkowski finds a correction of $-0.58'' \pm 0.23''$ to Hartwig's value of the diameter at distance 1, which is $17.552''$. This is in fair accord with Auwers's value $16.820''$ derived from the transits of Venus in 1874 and 1882. He finds corrections to the *Nautical Almanac* positions of Venus which agree fairly well with those found with the Greenwich Transit Circle. The observations lead him to suspect some refraction of the stars due to the atmosphere of Venus.