

NEWS and VIEWS

Prof. W. Pauli, For.Mem.R.S.

PROF. WOLFGANG PAULI, who has just been elected a foreign member of the Royal Society, is best known for the exclusion principle, or 'Pauli principle', which he formulated in 1925, and which at once cleared up many unexplained features of atomic structure and atomic spectra. This principle, which states that no two electrons, or nucleons, can be in the same quantum state, is logically independent of the other laws of quantum mechanics. It applies to all elementary particles of half integral spin, and Pauli himself showed in a later investigation that a system in which such particles did not obey the principle, or in which it applied to photons or other particles of integral spin, could be described without logical contradictions, but would lead to physically unreasonable consequences. Besides the work on the exclusion principle, for which he was awarded the Nobel Prize for physics in 1945, Pauli has made many important contributions to theoretical physics, beginning with an article on the theory of relativity, which he wrote while he was a research student, simultaneously with his thesis on the quantum theory of the hydrogen molecule ion, and which has remained until now the standard text on the subject. He initiated the modern electron theory of metals by applying the exclusion principle, extended by Fermi to the statistic of many-particle systems, to the paramagnetism of metals. More lately he has contributed to the theory of mesons, and he has always been interested in a clear formulation of the basic concepts of quantum theory. His enthusiasm and insistence on fundamentals have inspired many collaborators and pupils, and by incisive criticism he teaches them to beware of loose thinking.

Technical Assistance to South and South-East Asia

THE report for 1952 of the Council for Technical Co-operation in South and South-East Asia (pp. 16; London: H.M.S.O., 1953; 6d. net), which deals with the technical co-operation scheme of the Colombo Plan, indicates a marked increase in the flow of technical assistance over that for 1951; 90 experts and 538 training places were provided, as against 45 and 309, respectively, in 1951, but the limiting factor remains not the availability of funds, but the willingness of individual experts to accept appointments overseas. The increasing world-wide demand for technologists, and full employment in the supplying countries accentuate the problem, and improvement is due chiefly to improved administrative arrangements, to the maintenance of a sense of urgency in meeting the needs of under-developed countries and to the way in which the idea of the Colombo Plan has caught public imagination. Most of the experts provided during the year were engaged for specific projects where their duties included the training of local personnel as well as some measure of executive responsibility for the scheme, but the demand for experts whose main duties will be training local personnel is increasing. Schemes which combine capital and technical assistance have also increased. Ceylon, India and Pakistan have taken 118 of the 135 experts so far supplied and sent 689 of the 847 trainees. They have also supplied five of the experts and facilities for fifty-seven trainees. The United Kingdom has provided 67 experts and 279 training places in all, the corresponding figures for Australia being 40 and 286, for Canada 6 and 106, and for New

Zealand 17 and 119. The demand for, and provision of, equipment for use by experts and for training and research institutions also increased; but although the sums involved are considerable, by December 31, 1951, only £400,000 out of the eight million pounds set aside for the Scheme had actually been committed, and in April 1952 it was agreed that the scheme should be co-terminous with the Colombo Plan and operate until June 30, 1957. The assistance provided has been mainly in the fields of medicine and health, agriculture and forestry, engineering, industry and trade, and transport and communications. In addition, the United Nations and the Specialist Agencies have provided the area with 502 experts and 564 trainees, and the corresponding numbers supplied by the United States are 210 and 403.

Universal Copyright Convention

THE text of the Universal Copyright Convention which was signed at Geneva last September by the delegates of thirty-six countries, including the United States and the United Kingdom, has now been published by the United Nations Educational, Scientific and Cultural Organization (pp. 24; 125 francs, 2s. 6d. or 50 cents. Paris: Unesco; London: H.M.S.O., 1953). The Convention seeks to supplement existing copyright conventions, such as the Berne Convention, to which some forty countries (but not the United States or any Latin American countries, except Brazil) are parties. Ratification of the Convention by the United States and by Britain would greatly facilitate the obtaining of copyright protection in the United States for the work of British authors. At present, works in the English language can only secure protection in the United States if, in addition to registration at the Copyright Office in Washington, D.C., they are printed in the United States from type set up in that country. Under the Universal Convention, however, a country which requires compliance with formalities as a condition of obtaining copyright agrees to regard such conditions as satisfied, so far as works of foreign origin are concerned, if such works bear the symbol 'C' written in a circle, indicating that copyright protection is claimed, together with the name of the copyright proprietor and the year of first publication. This provision will facilitate the protection of British works, both in the United States and in many other countries outside the Berne Convention, where registration is often required as a condition of copyright protection. In other respects, works will be protected in each contracting country in accordance with the domestic law of that country, but no country will be required to give a longer term of protection than that to which a work is entitled in its country of origin. The Convention will come into force when ratified or formally accepted by twelve countries, of which at least four are not parties to the Berne Copyright Convention.

Planetary Influences on the Sun

A PAPER entitled "Planetary Influences on the Sun", by M. Kopecký, P. Mayer and V. Borovičková, of the Central Astronomical Institute, Ondřejov (*Bull. Cent. Astro. Inst. Czech.*, 3, No. 3; 1952), contains the results of their work on sunspot activity and the positions of the planet Mercury. In a previous paper (2; 1950) certain results were given by the same authors on the planet Venus, and it was found that the period of variation of the relative number was approximately equal to the synodic rotation of