

15 dollars per gram of uranium-233 and 12 dollars per gram of plutonium. While the charges are subject to change, it is the Commission's intention to keep them as stable as possible. In the United States uranium-235, uranium-233 and plutonium may be owned only by the Government, and may be made available for private uses only on a lease basis. The annual lease charge will be 4 per cent of the basic charge. These nuclear materials may be either sold or leased to foreign governments, and are available to those governments having agreements for co-operation with the United States. The charges announced will also apply to material distributed abroad. Research and development on uranium-233 and plutonium are generally in connexion with their use as reactor fuels. For this reason the charges are set at levels representing the fuel value of uranium-233 and plutonium as compared to existing charges for uranium-235, the material used as fuel in most reactors. The allotment for domestic civilian use totals 3.6 kgm. of uranium-233 and 37.5 kgm. of plutonium. Present allocations to domestic licensees amount to 0.04 kgm. of uranium-233 and 12.12 kgm. of plutonium, with applications for additional amounts pending. A study is in progress to determine what additional quantities should be made available for these purposes.

Pollution from Power Station Chimneys

WHEN a wet fog lasts for many hours, the loss of heat by radiation into space from the top causes downward convection currents which stir the whole volume of the fog. At the top there is a sharp temperature inversion, the air immediately above the fog being warmer than the fog layer. Most pollution emitted within the fog remains within it, and if the fog is stagnant, the concentrations of smoke and sulphur dioxide may rise to dangerous magnitudes. It is therefore of the utmost importance to know whether the hot gases from a power-station chimney rise out of the top of the fog or are trapped below the inversion and contribute substantially to the accumulation of pollution below. Theoretically, the problem poses difficult questions which have not yet been overcome, and all theories are bound to make one or more assumptions which cannot be justified except by a long series of observations or experiments which have not yet been performed. The Central Electricity Generating Board has employed Fairey Air Surveys, Ltd., to fly over, and in, shallow London fog to measure temperatures and observe the behaviour of plumes from power stations along the Thames. The considerable navigational problems have been overcome, and on the morning of December 4 a flight was made and the plumes from three Thames-side stations were observed to rise into, and remain in, the air above the fog layer. The plumes from Brunswick Wharf Power Station were coloured red and black so that identification was certain, and photographs taken show that on this occasion the power stations did not contribute at all to the pollution at ground-level. There are undoubtedly circumstances of deeper fog and stronger inversions when the plumes would be contained in the fog layer. Further observations and experiments will be required before these circumstances can be specified with confidence; but it is clearly possible to build chimneys high enough and emitting gases hot enough for the gases to escape into the air above, and not contribute their quota of sulphur dioxide to the air we breathe at the ground when stagnant fogs occur.

Technological Education in India

SIR WILLIS JACKSON, director of research and education, Metropolitan-Vickers Electrical Co., Ltd., has accepted an invitation from the Ministry of Scientific Research and Cultural Affairs of the Government of India to act as chairman of a committee, set up by the President of India, to review the work and progress of the first of the technology institutes in that country, namely, the Indian Institute of Technology, Kharagpur. The committee includes Shri D. L. Deshpande, director of the Bihar Institute of Technology; Dr. Atma Ram, director of the Central Glass and Ceramic Research Institute; Prof. M. Mujeeb, vice-chancellor of Jamia Millia Islamia, Okhla; Shri S. Ratnam, former finance secretary of the Government of India; and Shri G. N. Vaswani, assistant educational adviser (technical) of the Ministry, who will act as secretary.

Exchange of Students for Technical Experience

THE eleventh annual report of the International Association for the Exchange of Students for Technical Experience (pp. 71. London: 1958) records in 1958, for the first time since the foundation of the Association, a decrease in the number of participants—from 5,934 in 1957 to 5,394 between 24 member countries. On the other hand, 2,777 industries, etc., participated, 436 universities and colleges, covering forty faculties, compared with 2,761 industries and 401 universities in 1957. Great Britain sent 774 students and received 784; for Sweden the corresponding figures were 359 and 736; France 343 and 410; Canada 24 and 95; Switzerland 151 and 202; Finland 175 and 202; and for Germany 998 and 1,023. Of those countries sending more students than they received, Austria sent 562 and accepted 308; Yugoslavia 220 and 116; the Netherlands 446 and 370; Turkey 232 and 166; Spain 244 and 207; Italy 177 and 153; and Israel 97 and 60. A special evaluation made by Great Britain on the basis of 4,249 reports on students since 1949 is to be published shortly, and the Association believes that, so far as the exchange can be evaluated with statistics, it has proved an undoubted success.

Scholarships in Mathematics for Courses in Statistics and Computational Methods

THE London School of Economics and Political Science is developing courses in statistics and computational methods within the general framework of the degrees in economics of the University of London. The object of the new arrangements is to equip graduates with specialized knowledge in certain mathematical subjects and a general appreciation of the wider field of economics including accounting. A number of industrial and commercial undertakings have promised generous support to enable the School to provide the technical equipment necessary for the proposed course of study. It has also enabled the foundation of scholarships tenable in connexion with the new course. Each scholarship will be worth £450 a year and will normally be tenable for three years. Awards will be made without regard to the income of the parents or guardians of the successful candidates. For the academic year beginning in October 1959, two scholarships will be available. Further information can be obtained from the Registrar, London School of Economics and Political Science, Houghton Street, Aldwych, London,