

Harwell, was elected chairman for two years of the European-American Nuclear Data Committee at the Committee's sixth meeting held in Athens. Dr. Bretscher will succeed Dr. J. Spaepen, head of Euratom's Central Bureau for Nuclear Measurements at Geel in Belgium. The secretaries of the Committee are Mr. R. Batchelor, Atomic Weapons Research Establishment, Aldermaston, and Prof. H. Goldstein, Columbia University, New York. The European-American Nuclear Data Committee was set up in October 1959 by the Steering Committee of the European Nuclear Energy Agency in agreement with Euratom, the United States and Canada. The Committee consists of fifteen experts from nuclear establishments in member countries of the Organization for Economic Co-operation and Development. The work of the Committee includes periodical reviews of activities in the field of neutron cross-sections, and collation, comparison and diffusion of the results of this work. It also establishes lists of priority requests for nuclear data measurements, so as to help in directing and co-ordinating research activities in the participating laboratories and to ensure co-ordination in the use of scarce materials needed for such measurements. The Committee was responsible for the recommendations which led to the formation of the European-American Committee on Reactor Physics and the European Nuclear Energy Agency's Group of Specialists on Neutron Data Compilation. The Committee has also sponsored various symposia.

Building up Education in Britain

In a written answer in the House of Commons on December 5, the Minister of Education, Sir Edward Boyle, stated that the two most important recommendations of the Newsom Report on secondary education addressed to him were those relating to raising the school age and to the school building programme. He had recently announced a greatly increased level of school building for 1965-66 and 1966-67, and recognized the importance of continuing the improvement of educational provision in secondary schools on which Britain was already engaged. He had already promised to make a statement during the Session about raising the school-leaving age. Some work was already in hand relating to other recommendations of the Report. He was supporting from his research vote an investigation by the Liverpool Institute of Education of the relationship between environment and educational progress and by the London Institute of Education of the relationship between verbal intelligence, learning ability and social class. Consideration of how best to follow up other recommendations was continued, and he would be ready to consider supporting from his research vote other proposals for research and development formulated in this way. In reply to an earlier question, Sir Edward Boyle had stated that the increasing recognition throughout the building industry of the need for scientific management techniques, and the inclusion of building management in the examinations of the Institute of Builders, had increased the demand for specialist teachers of building management. His Department would shortly be discussing this and other problems with the Institute, and the discussions would cover the question of text-books.

British Space Research

In a written answer in the House of Commons on December 5, the Minister of Aviation, Mr. J. Amery, stated that his Department had been carrying out a programme of research into the technology required for the civil and military exploitation of space, and this programme was at present being reviewed. The design study of a communications satellite had been completed and its implications were being investigated. Twenty separate systems, including fifteen types of satellite, were considered in a co-operative investigation with the Post Office and industry, and discussions with Europe for

British participation in a satellite communications system would be followed by talks with the United States and other countries. Britain, he said, was keeping in close touch with the Commonwealth and continued to participate in the negotiations for establishing the European Space Research Organization, the Preparatory Commission of which had placed contracts for two preliminary satellite design studies with the Ministry of Aviation. The first *Blue Streak* would be launched from Woomera, probably in April 1964, and under the Minister for Science's space research programme, the second Anglo-American scientific satellite awaited launching in the United States. His Department had placed a contract for a third satellite in the programme which would be the first British-made satellite and should be ready for launching by the United States in about three years. Development of a stabilized version of the *Skylark* sounding rocket had reached an advanced stage.

Telstar and its Problems

A RECENTLY-PUBLISHED booklet, edited by R. M. Foster, jun., *Satellite Communications Physics*, is designed primarily as an aid to school science education (Pp. 88. By Members of the Staff of Bell Telephone Laboratories. New York: Bell Telephone Laboratories, 1963). Written by scientists who have participated in the *Telstar* project, the booklet gives a general review of communications by satellite, followed by six interesting individual 'case histories' on specific questions raised by *Telstar*. The six topics are: the method of calculating orbits; the choice of colour and surface finish to maintain the required temperatures; the use of optical observations to determine the direction of the spin axis; the protection of solar cells from radiation damage; the effects of time delays of up to 1.2 sec in telephone conversations via a synchronous satellite; and, finally, the problem of repairing a satellite in orbit.

Research and Design in Engineering

In a lecture entitled "Research and Design in Engineering", originally delivered at the National Engineering Laboratory in October 1962, and which has only been published this autumn, Mr. H. Clausen renews the plea for a better balance between the science and the art of engineering which he had advanced in earlier lectures on engineering design as the background and basis of contemporary life and on the borderland between science and engineering. Quoting a remark of Sir Henry Tizard that science may make many things possible but does not necessarily make them happen, Mr. Clausen suggests that Britain's educational and industrial weaknesses still call for more attention at the point where two disciplines, fields of activity, or techniques overlap. The problem is largely one of communication of ideas and media of expression. He suggests that the gap between research and the application of its results is due first to the disappearance of the older relation between master and apprentice and then to the failure, in the educational, engineering and industrial fields, to develop some system to replace it effectively. Probably arising out of the latter is the failure of Britain's older educational system to realize that national leadership cannot be effective without a full appreciation of the way the country earns, or might be able to earn, its living: a mastery of the industrial arts, on which everything depends, and which can no longer be taken for granted. Probably, in consequence, the control of much industry has drifted into the hands of men who are mainly interested in finance and profits and have pushed the creative aspects of industry, on which everything depends, so far down in the hierarchy that they are no longer effective, or attractive to men of talent, quality or ambition. Finally, he insists that Britain's existence as an independent nation depends on maintaining a proper balance between science and the technologies.