

OLD WORLD

NEUTRON GENERATORS

Decision Imminent

FOR the third time in nine years, the British government is to be asked to build a 100 megawatt nuclear research reactor. This time the proposal comes from the Science Research Council, which is prepared to stand the entire cost from its own annual budget. The function of the reactor would be to provide beams of neutrons for research. Neutron diffraction crystallography, for example, can be used to analyse the structure of complex molecules with a precision unattainable by other methods. The merit of a neutron generating reactor could be not only in the energy attained by the particles but also in the way in which the neutrons can be controlled. The special value of the projected British machine lies in the neutron flux density of about 10^{15} neutrons per square centimetre per second, which it should be able to generate. This is three orders of magnitude greater than the earliest reactors.

Although the new reactor may take up to eight years to complete, it is unlikely that it will be obsolete before completed, for the projected flux density represents the limit that can be achieved with present technology. Significantly, in the United States, plans for a still larger reactor have been abandoned in the recent crop of research economies.

The know-how to build a large research reactor has been available for ten years, and the problems to which the machine could be applied have been spelt out frequently by the Science Research Council. Why, then, has the project been dormant since 1962? The first proposal fell foul of the EEC negotiations in the early 1960s. When Britain's application for entry was withdrawn, it signalled the end of possible British cooperation in the construction of an £11 million Franco-German reactor at Grenoble. The Grenoble reactor, smaller and less versatile than the projected British machine, should go critical next year. The next stumbling block was the dwindling status of the UK Atomic Energy Authority (which had assumed financial responsibility for building a British reactor) in the eyes of the government. Even a deal through which the SRC would bear some part of the cost met no response from successive ministers of technology.

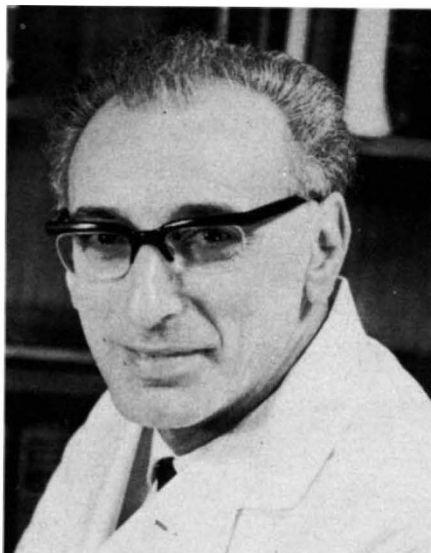
Will the latest proposal meet with more success? The SRC Committee for Nuclear Beam Research, under Professor E. W. J. Mitchell of Reading University, completed its arithmetic early this year. The reactor should cost £22 million spread over eight years, in-

cluding annual running costs estimated at £3 million. The first step will be a £2 million design study to be carried out by Harwell, which will also build the reactor. Hopes are high that if government assent is given, a start will be made this autumn.

NIMR

Medawar's Successor

THE new director of the National Institute for Medical Research is A. V. S. Burgen, FRS, Sheild Professor of Pharmacology and head of the Medical Research Council's Molecular Pharmacology Unit at the University of Cambridge. Professor Burgen, who takes up his appointment in September, succeeds Sir Peter Medawar, the immunologist, who has been in charge of the NIMR since 1962. A stroke two years ago left Sir Peter in indifferent health, and he has given up the directorship to concentrate on his research at the Clinical Research Centre, Harrow.



Professor A. V. S. Burgen

Professor Burgen will have in his care the largest MRC-sponsored medical research establishment in Britain. In 1960-70, grants to the NIMR totalled £2,355,582 against £19,135,797 for all MRC establishments. Burgen's own unit will follow him to Mill Hill next year to form the nucleus of a new division of molecular pharmacology; at present sixteen strong, the unit has been looking at the application of nuclear magnetic resonance studies to the interaction of drugs with cell membranes.

Professor Burgen said last week that he had no immediate plans for changes in the organization of the NIMR; his first task will be to learn how to run such a large and complex establishment. Burgen is, however, no stranger to major administration; for five years he was deputy director of the University Clinic at Montreal General Hospital.

RADIO ASTRONOMY

New Bodar Telescope

by our Soviet Correspondent

PLANS for the new radio telescope of the Siberian Institute of Terrestrial Magnetism, the Ionosphere and Radio-Wave Propagation have now reached the stage of "pilot" tests.

The new telescope, which is being built under the direction of A. A. Pistol'kors, Corresponding Member of the Soviet Academy of Sciences, with the close cooperation of the observatories and relevant institutes of the academy, will be a multi-element cruciform radio interferometer, with lines of antennae orientated N-S and E-W. It is to be used for solar observations in the centimetre wave-band, as part of the institute's programme of solar observations in relation to problems of long-range communications and weather forecasting. The resolving power will be some 20 seconds of arc. Tracking and data processing will be automatic, building up a complete radio picture of the Sun every few minutes.

The Bodar site will be used for observations only, data being relayed by teletype for processing in the institute's laboratories, where it will be compared with the optical observations from the other observatories. It is expected that the telescope will facilitate the recording of local sources of solar radiation, the location of solar bursts and the real-time tracking of high-speed processes in the lower layers of the corona.

One long-term objective is the mapping of the magnetic field of the Sun.

It is hoped that the "pilot" tests will be completed during 1971, and that work will go ahead immediately afterwards. Site preparation is already complete.

HIGHER EDUCATION

CNAA Looks Ahead

THE Council for National Academic Awards seems steadily to be winning public confidence as the source of degrees and diplomas for institutions of higher education other than universities and colleges of education in Britain. The annual report of the council for 1970, published this week, explains that there are now close on 24,000 students enrolled in first degree courses, more than half of them on sandwich courses. Predictably, perhaps, courses in the arts and social sciences now account for nearly a third of all enrolments. There are 869 students following postgraduate courses leading to the MPhil and PhD degrees.