

arranged to move into the graphite stack in a similar manner. The maximum thermal neutron flux is about  $10^8$  neutrons  $\text{cm}^2/\text{sec.}$  and the heat output is restricted to less than a hundred watts.

The reactor will at first be used to check calculations on the effect of separating the fissile content of the fuel (for example, uranium-235 or plutonium-239) from the fertile content (for example, uranium-238); data of this kind are of importance for the design of reactors in which nuclear fuel may be recycled through the reactor. Another application of the reactor is to investigate problems associated with the design study of a sodium-cooled graphite moderated reactor. For this reason the name NERO is derived from the phrase 'Na (sodium) experimental reactor'. The 'O' is added to indicate that it is a zero-energy (that is, low-energy) reactor.

NERO was designed and built by an Atomic Energy Research Establishment team in association with the following industrial firms: Saben, Hart and Partners, Ltd., London, and Technical Design and Tool Co., Ltd., Reading (detail design work); Messrs. March, Ltd., Reading (steel work fabrication); R.O.F., Nottingham (roof trolleys); and H. M. Hobson, Ltd., Wolverhampton (control mechanisms).

#### The National Museum of Wales

THE forty-ninth annual report (1955-56) of the National Museum of Wales, after recording the usual formal matters, refers to the fact that the major part of the reorganization of the first-floor galleries has been completed. All folk-life material has been transferred to St. Fagans, archaeology to the west and art to the east galleries. The circular gallery has thus been freed for temporary exhibitions, and the previous Welsh rooms are being converted to provide a print room and a small gallery for the Old Masters. Unfortunately, an application to the Treasury for funds to make provision for a Department of Industry was not successful in spite of frequent statements by the Government that technological education is an urgent need of our times. It is earnestly hoped that this matter will be reconsidered as soon as possible. The Department of Geology has made installations whereby temporary exhibits of maps and photographs can be prepared easily. The Department of Botany records the revision of various existing exhibits and the maintenance of the wild-plant table throughout the year. The Department of Zoology has prepared two new exhibits. One deals with the economic products of the cow, pig and sheep, while the other is concerned with British freshwater fishes. In the Department of Archaeology the reorganization consequent on transference to the west galleries has been extensive, while a similar major rearrangement has taken place in the Department of Art. At St. Fagans the re-erection of Capel Pen-rhiw was completed and the chapel is attracting a record number of visitors. As usual, the staff of this live institution have been particularly active in research problems and many published works are listed. (See also this issue of *Nature*, p. 562.)

#### Fast-Slow Reactor at Harwell

HARWELL now has a fast-slow reactor, a simple modification having resulted in interesting changes to the characteristics of the fast reactor ZEPHYR. Graphite has been substituted for the uranium bars that originally formed the outer reflector. The thin inner reflector of uranium still surrounds the

plutonium core. In its new form the reactor diverged with a critical mass of plutonium very close to that in the uranium-reflected system. Because the neutrons reflected back into the inner reflector have been slowed down, ZEPHYR now shows some of the characteristics of a thermal reactor. For example, experiments have shown that the chain reaction can now be controlled, as in a thermal reactor, by putting an absorber of slow neutrons such as cadmium into the graphite. It is too early to predict the applicability of this 'mixed' system to power breeder reactors such as that at present under construction at Dounreay.

#### International Symposium on Proteins

A SYMPOSIUM on protein chemistry is to be held in Paris during July 25-29 under the auspices of the Commission on Proteins of the Section of Biological Chemistry, International Union of Pure and Applied Chemistry. The programme will be devoted to a survey of present knowledge of the structure and biological function of protein molecules, and the papers will be published in monograph form. Inquiries and applications to register should be addressed, before April 1, to the chairman of the symposium, Prof. Jean Roche, Collège de France, Place Marcellin-Berthelot, Paris 5.

In connexion with this symposium and as an exploratory step towards determining the demand for internationally available standard samples of proteins, the Commission on Proteins has announced the present availability of a special sample of a single lot of beef insulin. Designated as crystalline beef insulin, Batch No. 2189, the protein has been tested by Craig's counter-current distribution method and Porter's chromatographic procedure. Copies of the curves thus obtained are supplied with each sample. The insulin is obtainable by writing to British Drug Houses, Ltd., Graham Street, City Road, London, N.1, and is packed in 1 gm. ampoules at £6 (18 dollars) to cover the cost of manufacture and distribution. The purpose in making this sample available is to provide a single lot of insulin to which different laboratories can turn in experiments where it may be of value to be using the same protein preparation. If reference samples of this type prove useful to protein chemists, the Commission on Proteins of the International Union of Pure and Applied Chemistry hopes to make available other single batches of proteins prepared in as pure a state as is practicable with current methods of commercial processing.

Comments on this programme will be welcomed and should be addressed either to the President of the Commission, Prof. A. Neuburger, Department of Chemical Pathology, St. Mary's Hospital Medical School, London, W.2, or to the Secretary, Dr. Stanford Moore, The Rockefeller Institute for Medical Research, 66th Street and York Avenue, New York 21.

#### Supply of *d,l*-Aldosterone

A LIMITED supply of *d,l*-aldosterone for biological and clinical investigation has been made available to the Endocrinology Study Section, National Institutes of Health, by CIBA Pharmaceutical Products, Inc., Summit, New Jersey. This synthetic racemic material has one-half the biological activity of the natural *d*-aldosterone. It is available to qualified investigators in the following forms: *d,l*-aldosterone 21-monoacetate—purified sesame oil solution—200  $\mu\text{g.}/\text{ml.}$ ; *d,l*-aldosterone 21-monoacetate—purified