More about Mohole

THE complaint about the way in which the U.S. Congress has cut off Project Mohole without a shilling is also one of the themes of the annual report of the President of the Carnegie Institution, Mr. Caryl P. Haskins, for 1965–66. Mr. Haskins pointed to the way in which the federal government has grown to be a dominant influence in the sponsorship of research, and to the way in which a situation of this kind has arisen. Policy will become a matter for "public and indeed political judgment and decision". Mr. Haskins said that the dangers had become particularly acute in 1966 and that the way in which the Appropriations Committee of the House of Representatives had refused the National Science Foundation $19·7 million for Project Mohole was ominous. For one thing, he said, there has been financial loss as a result of the cancellation but, more important, real damage has also been done to the pattern of research in the United States. Although Mohole had begun badly, it had "recently been much more consistently planned". Mr. Haskins also complained at the way in which the National Science Foundation has repeatedly been denied by Congress the sums of money for which it asked in its budget. The foundation, he said, is the only agency of the government free to put its resources where they can be best applied.

Trouble about Stonehenge

ASTRO-ARCHAEOLOGISTS seem to be a quarrelsome lot. The controversy in *Nature* about whether Stonehenge was a computer for predicting eclipses, and if so what kind of computer, has been sustained ever since the publication by Professor Gerald S. Hawkins of an article on the subject in 1963 (*Nature*, **200**, 306). Last week, for example, Drs. Cotton and Martin from the University of Melbourne argued that Professor Hawkins's scheme, like that of Professor Hoyle, is too elaborate. But Professor Hawkins himself (Smithsonian Institution Astrophysical Observatory, Special Report 226) has now taken Sir Norman Lockyer to task for having published "Some Questions for Archaeologists" in 1906 (*Nature*, **73**, 280) which, so Hawkins says, "should never have been permitted into print by the editor of *Nature* who was at that time Sir Norman himself". Hawkins goes on to refer to Lockyer's other work on Egyptian chronology, mythology, religion and the calendar, and says: "Such an extensive effort was premature, and he did not proceed at an appropriate scholastic pace by publishing step by step in the scientific journals and thus benefiting from the appraisal and criticism of other scholars. Despite the unfortunate context in which they are found, several of the suggestions in the 'Dawn of Astronomy' seem to be valid when judged in terms of the criteria of this paper. The measurements of the great temple of Amon-Ra at Karnak are sufficiently accurate to establish that this mammoth temple is aligned to the midsummer sunset. His suggestion that this alignment was used as a secret marker to enable the priests to predict the rising of the Nile is an interesting one. The temple of Isis at Denderah seems to be aligned to the rising of Sirius, and the alignment is confirmed by the inscriptions at the temple. The smaller temples at Karnak could well be aligned to Canopus, the second brightest star in the sky". It is only natural to ask whether Professor Hawkins will be travelling next to Egypt, not to Stonehenge and the Hebrides.

Finfish Preserved

IT is well known that an army marches on its stomach, and it is nearly as well known that the United States Army hopes to fill its stomach with irradiated food. The verbatim record of the review of the United States Food Irradiation programme, held last year by the Joint Congressional Committee on Atomic Energy, shows that of the three agencies charged with fostering what is called the commercialization of food irradiation, the army is the most keen to start work. One army witness spoke of the potential demand of the army for 15 million pounds of irradiated ham a year and 7·4 million pounds of frankfurter sausages, and the same witness pointed out that the difficulty of handling conventionally preserved foods in Vietnam implies that rapid progress with food irradiation would now be particularly opportune. In the event, however, everything will depend on how soon the much discussed Pilot Irradiation Plant is built, and how quickly the Food and Drug Administration can satisfy itself about the safety of irradiated foods so as to be able to approve applications for irradiation licences as a matter of routine. At the hearings there was very little talk of the allegedly toxic effects of the chemical products of irradiating carbohydrates such as have been reported by Professor F. C. Steward and his colleagues (*Nature*, **208**, 850 ; 1965). Dr. Charles L. Dunham did, however, suggest that there are probably similarities between the effects produced by irradiation and the caramelization of sugar. "I have a feeling that we are dealing with the same sort of thing here."

In the long run the most important part of the hearings may be the cost–benefit study which has been carried out by a private organization for the Atomic Energy Commission. The commission had asked for a particular study of a number of perishable commodities, where such advantages as there may be in food irradiation should show up as an actual saving of food which is prevented from decay. The preservation of New England finfish seems to offer the best chance of economic saving, chiefly because there is a growing demand for edible fish in the north-eastern states. The study calculates that a processing plant on the pier at Boston would be able to prevent roughly 5 per cent of the catch from going bad, and that this would be economically attractive because the cost of processing would be less than 2 cents a pound. (The study included a survey among housewives throughout the United States of willingness to buy irradiated foodstuffs, and produced the cheering result that 57 per cent of them would do so.) Unfortunately for the irradiation enthusiasts, the only other foodstuff to come well out of the cost–benefit study was the Hawaiian papaya, for which it seems that savings stemming from an increase of shelf-life by three days would just about offset the development cost to the A.E.C. For most foodstuffs, handling costs are necessarily comparatively great, while the most perishable of them—crabs, for example—do not lend themselves to processing in a central installation.