

The National Institutes of Health do well out of the 1971 budget. The total expenditure will amount to \$1.526 billion in 1971, an increase of 4 per cent, and the money available for grants and fellowships will increase from \$706 million in the current year to \$723 million in 1971. There will, however, be a small reduction in the cost of support for medical education, from \$469 million to \$454 million. The National Cancer Institute (which will receive an extra 16 per cent in 1971) is said now to have the "aim of developing a vaccine for preventing virus induced cancers". Most of the extra money will be spent internally.

The National Institute of Dental Research also has 12 per cent extra to spend (\$34 million) as does the National Heart and Lung Institute (\$171.7 million). By contrast, the National Institute of Allergy and Infectious Disease is on a declining budget—\$99.2 million in 1971.

The National Science Foundation, the perennial Cinderella, may have better luck this year than in the past. The Administration is asking for an extra \$73 million, although it seems clear that most of this is destined for extra work in the environmental sciences. The National Science Foundation should have rather more than \$511 million to spend in the coming year but the increase of its expenditure in research will be from \$317 million in 1970 to \$384 million in 1971. The budget statement says that the increase is deliberately intended to give "support to research in areas where new scientific understanding is needed to aid in the solution of pressing problems affecting mankind" and it goes on to mention the environment, oceanography, ecological systems "and other problems of our society".

Specifically, the Foundation will spend more on its Arctic Research Program, its Earthquake Engineering Program and what is called the International Decade of Ocean Exploration. The Foundation is also planning to spend more on the International Biological Program.

The extra funds in the budget for the support of research should, the calculation goes, make it possible to award 4,305 grants in the coming year—the greatest number in the Foundation's history. But the Foundation is also planning to increase its investment in national research centres—the improvement of the 1,000 foot radio telescope at Arecibo will cost \$3.8 million, for example—and it is clearly willing to go some way to meet the case made by the National Science Board for a new basis for supporting academic science by spending \$55 million on institutional support.

The Atomic Energy Commission has managed to keep its research and development at a more or less constant level in spite of the decline which there has been in its total budget over the years. Roughly 18 per cent of its total budget on research and development will be spent in 1971. The Nuclear Weapons Program still remains a large part of the AEC's programme. In 1971, the Commission's expenditure on development of civil nuclear power stations will decline from \$221 million to \$149 million, chiefly a recognition of the extent to which the electrical companies are taking over this work. Basic research will cost the Commission \$488 million—a decline of \$14 million a year. What seems to have happened is that the AEC has been able to shoulder the continuing cost of the 200 GeV accelerator by shutting down similar facilities elsewhere. The

most spectacular change, however, in what the Commission proposes is a reduction in the cost of the Plowshare Program from \$14 million to \$8 million—evidently the first results of the evaluation programmes leave a lot to be desired.

DESERT RESEARCH

National Science Foundation Grant

THE International Biological Program has stimulated the National Science Foundation to give \$654,000 to the Utah State University at Logan for a programme of research on desert ecology. The intention is that the Utah centre should serve as a place for a large group of biologists and others drawn from universities in the Western states. To begin with, the money will be spent on field studies in a valley on the border between Utah and Idaho, on a site near Tucson, Arizona, and another in New Mexico. The objective of the research programme includes a study of the relationship between human beings and desert conditions, and it is intended that other sites will be chosen for the experimental work once the programme is under way. With conservation very much in the air, the National Science Foundation says that there is a danger that deserts can be "easily destroyed", partly by the rapid growth of population, so that there is an urgent need of research programmes.

The immediate programme will consist of a co-ordinated network of field studies linked with computer modulators of them and followed by specific attempts to check the prediction of the computer models against real life. There will be particular interest in the rates of growth of desert plants and of the relationships of water and nutrients to the plants. There will be a special investigation of photosynthesis in desert conditions especially in its relationship to flowering, and there will also be a systematic study of the life span of desert animals.

The validation studies which form a part of the programme are in many ways its most novel feature. A part of the work involved will be a careful inventory of the biological environment at each of the three sites to be investigated so as to provide a starting point for later studies. One project will involve the fixing of small radio transmitters to various wild mammals and two radio towers will be built to collect information from this equipment.

EARTHQUAKES

The American Toll

from our Geomagnetism Correspondent

DURING the past hundred years, earthquakes in the United States have killed more than 1,500 people and caused damage costing more than \$1,300 million. North America continues to be earthquake prone; but the National Earthquake Information Center at Rockville, Maryland, reports that 1969 was the fourth successive year without fatalities. The most recent deaths (seven) resulted from a tremor in Seattle, Washington, in 1965.

Last year 303 epicentres of earthquakes strong enough to be felt or cause damage were detected in