THE ROCKEFELLER FOUNDATION

BESIDES discussing some major innovations in the Foundation's programme in 1962, the President's Review of the Rockefeller Foundation, 1962*, notes some features of the current and operating programmes. In medical education substantial grants were made in 1962 to the medical schools of the University of Minas Gerais in Brazil and of the University of Cuyo in Argentina to assist in the establishment of a pre-medical curriculum and strengthen research and teaching. The University of Khartoum was assisted in reorganizing its Department of Physiology and the King George's Medical School, University of Lucknow, the development of its Department of Pharmacology, while the Medical Training Centre of the Ministry of Health and Labour of Tanganyika received a grant towards a new training programme for rural physicians. Help was also given to the Departments of Preventive Medicine and Pædiatrics, Makerere University College, in developing a field research and training centre in preventive medicine at Kasangati, to the Institute of Child Health of the University of Ibadan, and to the All-India Institute of Medical Science, New Delhi, in developing a teaching and research unit in rural medicine.

In the humanities and social sciences a current grant is helping the International Press Institute, Zurich, to promote more effective use of the daily newspaper press in the countries of south and south-east Asia, and the Educational Broadcasting Corporation, New York, was assisted in the initial operation of an educational television channel. Among research projects supported in the field of land economics, one at the University of Arizona, Tucson, relates the availability of water to social and economic growth in an arid environment, and programmes in agricultural economics are being supported at the Catholic University of Chili, Santiago. In agricultural sciences, on June 30, 1962, 236 students from 28 countries held Foundation scholarships or fellowships for M.Sc. or Ph.D. courses at 40 different universities in the United States and Europe. Continued support was given to an orientation programme for foreign students entering graduate schools of agriculture in the United States; the Texas Agricultural and Mechanical College System received a grant for studies with a mechanical device for measuring the nutritive value of forage crops during the digestive process in ruminants; and the University of Arizona a grant for investigation of the economic use of scarce water supplies, while establishment of an animal nutrition research centre at Nova Odessa, São Paulo, Brazil, was also assisted.

For virus work in 1963 and its operating programme in the general development of professional education the Foundation appropriated some 1·5 million dollars, and the Review outlines the work which led to the discovery of the new virus, oropouche, and the investigation of arboviruses. For co-operative projects in agricultural sciences in five countries, the Foundation has appropriated more than 2·6 million dollars in 1963 in addition to 515,000 dollars for the International Rice Research Institute. These projects include the Mexican Agricultural Programme, now in its twentieth year, and similar projects in Colombia, at first concentrated on corn, wheat, potatoes and beans, but now yielding results from livestock research of great value in improving beef and dairy cattle, poultry, sheep and swine, Chile (concentrated on wheat and forage legumes and grasses), and India, where hybrid maize varieties adapted to all the major agricultural regions have been developed.

During 1962, 723 persons from 58 countries held Foundation fellowships and scholarships, of which 265 were new awards; of the total, 298 were in agricultural sciences and 231 in medical and natural sciences; 3·2 million dollars were appropriated for these activities.

* The Rockefeller Foundation. President's Review, 1962. Pp. v+87. (New York: The Rockefeller Foundation, 1962.) See also p. 97 of this issue of *Nature*.

CONGENITAL ABNORMALITIES

THE decreasing rate for infant mortality in Great Britain and other parts of the world is bringing greater interest to bear on congenital abnormalities, which, apart from the effects on the children, cause so much distress to their parents. The greater part of the August issue of *The Practitioner*[1] is taken up with a symposium on the subject.

As C. O. Carter points out, it was not until 1956 that new cytological techniques confirmed that human beings have a normal complement of 46 chromosomes. Non-disjunction may result in gametes being produced possessing 22 or 24 chromosomes. Other abnormalities arise through fragmentations, with parts of separate chromosomes coming together in irregular ways, the remaining bits becoming lost. About 2 per thousand babies are trisomic for the sex chromosomes, of the patterns *XXX*, *XXY*, and *XYY*. Some of these arrangements produce no obvious defect, but all *XXY* persons suffer from Klinefelter's syndrome, with a eunuchoid body build and azoospermic testes. In contrast to these, *XO* individuals exhibit Turner's syndrome, with dwarfism and abnormalities of the heart and kidneys. About 2 per thousand babies are either trisomic for autosomes such as *G*21, *E*18, and *D*15, or they may have a compound of chromosomes *D*15 and *G*21, from which other parts may be lost. All these are held to be suffering from Down's syndrome, exhibiting a great variety of derangements, such as deafness, polydactyly and mosaicism. As Carter suggests, these findings provide some limited scope for genetic counselling.

The most familiar case of abnormality associated with a chromosome derangement is that of the infant mongol. This is discussed by A. J. Keay. The affected children have 47 chromosomes, probably through the trisomy of *G*21. The clinical signs are easily recognized, and the intelligence quotients of the affected children range from about 25 to 68. These children are cheerful and responsive to affection; they all should be given some chance of responding to educational care. The risk of producing a mongoloid child depends on the age of the mother, amounting to about 1 in 1,000 for young women and rising to around 1 in 50 for those of more than 40 years.

The existence of inborn errors of metabolism inherited on a Mendelian basis was first noticed by Fölling in 1934. That was a case of phenylketonuria. The frequency of incidence is about 1 in 30,000, and the disease is now known to be due to a recessive gene which leads to an inability to metabolize phenylalanine properly, and the affected children show hypertonicity of the muscles and are on the verge of imbecility. They respond favourably to a diet low in phenylalanine if it is started sufficiently early. This and other inborn errors of metabolism are described by A. Goldberg. They include alkaptonuria, non-endemic familial cretinism with goitre, some forms