

neutrons capable of producing fission are available, permitting the surge to be held to a safe level. For this reason, the reactor is said to have self-limiting operating characteristics.

### Research in Tropical Medicine

THE U.S. National Academy of Sciences-National Research Council is to organize a major survey of needs in the field of tropical medicine, under the direction of Dr. W. H. Wright, who recently retired as chief of the Laboratory of Tropical Diseases, National Institutes of Health. The survey will embrace the fields of infectious and parasitic diseases, veterinary medicine, and environmental hygiene. It will include surveys of disease problems in tropical and sub-tropical areas of significant importance to public health and to agricultural and industrial development; of funds expended for medical care and disease control; of financial support for research in medical and hygienic problems of the tropics; of fellowships, teaching programmes, and training facilities; of careers and incentives; of the impact of travel and migrations on tropical disease problems; of the importance of tropical medicine to the economy and man-power situation in the United States. On the basis of these findings it should be possible to assess the need for domestic, foreign and international measures to deal with the problems defined in the survey.

### Scientific Linguists in the United States

AN inquiry by the National Science Foundation into the knowledge of foreign languages possessed by American scientists indicates that 97,000 of the 127,000 on the National Register of Scientific and Technical Personnel during 1954-55 (probably more than half of all American scientists) possessed a knowledge of at least one foreign language, German being the commonest, and French coming next. In psychology and the earth sciences, proportionately greater numbers reported knowledge of French, Spanish and other Romance languages, but only about 1 in 50 reported a knowledge of Russian and fewer than 1 in 100 of Chinese.

### Science Laboratory Technicians

THE City and Guilds of London Institute and the Institute of Science Technology announce that they have taken important steps to rationalize their examinations and qualifications for science laboratory technicians. Hitherto, both Institutes have held such examinations, but in future there will be only one series, held by the City and Guilds of London Institute on behalf of both Institutes. The conduct of the examinations and their further evolution will be under the guidance of a joint advisory committee of both Institutes and the certificates awarded to successful candidates will bear the heading: "The City and Guilds of London Institute in conjunction with the Institute of Science Technology". Transitional regulations have been agreed to ensure that no student at present preparing for the examinations of the Institute of Science Technology suffers because of the new arrangements. The arrangements for the award of the Fellowship of the Institute of Science Technology remain unchanged.

### Soddy's Cubic Equation Machine

FREDERICK SODDY was always looking beyond the borders of his main field of activity, and on several

occasions he invaded mathematics. He took a great interest in locating circles within circles, and in calculating the radius of an inside circle he derived a cubic equation, which suggested the possibility of using a geometrical construction for solving the associated cubic equation. He thereupon made a machine with strings and pulleys which, when set with magnitudes derived from a cubic with numerical coefficients, would indicate the corresponding roots if they were all real. After the Second World War he made a machine with pivoted levers and scales which did the same operation without employing strings. In his will he provided for the exploitation of this machine, but this proved impracticable, largely because of the speed with which actual cubic equations can be solved with electronic computers, and his device required some calculations before it could be properly set. His attempt is, however, of some historical interest, and the model has been handed over to the Science Museum.

### Applied Mathematics in the Soviet Union

APPRECIATION in the West of the substantial contributions made by Soviet scientists to the study of topics in applied mathematics, such as, for example, the mathematical theory of elasticity, has sometimes been delayed by linguistic difficulties; the summaries available give valuable indications of content, but not always of method. The American Society of Mechanical Engineers has secured a grant from the National Science Foundation which will enable the Pergamon Institute to translate the important periodical, *Prikladnaia Matematika i Mekhanika* (Applied Mathematics and Mechanics), and to publish it as a bi-monthly journal. The aim is to give an exact translation of the original papers, with editorial glosses or comment kept to a minimum. The present series begins with Vol. 22 (No. 1; 1958) of the original, which contains papers accepted during 1956 and 1957, so that translation and re-publication do not seem to have added substantially to the normal time-lag between acceptance and publication. The enterprise should prove of great value to mathematicians in Great Britain and the United States. The annual subscription is 35 dollars or £12 10s., and orders can be placed with the Pergamon Press in London or New York.

### Educational Research

FIRST launched some three months ago, this new journal contains information about educational research which should be of interest to practising teachers, local authorities, administrators and other educationists. The articles are particularly valuable because they indicate what may be accepted as established fact, what may reasonably be inferred, and the bearing of the topics referred to upon the day-to-day life of the school and the thought and practice of the teacher. The February issue of the journal (1, No. 2) describes the effects of size of class on teaching, differences between education in town and country, how children understand numbers, and compares the methods of teaching reading. The contributors include well-known educationists, including Sir Cyril Burt and Dr. C. M. Fleming. Future issues are to include articles on the teaching of modern languages; research in technical education; the gifted child; bilingualism; testing attainment; and children's vocabulary. The new journal is issued three times a year in step with school and college