University and the Christian Medical College, Ludhiana, while one of 250,000 dollars to the Massachusetts Institute of Technology, for medical and biological research, was for the construction of a 1,000 kilowatt nuclear reactor at Boston, which would project a beam of nuclear rays into a therapy room underneath.

Some rather substantial grants of a general character made in 1956 were for the library at the international zoological station, Naples; for biological research at Amherst; for research in the natural sciences at the University of Mexico; and for biology, experimental medicine and surgery at Copenhagen. The largest of three grants for investigation of ways of meeting the nutritional requirements of children, especially during the critical years after weaning, was to the National Research Council and is being administered in close co-operation with the global programme of the United Nations Children's Fund. About 1,250,000 dollars were appropriated for field studies of viruses and basic research in virology. This included aid to collaborating groups.

In 1956 a further co-operative agricultural programme was started at the Indian Agricultural Research Institute, New Delhi, the first interests of which will be to improve the corn, wheat and other cereal crops and broad questions of advanced agricultural training and research. Under the Mexican co-operative programme, more than 400 young Mexicans and some 85 other young scientists from Latin America and the United States have received training. During 1956, 204 individuals from 30 countries received fellowships, scholarships or other study and travel grants in agriculture. Besides its participation in various types of international exchange in this field, such as the conference of 50 leading pathologists from Latin America, the United States and Canada on cereal rusts, the Foundation made numerous grants to institutions. These included 300,000 dollars to the College of Agriculture, University of Chile; 250,000 dollars to the College of Agriculture, University of the Philippines; and 200,000 dollars to the School of Agriculture, Universidade Rural de Minas Gerais, Brazil. A three-year grant of 153,600 dollars was made to the Harvard Graduate School of Public Administration to assist a seminar offering advanced training in new methods of water conservation and management.

In the social sciences, a grant of 98,400 dollars to the Computer Centre, Massachusetts Institute of Technology, was for further exploration of the uses of an advanced high-speed digital computer in solving theoretical and applied problems in the social sciences. A grant of 150,000 dollars to Vanderbilt University was for its Institute of Research and Training in the Social Sciences; of 114,000 dollars to Tulane University of Louisiana, for Latin American, legal and social studies; of 96,000 dollars to Stanford University, for its Food Research Institute; and of 50,000 dollars to the International Bank for Reconstruction and Development for its Economic Development Institute. The largest grant for international understanding in the United States in 1956 was one of 205,000 dollars over six years to the Harvard University Centre for Middle Eastern Studies, while 140,000 dollars went to the Federated Theological Faculty of the University of Chicago for inter-religious studies. The American University of Beirut received 216,000 dollars in continued support of its Arab studies programme.

ONTARIO RESEARCH FOUNDATION

REPORT FOR 1956

THE annual report of the Ontario Research Foundation for 1956* includes, besides the report of the director of research, Dr. H. B. Speakman, the financial statement and lists of papers published during 1956, with details of professional and technical staff, advisory committees, scholarships and post-graduate grants in science, 1956–57. In the Department of Biochemistry, where work for the tanning industry increased, progress was made in a group project on the production of sole leather with increased resistance to wear. The oils and fats laboratory has been investigating the production of a spread for use on Army biscuits, manufactured if possible from Canadian raw materials. It has also been studying the autoxidation of methyl isolinoleate, linoleate and oleate, using the Warburg respirometer, and the separation by gas chromatography of the volatile substances produced during the deterioration in flavour of fats and oils. A study of the fermentation of cheese whey was completed.

In the Department of Chemistry progress was made both in the development of methods for separating and determining different constituents of waste sulphite liquor and in evaluating the lignin components as sources of tanning agents and dispersing agents. Work also continued on the production of organic polymers, and the Foundation is supporting the design and construction of an atmospheric X-ray spectrometer incorporating an electron gun. Application of improved techniques developed for the analysis of condensed phosphates in fundamental studies of phosphate glasses, solutions and crystalline compounds led to the conclusion that there is a remarkable similarity in the dependence of the molecular-weight distribution of the glassy phases on their cation to phosphorus ratio.

Studies of the mechanism of fatigue failure of metals advanced considerably, and it was shown that a strong magnetic field affects the fatigue strength of ferritic metals. Basic research in the X-ray laboratory was concerned mainly with X-ray spectrographic studies, and more time was given to an investigation of the initial stages of oxidation on a metal surface.

In the work on parasitic nematodes, a minute nematode, *Aproctella stoddardi*, was recovered from a ruffed grouse, and is believed to account for one of the microfilariæ previously described as occurring in this bird. Low dosages of 'Daraprim' comparable to those effective against human malaria did not prevent infection from *Leucocytozoon simondi* developing in ducks, and particular attention was also paid to the relation between the time of infection and the prevalence of blood-sucking insects known to feed on ducks.

Work was commenced on the composition of the sand fraction from glacial tills and comparable water-laid sands, while studies continued on the relation between variety and yield of soybeans. In textile research, the Sigma Unevenness Tester, previously developed, was used in a survey of worsted yarns produced in Canada, and to a limited extent in the United States and Europe.

* Ontario Research Foundation. Annual Report, 1956. Pp. 31. (Toronto: Ontario Research Foundation, 43 Queen's Park, 1957.)