PLANNING PROGRESS
for the
INDIAN OCEAN EXPEDITION

The International Indian Ocean Expedition, sponsored by the International Council of Scientific Unions' Special Committee on Oceanic Research and by UNESCO, is taking definite shape. With investigations scheduled throughout the period 1960-1964, ten reconnaissance cruises have already been completed. Virtually every nation and colony around and in the Indian Ocean has indicated, at least unofficially, that it will participate. Seven additional countries outside of the Indian Ocean area will make substantial studies with their own ships and scientists, and other countries will provide scientific parties.

Levels of participation fall into three categories. Nations providing ships and scientific parties include Australia (at least 2 ships), East Africa (1), France (2), Germany (1), India (5), Indonesia (1), Japan (at least 5), Pakistan (3), Portugal (1), South Africa (4), U.S.S.R. (at least 4), the U.K. (at least 4), and the U.S. (at least 10). These are the major participants.

In the second category are those countries and colonies bordering on the Indian Ocean which will participate through making observations on tidal changes and upper atmosphere meteorological phenomena. Two networks of shore bases around and in the Ocean are being developed for this purpose. The Indian Ocean nations will also offer special hospitality and facilities for visiting ships of the Expedition. Countries undertaking these responsibilities only will probably be Burma, Ceylon, Malagasy Republic, Malaya, Mauritius and dependencies, Mozambique (through Portugal), and Thailand. In addition, through British Colonial or Commonwealth connections some observations will be carried out in Oman, the Laccadive, Maldives, and Seychelles Islands, through French contacts at Amsterdam and Kergulien Islands, and in the Andaman Islands through India.

Nations providing scientific parties without ships include Denmark, Israel, Nationalist China and possibly Canada. Some of the smaller nations around the Indian Ocean will participate in training and research on other nations' vessels. The United Arab Republic also has expressed interest in participation. Thus, as of early 1961, approximately twenty-five countries with over forty four vessels appear to be participants in this international venture. More than sixty individual cruises will probably be carried out.
Most nations have established National Committees of scientists and government administrators who will design their research programs and will obtain funds, scientific staff, equipment and facilities to carry out the research. At meetings of SCOR's Indian Ocean Working Group in Scandinavia in the summer of 1960, international agreement was reached on a basic minimum program in each of the disciplines involved. Subsequently most nations have expanded and detailed their own plans.

Reasonably complete coverage of the entire Indian Ocean to at least $40^\circ$ S can be expected and efforts are being made by SCOR and through collaboration with ICSU's Special Committee on Antarctic Research (SCAR) to investigate as far south as $56^\circ$ S. Close cooperation is being maintained with the World Meteorological Organization, the Food and Agriculture Organization of the United Nations and the International Association of Meteorologists and Atmospheric Physicists.

The scientific effort is designed to obtain a better understanding of the entire "heat engine" which is the Indian Ocean and its atmosphere together with its boundaries. Thus, studies will be conducted in the fields of marine geology, geophysics and bathymetry; physical and chemical oceanography; biological oceanography; and meteorology from the air-sea interface to the upper atmosphere. Several hundred scientists in these disciplines throughout the world are already engaged in planning for future cruises and in analysis of past investigations. In the United States, for example, 31 scientists in five Working Groups have drawn up a substantial national plan in consultation with many more specialists in various marine research laboratories. Over one hundred American biologists have thus far expressed an interest in some type of participation.

With the exception of some of the countries bordering on the Indian Ocean, there will be relatively little ship activity during 1961. However, by mid 1962 full scale operations by virtually every participant will be under way. These will continue through 1964. During the 13 months from 1 February 1960 to 1 March 1961 the Coordinator made 58 visits to 40 countries, 27 of which are directly involved in the Expedition. Active interest by scientists and governments is developing rapidly and full detailed plans for each nation's program should be available by the summer of 1961.

The Expedition's findings will be presented in atlas form together with collected volumes of individual scientific papers. Further important outcomes are the development of a body of trained scientists and technicians within the Indian Ocean area to continue oceanographic research; the development of existing and new institutions in this region, including a biological classification center and reference collection; and presumably the beginning of a better understanding about some of the natural factors which affect the existence of that quarter of the world's population living in the countries bordering on the Indian Ocean.

BGS/jas
15 March 1961