PLAN OF ACTION

The major problems to which the U.S. International Biological Program addresses itself are stated in the preceding section of this report. This section describes the actions planned by the U.S. Committee and its subcommittees to initiate, encourage, and in some cases to carry out projects to attack these problems. The activities are grouped under separate headings for each subcommittee.

A series of working conferences will be one of the primary methods used by the subcommittees to encourage the development of research projects. Participants will be asked to describe proposed research, specify the data that are to be acquired, and agree on the methodologies that seem most likely to be successful. These conferences and the reports of their proceedings will enable scientists to (1) assess the relevance of their current research to the theme of the International Biological Program, (2) reorient that research if they desire, and (3) propose new essential projects.

ENVIRONMENTAL PHYSIOLOGY

The Environmental Physiology Subcommittee plans a series of working conferences to (1) develop specific, detailed research programs; (2) identify needed improvements in methodology; (3) prepare appropriate proposals and budgets; and (4) stimulate individuals and organizations to participate. As appropriate, these conferences will be sponsored in cooperation with other subcommittees.

Physiological Analysis of Marine and Estuarine Populations

This conference will deal with physiological resistance and performance adaptations of marine and estuarine species to geographical and biotic factors—temperature, light, hydrostatic pressure, streaming velocity, substratum, food supply, and salinity. It is anticipated that a research program centering on the analysis of physiological adaptation in populations from a wide range of marine environments will be established. The conference will be held at the Duke University Marine Biological Laboratory in Beaufort, N.C. A plan for its organization has been drafted by John Vernberg (Duke) and Carl Schlieper (University of Kiel). The Environmental Physiology Subcommittee representative is C. Ladd Prosser (University of Illinois); the Productivity of Marine Communities representative is V.E. Brock (University of Hawaii). The target date for the conference is the summer of 1967.

Physiology of Colonizing Species

This conference will examine in depth the physiology of species currently expanding into new areas, including some introduced by man. Some are cosmopolitan, others more restricted. As a basis of comparison, the analysis will include several species whose ranges do not appear to be expanding. To some extent, the conference can be considered an outgrowth of the international conference on the Genetics of Colonizing Species held at Asilomar, Calif., in 1964. It will be devoted primarily to selection of species for study and of measurements to be made, and to developing international cooperation in field and laboratory studies. Calvin McMillan (University of Texas) and E. O. Wilson (Harvard University) will be organizers. The Environmental Physiology Subcommittee representatives are Frank Blair and Herbert Baker. The Systematics and Biogeography Subcommittee has indicated its concurrence and support. This conference is tentatively scheduled for 1967.

Environmental Extremes

This conference will deal with the physiological bases for tolerance in plants, animals, and microorganisms of environmental hypoxia, high salinity, aridity, and other factors. Plans for eco-physiological experiments will be developed. It is anticipated that this conference will be cosponsored by the National Aeronautics and Space Administration and that the organizer will be Dale Jenkins, of