

cal surveys in Southeast Asia, the lower Amazon, Venezuela, Africa, and elsewhere. For various tropical regions identification manuals for field ecologists and epidemiologists are required to facilitate field work, encourage collections, and promote solutions to taxonomic and zoogeographic problems.

In Panama, largely through the field work of Alexander Wetmore and Charles O. Handley, Jr., the classification of birds and mammals has been nearly completed. Handley's book on the mammals of Panama, which includes keys, chorology, and ecological information, is expected to be published in 1968. Similar works are not available for most countries in the tropics. Wetmore's first volume on the birds of Panama has been published and two more volumes are forthcoming. A field guide as a supplement to Wetmore's important work is needed to facilitate field identification.

In the last decade increased emphasis has been placed on ecological studies of tropical birds and mammals in relation to problems of public health. Most of this interest has concerned birds and mammals as reservoirs for arthropod-borne viruses and other diseases, and as hosts for various ectoparasite vectors of disease. There is a paucity of knowledge concerning population dynamics, reproductive cycles, predator-prey relationships, food chains, and life histories.

A critical shortage of trained mammalogists and ornithologists exists in the tropical areas of the world. Ultimately, basic work in these fields must be undertaken by citizens of the countries involved, not by visiting scientists. Development of scientific manpower resources in tropical countries of the New World can be encouraged through collaborative programs involving the Organization of American States, the Smithsonian Institution, the Organization of Tropical Studies, and various regional educational institutions.

Future ecological surveys in tropical regions should be planned, at least in part, to include site developments, interdisciplinary collaboration, reasonable standardization of techniques for collecting field data, improved processing of specimens and automatic data processing.

Reptiles and Fishes (moderated by J. A. Peters)

A world program in tropical biology should be based on the following statements of organization.

1. There should be a continuous, thorough assessment of the composition of the biota of the tropics, upon which further accumulation of knowledge must be based.

2. There should be a continuous focus on those problems in biology that are most likely to be solved by carrying on their investigation in the tropics.

3. There should be an increase in the encouragement of the talents of actual and incipient scholars originating in the countries within the tropics, through training grants, scholarships, fellowships, and grants-in-aid for research.

The panel recommended the development and maintenance of natural areas in the tropics to perpetuate and preserve habitats and species. Such reserves would facilitate comparative investigations throughout South and Central America.

Considerations should be given to the establishment of supported chairs in Latin American universities to encourage the development of scholars with the time, opportunity, and finances to carry on research and graduate instruction in tropical biology. The determination of the occupant of the chair should be under complete control of the university concerned, and it was recommended that the occupant be preferably a citizen of that country.

Entomology (moderated by W. D. Duckworth)

The enormous diversity of insects is such that entomologists have a severe problem in systematics, thus making it difficult to coordinate with and to collaborate with more diverse and advanced studies in the tropics all over the world. Programs involving specific type-site studies in various ecological habitats of the tropics seem to be the most desirable way to develop cooperative programs. Large numbers of entomologists are already at work in the tropics, many of whom are located in mission-oriented operations related to health and agriculture, yet the manpower resources in entomology are seriously inadequate for the task ahead. Insufficient effort has been made to identify entomologists, their places of activity, and their research work as a basis for coordinating programs and collecting information into a useful whole for all persons interested in tropical habitats.