

taining a detailed description of 'The Anatomy of *Opisthopatus cinctipes* Purc., with notes on other, principally South African, Onychophora,' by W. F. Purcell, including the color variations, number of legs and distribution of the species. Part V. contains a 'Description of New Species of South African Pselaphidæ,' by Achille Roffray; 'Description of Seven New Species of the Family Mutillidæ,' by L. Péringuez, and 'Description of a New Species of the Genus *Japyx*,' by the same author.

F. A. L.

AQUATIC RESOURCES OF THE HAWAIIAN ISLANDS.

IN compliance with a resolution of Congress, Hon. George M. Bowers, United States Commissioner of Fish and Fisheries, is arranging to send an expedition to the Hawaiian Islands to make a comprehensive study of the fishes and other aquatic resources of those islands. The investigations will be under the immediate direction of Dr. David Starr Jordan, President of Stanford University, and Dr. Barton W. Evermann, the ichthyologist of the Commission, who will have the assistance of a number of experts.

It is the intention to make the investigations sufficiently comprehensive to enable the Commission to publish a very exhaustive report on the subject. The investigations during the present summer will be by shore parties and will pertain chiefly to the following lines:

1. A thorough qualitative and quantitative study of the commercial and shore fishes, mollusks, crustaceans and other aquatic animals and plants. Attention will be given to the actual and relative food values and commercial importance of the different species, their migrations, spawning time and place, food, feeding habits, enemies, maximum and average size, and other important facts in their life-histories.

2. The methods, extent and history of the fisheries, the kinds of apparatus used, the manner of using each and the species taken in each; the manner of caring for, and disposing of, the catch; the statistics of the fisheries, value of each kind of apparatus; number and nationality

of people engaged in fishing; quantity and value of each species caught, and prices paid the fisherman, also the wholesale and retail prices; and changes in the methods of the fisheries since the coming of Americans, Europeans and Asiatics to the islands will be investigated.

3. The development of proper and just fishery laws will receive special consideration; the history of fishery legislation, including the system of tabu, and the present laws and methods with reference to each species covered by any law, special or general, and the possibility of trade in fishery products with the United States, improvement in the methods of the fisheries, and the methods of handling and marketing the fish will receive careful consideration. Attention will also be given to the possibility of fish-cultural operations with reference to such species as may be in danger of extinction or serious diminution.

Drs. Jordan and Evermann will sail for Honolulu May 30th and remain until September, when they will return to America and submit a preliminary report to Commissioner Bowers. Subsequently, they will return to Honolulu with the *Albatross* and make a study of the deep-water fauna of the islands.

The other members of the present expedition will be Dr. O. P. Jenkins, of Stanford University, Messrs. E. L. Goldsborough and John N. Cobb, of the United States Fish Commission, and Messrs. A. H. Baldwin and C. B. Hudson, who will paint in life colors the more important food-fishes of the islands. Messrs. Hudson and Baldwin are the artists who made the very accurate and beautiful colored drawings reproduced in Dr. Evermann's recent book on the Fishes and Fisheries of Porto Rico, of which Congress ordered the printing of an extra edition of 7,500 copies. It is expected that the Hawaiian report will be even more handsomely illustrated than is the report on Porto Rican fishes.

4. Mr. William H. Ashmead, Assistant Curator, Division of Insects, U. S. National Museum, will also accompany the expedition, and will make special efforts toward increasing our knowledge of the insect fauna of the archipelago.