

DISCUSSION AND COMMUNICATIONS.

THE SCRIPPS INSTITUTION OF OCEANOGRAPHY OF THE UNIVERSITY OF CALIFORNIA.

On the shore of one of the most picturesque of the little bays on the coast of Southern California and two miles from the beautiful city of La Jolla is situated the only oceanographic institution in America and one of the few of its kind in the world. This locality is particularly favorable for research on the sea and its inhabitants, not only because of its natural physical charms, with towering cliffs undermined by the action of the waves and eroded into caverns, with adjacent alluvial plain and rugged mountains, level mesas and precipitous canyons, but also because it has easy access to the greatest variety of marine topography. Muddy bays and sandy beaches, rocky tide pools and immense kelp beds, with an ocean floor descending rapidly to considerable depths, are near at hand. Its climate, too, is unsurpassed and conducive to sustained activity both in summer and in winter.

The institution is the outgrowth of the Marine Biological Station of the San Diego Natural History Society. Supported by generous gifts from members of the Scripps family, and including 177 acres of land, the station became a part of the University of California in 1912, under the directorship of William E. Ritter. It was then known as the Scripps Institution for Biological Research and in its earlier years the activities of the staff of investigators were devoted primarily to marine biology and animal genetics, with some attention to the physics and chemistry of the ocean water.

During these years a preliminary biological survey was made of the coastal and off-shore waters, and a large number of previously undescribed species of the various groups of marine organisms were made known to science. Particular attention was given to the plankton. During this period also physico-chemical and meteorological data were collected and the foundations laid for the more extended work in these fields which has been prosecuted uninterruptedly until the present time.

With the retirement of Director Ritter and the appointment of the present director, Dr. T. Wayland Vaughan, the scope of the investigations became more preponderantly of an oceanographic character and in 1925 the name of the institution was changed to its present title, which is indicative of the future program of the institution's activities, embracing all aspects of oceanographic research, some of them being of very great economic importance.

Ample facilities for many of these investigations are already available. A two-story laboratory building with the necessary

aquaria and an abundance of pure sea water is well equipped for a dozen or more investigators; a library-museum building with an exceptionally complete series of journals, particularly in zoology; a concrete pier, 1,000 feet in length; a 65-foot boat of 22 tons capacity, which gives ready access, in this region of placid seas, to ocean depths of considerable magnitude; modern apparatus for obtaining temperature records, bottom samples and plankton to a depth of 1,000 fathoms; a hydrographic and meteorological station at the end of the 1,000-foot pier, with thermographs for surface and bottom temperatures. A second thermograph is carried on a liner plying between San Francisco and Honolulu, while a third is established at Balboa, California. With these instruments an extended test as to the correlation of ocean temperatures and subsequent precipitation on the California coast is to be made. A seismograph is installed for recording the oscillations of the earth's crust in this region of surface instability.

Hydrographic data and water samples for analysis are daily taken at several points on the coast, between San Diego and Alaska, while naval transports and lighthouses supply extensive hydrographic and meteorological data. The tabulation of these observations through a series of years, correlated with similar records collected by Japan and other countries bordering the western Pacific, promise to shed much light on the origin and movements of cyclonic disturbances approaching our western coast and determining the weather conditions over the entire country.

Some of the other economic problems within the sphere of investigations of the institution relate to the fisheries and other industries dependent upon marine products, the origin of useful substances through geological agencies on the ocean floor, the cause and course of ocean currents as affecting commerce and navigation, and a multitude of allied topics. The chemistry and physics of the sea form the basis for all investigations of this nature, and these fundamental problems are receiving special consideration.

Much attention has been given to the plankton, not only because of its scientific interest but also because of its economic importance in forming the elemental materials upon which the food supply of fishes directly or indirectly depends, while a major investigation dealing with animal genetics has been in progress from the early days of the institution and has yielded results of wide biological significance.

The published contributions to science by the distinguished group of workers who have been connected with the institution form a record of remarkable activity and progress. The results of the research by members of the regular staff embrace more than 200 papers and monographs, while numerous investigators

from all sections of the United States and from several foreign countries, who have found here the opportunities for solving some of their most important problems, have published many more. The institution itself maintains its own series of bulletins, although a large portion of the work of the staff is published in other journals.

Finally, though by no means the least important, are the provisions for the physical welfare of the investigators. Groups of comfortable cottages overlooking the blue Pacific are provided for the members of the staff and for visiting scientists at a nominal rental—an intellectual colony with an atmosphere highly conducive to successful accomplishment. The writer after nearly a year in these inspiring surroundings takes pleasure in recording the cordial hospitality afforded to the visiting investigator and the generosity with which the abundant facilities of the institution are placed at his disposal.

WESLEY R. COE.

OSBORN ZOOLOGICAL LABORATORY,
YALE UNIVERSITY,
NEW HAVEN, CONN.