

THE STORY OF SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA - CALIFORNIA

(After a Paper by Professor GEORGE F. McEWEN published in *The California Monthly*,
March, 1937).

Many visitors come to the Scripps Institution of Oceanography and ask questions like the following: What work is being done here? Of what general use or interest is it? How many students are attending this school? How is it supported? In outlining a few of the highlights of the Institution's history I hope to contribute something towards the answers to these questions.

In 1891, a young professor, Dr. W. E. RITTER, was called to the newly formed department of biology at the University of California.

Only a meagre beginning had then been made toward biological research in the West of the U.S.A. Dr. RITTER immediately organized various groups of scientists for collecting and studying the marine life, at first in the most accessible region of San Francisco Bay which, however, did not contain many of the plants and animals most characteristic of the open ocean. Accordingly numerous collecting trips were made along the coast north to Alaska and as far south as San Diego from 1896 to 1901. Since this experience pointed to San Pedro as an especially favorable centre from which to carry on marine investigations, a seaside laboratory was temporarily established there, and considerable dredging of the sea bottom and collecting of floating life by means of nets was carried on in the southern California region. These experiences pointed definitely to the need of establishing a permanent, well-supported seaside station.

In 1900 strenuous efforts made to secure sufficient funds in Los Angeles for a permanently established station properly equipped for carrying on such marine investigations failed. In 1903, better accommodations were found at Coronada near San Diego, a local organization was formed, with Dr. RITTER as Director, for the purpose of making a biological and hydrographic survey of the waters of the Pacific adjacent to the coast of Southern California.

Advantages and disadvantages of several possible locations for a permanent station were carefully compared, major considerations being accessibility to typical ocean conditions, and a supply of good ocean water for aquaria. This study led to the selection in 1905 of the village of La Jolla, which was the home of the enterprise from 1905 to 1909; and one thousand dollars was raised for erecting a laboratory in La Jolla, on ground owned by the council of the city of San Diego.

Here the first permanent building, the *George H. Scripps Memorial Laboratory*, was constructed in 1910, so that, during the period from 1891 to 1912 Dr. RITTER translated his vision into a concrete reality: the enterprise had developed from the precarious, uncertain conditions characterizing its earlier years into a recognized institution established on a permanent basis.

The second period began in 1912 when the local organization was turned over to the University of California, and the name was changed from the Marine Biological Association of San Diego to the Scripps Institution for Biological Research of the University of California. On August 6, 1916, occurred the formal dedication of two important additions to the first plant — a concrete pier and a second permanent building to house the library, public museum, and administration offices.

Financial support for the earlier activities came in part from the department of zoology of the University, and in part from private subscriptions obtained in the various communities from which the work was carried on. From 1905 to 1912, during which the first buildings of the present plant were erected and extensive field work was carried on, Miss Ellen SCRIPPS and Mr. E. W. SCRIPPS, actuated by an abiding faith in the benefit to mankind of natural knowledge, provided all of the funds. Since 1912, the Institution has been supported mainly by the State and the SCRIPPS family, and partly by various smaller gifts made from time to time for special purposes.

When in 1905 the Institution was moved to La Jolla, its programme was based largely on problems suggested by the general question of the seasonal variation of indivi-

dual species of marine life, their food and reproduction, distribution in the sea, horizontal and vertical migration, and relation to surrounding conditions, such as light intensity, temperature, salinity, and other physical and chemical factors.

The need of giving special attention to the environment, that is, to the physical and chemical conditions in the sea, led to the addition to the staff, in 1908, of Professor George F. McEWEN, a physicist. Since then considerable attention has been directed, not only to making observations relative to the water, but also to problems of physical oceanography and meteorology suggested by these observations. Recognition of the essential unity, physical, chemical and biological, in the field of oceanography has served to unite the interests of all.

Formal elementary instruction is not carried on by the Scripps Institution, but, since it is a department of the University of California, opportunities are offered to graduate students for advanced work pertaining to the fields of investigation in which the Institution is engaged. Ten students have already received the doctor's degree for graduate work done at the Institution.

Dr. RITTER's retirement in 1923 marked the close of this second period of the Institution's development. But before that, the administrative officers and Regents of the University of California had decided to convert the Institution for Biological Research into one for Oceanographic Research, and the name was changed accordingly. With this in mind, Dr. T. W. VAUGHAN, a research geologist who was especially interested in marine aspects of geology and who had been with the U. S. Geological Survey since 1894, was invited to succeed Dr. RITTER as Director. Under Dr. VAUGHAN's able leadership, beginning early in 1924, important changes in the Institution's policy were initiated. A broad programme of oceanographic research was developed corresponding to the generally recognized scope and function of an oceanographic institution. Of the four major divisions of work, (1) physics of the ocean and marine meteorology, (2) chemistry of sea water and of the small organisms that float in the sea, (3) marine biology, (4) study of the sea in its relation to biology, the first three had been initiated by Dr. RITTER and the last was added after Dr. VAUGHAN became director. The work in marine meteorology under Dr. G. F. McEWEN was expanded with the help of special contributions from organizations interested in hydroelectric power and water supply.

Notable improvements in the Institution's facilities during this period 1924-36 were realized. First among them was the completion in 1932 of a new laboratory building named Ritter Hall; second, was the extensive remodelling of the George H. Scripps laboratory and the purchase in 1925 of a 64-foot gasoline boat of the purseseiner type and its later remodelling and the replacement of the original gasoline engine by a diesel engine. Third, were important additions to the instrumental equipment and to the scientific library.

In September 1936, when Dr. VAUGHAN retired after more than twelve years of distinguished service, Dr. H. U. SVERDRUP, coming from Norway, that famous centre of pioneering and leadership in oceanography, assumed his duties as director. He has won international fame in the field of theoretical meteorology and oceanography, and has shown a broad interest in all phases of the Institution's work. Shortly after he assumed his duties, the Institution had the great misfortune to lose its boat, the *Scripps*, by an explosion and fire. Thus the programme of intensive work at sea which depends upon the use of its own boat was abruptly ended. This loss seriously handicaps the Institution's work at present, and it is imperative that a new and larger boat be obtained, thus enabling the Institution to extend its oceanographic work to greater distances from the coast and to attack larger problems. Earlier work of the Institution has made us realize that we cannot arrive at a clear understanding of the character of coastal waters, their physical and chemical properties, and their function as an environment of marine life without observations in the more distant deep-sea regions. Moreover, it is especially desirable to undertake a systematic investigation of the cold California Current, since virtually nothing is known as to the amount of water carried by this current or its seasonal variations or its changes from year to year. This investigation should also include the warmer water to the south and possible shifts in the boundary between typically different water masses which are found off the coast of southern California. It is hoped that such additional information will prove of value in fishery problems and in problems of weather forecasting. However, the undertaking of such practical applications

must await the accumulation of a large amount of fundamental oceanographic knowledge. This is all in accord with progress toward our ideal of well-rounded comprehensive oceanographic research. On the broad foundations already laid, in consideration of the notable growth and development achieved in the past, and from our good fortune in securing so worthy and able a successor to Dr. VAUGHAN, we at the Scripps Institution look forward to a continued increase in service to our community and state, and to important scientific contributions to the world-wide science of oceanography.

