

EXP. 12/31/84

United States Department of the Interior  
National Park Service

For NPS use only

National Register of Historic Places  
Inventory—Nomination Form

received

date entered

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

1. Name

historic Scripps, George H., Memorial Marine Biological Laboratory

and/or common Old Scripps Building

2. Location

street & number 8602 La Jolla Shores Drive not for publication

city, town La Jolla vicinity of ~~Congressional District~~ 43rd

state California code 06 county San Diego code 073

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input checked="" type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input checked="" type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input type="checkbox"/> other:

4. Owner of Property

name Regents of the University of California

street & number

city, town Berkley vicinity of state California 94720

5. Location of Legal Description

courthouse, registry of deeds, etc. County Recorder

street & number City Administration Building, 202 C Street

city, town San Diego state California

6. Representation in Existing Surveys

title San Diego Historical Site Number 119 has this property been determined eligible?  yes  no

date 1977  federal  state  county  local

depository for survey records City Administration Building, 202 C Street

city, town San Diego state California

# 7. Description

**Condition**

excellent  
 good  
 fair

deteriorated  
 ruins  
 unexposed

**Check one**

unaltered  
 altered

**Check one**

original site  
 moved      date \_\_\_\_\_

**Describe the present and original (if known) physical appearance**

Summary

The George H. Scripps Memorial Building ("Old Scripps"), the original building of the Scripps Institution of Oceanography at its present site, is a plain rectangular 2-story structure of reinforced concrete. It was designed by architect Irving Gill and constructed in 1909-10, under the direction of Perl Acton. From then until 1951, it housed the Director's office, the principal lecture hall, and laboratories in which oceanographic research took place. From 1951 until 1977, when it was vacated, the structure was devoted almost exclusively to laboratory work.

Although the setting of the building has been greatly altered by the growth of the Scripps Institution, the exterior of "Old Scripps" is intact, except for changes in the placement and size of windows. The interior arrangement of rooms has been altered by additions and removals of partitions and many minor modifications. These interior changes have not seriously affected the structure of the building or its most important architectural features. Old Scripps is currently undergoing restoration to a semblance of its original appearance.

General Description: Setting and Exterior

Old Scripps is about 60 feet from the edge of a 15-foot cliff that drops off to a beach bordering the Pacific Ocean. Along with most of the modern buildings at the main facility of the Scripps Institution, the structure rests on a shelf of land between the ocean and hills that rise sharply to a mesa.

The principal land, or east, facade of Old Scripps is five bays (50 feet) and retains its original appearance, except for the substitution of a small window for French doors above the central bay front entrance. Paired windows are a principal feature on both levels. They are set in slightly recessed bays that give the facade the appearance of bearing plain square columns. This same design motif is repeated on the other facades of the structure, except that the north and south sides are 7 bays (75 feet) and have no entrances. The west side, facing the sea, was built to match the east. Certain changes have been made in the fenestration on that side.

\*The physical description and details of building history of Old Scripps, including alterations and restoration proposals, are summarized from George G. Shor, Jr., et al. The George H. Scripps Memorial Marine Biological Laboratory of the Scripps Institution of Oceanography..., SIO Reference 79-26, MPL-U-84/79, La Jolla, Scripps Institution of Oceanography, 1979. Physical details of current appearance were verified by on-site inspection in October 1980 and confirmed by letter in January 1982.

# 8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input checked="" type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

**Specific dates** 1909-10 **Builder/Architect** Perl Acton/Irving Gill

**Statement of Significance (In one paragraph)**

Summary:

This unpretentious concrete building, the first permanent structure erected for the Scripps Institution of Oceanography, is the oldest in continuous use by a major oceanographic research institution in the United States, and probably the world. From the time of its construction, in 1909-10, until the early 1950s, "Old Scripps," which houses the former Director's office and the principal lecture room, was the prime focus of activity at Scripps. It witnessed the evolution of the institution from a small marine biology station into a multidisciplinary deep-sea oceanographic institution. Many of the Nation's most prominent oceanographers (including 11 members of the National Academy of Sciences) and their foreign colleagues have worked and studied in the structure.

In addition to its associations with Scripps' scientific successes and the establishment of the first degree-granting oceanographic education program in the United States, the building would bear further scrutiny as a remaining work by architect Irving Gill, and for its engineering importance as an early remaining example of the Kahn system of reinforced concrete construction. It is also the historic heart of the campus of the University of California at San Diego, of which Scripps constitutes a part.

Historical Summary:

Oceanography, the science that seeks to conquer "inner space," embraces an array of disciplines applied to the study of the sea. Scripps is a pioneering representative of this fairly new science that has matured rapidly.\* Popular writers on the subject describe the institution in terms such as: "the leading oceanographic institution in the United States--perhaps the world."<sup>1</sup>

Historically, the emergence of the Scripps Institution is related to the work of a large number of individual scientists, but particularly to the skills and policies of the scientist-Directors who led it during its early years: William Emerson Ritter (1903-23), its founder; Thomas Wayland Vaughan (1924-36), under whom Scripps became the first true oceanographic institution in the United States and began the Nation's first oceanographic degree program; and Harald U. Sverdrup (1936-48), who emphasized

\*The newness of the field may be shown by a simple statistic. In 1950, despite considerable expansion during and immediately after World War II, there were fewer than a hundred oceanographers in the United States. National Academy of Sciences, Committee on Oceanography, Oceanography, 1951, National Academy of Sciences-National Research Council Pub. No. 208, Washington, D.C., National Academy of Sciences, 1952.

# 9. Major Bibliographical References

See continuation sheet.

# 10. Geographical Data

Acreeage of nominated property .09 acre (4,000 sq. ft.)

Quadrangle name La Jolla

Quadrangle scale 1: 24,000

## UMT References

A 

1	1	4	7	6	3	0	0	3	6	3	6	1	6	0
Zone		Easting				Northing								

B 

Zone		Easting				Northing								

C 

Zone		Easting				Northing								

D 

Zone		Easting				Northing								

E 

Zone		Easting				Northing								

F 

Zone		Easting				Northing								

G 

Zone		Easting				Northing								

H 

Zone		Easting				Northing								

## Verbal boundary description and justification

See continuation sheet.

## List all states and counties for properties overlapping state or county boundaries

state	code	county	code
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state	code	county	code
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# 11. Form Prepared By

name/title James H. Charleton, Historian

organization Division of History, National Park Service date February 12, 1982

street & number 1100 L Street, NW

telephone (202) 523-5165

city or town Washington,

state DC

# 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national     state     local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title \_\_\_\_\_ date \_\_\_\_\_

For NPS use only

I hereby certify that this property is included in the National Register

date \_\_\_\_\_

Keeper of the National Register

Attest:

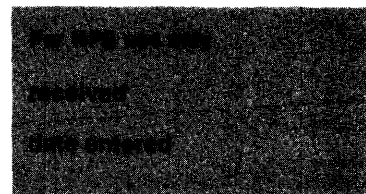
date \_\_\_\_\_

Chief of Registration

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Title: National Register of Historic Places PH0504254

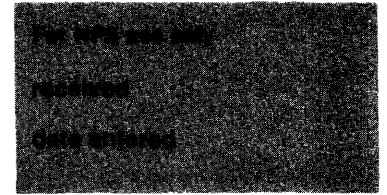
Date: 1977                      X State

Depository for Survey Records: National Register of Historic Places, 440 G Street, NW,  
Washington, DC 20240

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Original Interior Appearance

The long axis of the Old Scripps building runs east and west. On the ground floor, a central corridor 12 feet in width follows this axis through the structure. Ten feet inside the recessed east entrance, a set of plain wide concrete stairs rises from the corridor to the second floor and opens in an upper floor corridor (12 by 37 feet), which is aligned along the long axis of the structure over the east part of the first floor corridor. The arrangement of both corridors is intact.

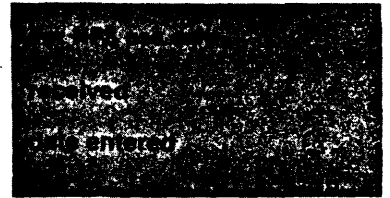
An explanation of the layout of the rooms, as constructed, is instructive, because it facilitates explanation of highly functional design features that give the building much of its architectural interest. The portion of the first floor to the north side of the corridor was divided into six laboratory rooms of equal size. To the corridor's south, in the southwest corner, was the aquarium room (17 by 37 feet), and, to its east, small chambers that served as shop, storage room, darkroom, janitor's room, and toilets. Six investigators' rooms, of the same dimensions as those on the first floor beneath them, opened off the north side of the upstairs hall. At the southwest end of that hall, next to the ocean, was a 32-by-37-foot lecture room, the scene of Scripps' pioneering educational efforts until the 1950s. In the southeast corner of the second floor was the "library," which served as the office of the Directors of the Institution until 1951. Between the library and the lecture room was a smaller room used for the storage of apparatus and glassware.

Dr. William Emerson Ritter, the founder and first Director of Scripps, had not only required that the structure meet a small construction budget, an important factor in the modest and unornamented design that Gill devised, but had been absolutely insistent that good natural lighting be provided for experimental purposes, especially microscope work. Therefore Gill's design contained a number of features that provided extraordinarily good natural illumination. These included: the paired windows and French doors between narrow supporting members; two large iron-framed skylights in the flat roof (one over the second floor corridor, the other over the lecture room); interior windows between the outer rooms and the central corridors; and prismatic-shaped "sidewalk lights," thick pieces of translucent glass set in the upstairs corridor floor, that diffused light from the second floor down into the lower corridor.

History of Alterations and Setting

The Scripps Institution grew up around "Old Scripps" and its nearby concrete watertower, <sup>\*\*</sup> but this first building long remained a key focus of the Institution's activities. The second floor even served as Director Ritter's home, until 1913, when residences were erected on the grounds for him and other members of the staff.

<sup>\*\*</sup>Also designed by Gill, but removed in 1932.

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The second major institutional building, the Library-Museum, was constructed in 1916. It was a 3-story building immediately to the east of Old Scripps, which overshadowed that face of the older structure. The two buildings were not only linked by a walkway on the ground, but also, until 1949, were joined by a second-floor "bridge."

Many minor alterations, mostly after 1930, were made to Old Scripps. These changes eventually obscured the elegant simplicity of its design and negated the lighting features that had been so carefully incorporated in Gill's design. They did not, however, affect the building's basic exterior form or structure.

Certain relatively major alterations took place in 1931-32. Ventilation ducts and fume hoods, as well as radiators, were installed in some of the first-floor laboratories, the west entrance was blocked, and partitions were added to create additional small rooms on both floors. The original 6-pane steel-frame casement windows were also removed and replaced by box frames and double-hung wood sash. Some later minor changes were made in the fenestration. At an unknown date, the "sidewalk lights" were covered with asphalt tile and even their existence was forgotten, and the interior windows and some ocean-side windows were blocked up with plywood. Further rearrangements and subdivisions of the interior space created still more small workrooms.

In 1959, a 1-story, U-shaped, wooden structure finished in rough pine was built immediately adjacent to the ocean front and part way around each side of Old Scripps. This General Services Building, which soon came to be called "New Scripps," with the Library-Museum, almost totally obscured Old Scripps' exterior.

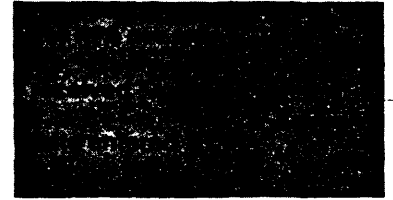
New Scripps is a separate structure, although the two buildings are joined where the west-facing door of the old building opens into the corridor of the new one. To facilitate access to the second floor of Old Scripps, the seafront French doors and balcony that had remained in the center bay of the west facade were removed, and replaced by windows similar to others in the structure; a set of exterior stairs was then added from new doors one bay to the south.

After completion of new facilities elsewhere on the campus in 1977, the 1916 Library-Museum, to the east of Old Scripps, was demolished. Old Scripps was also vacated that year and the same fate was proposed for it. The paramount reason for this proposal was the building's failure to meet seismic requirements of modern building codes, although the faulty condition of the structure's roof, the cramped configuration and unsightly condition of its rooms, and some evidences of deterioration in the concrete were possibly other factors.

Advocates of the preservation of the building began a volunteer effort to document its history and explore the possibility of preserving it. Organized as the Old Scripps Building Committee, they have drawn support from many members of the Scripps Institution-University of California community, alumni, and interested citizens. The Committee

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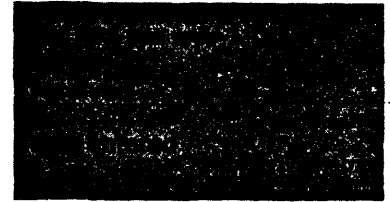
has not only raised a substantial portion of the funds necessary to preserve and restore the building, but has also done much of the physical labor necessary to clean up and stabilize the structure and ready it for restoration. The University, although it has not been able to fund the restoration of Old Scripps, reversed its original decision for demolition and has facilitated the work and fundraising activities of the Committee.

Current Status and Prospects

The Old Scripps Building Committee has removed temporary elements of the interior modifications made to the structure over the years and has arranged stabilization measures, such as epoxy treatment of major cracks in the concrete. The building is being strengthened to bring it into compliance with code requirements. To achieve this strengthening, reinforced concrete thicknesses will be added to the second floor, the roof, and some interior walls. Fortunately, it appears that this can be done with minimal violence to the historic fabric. Because of the basic strength of the original Kahn system of construction, utilizing special reinforcing rods in the concrete, the necessary changes will be barely noticeable.

The restoration, and the promise it holds for the future of Old Scripps, is in the spirit of the architect and the Institution's founders. While not all features of the original plan will be restored, the library-office used by the early Directors will regain its historic appearance and the northeasternmost first-floor room will be restored as a laboratory of the 1909 era. Vital architectural features, such as the skylights and sidewalk lights, will serve their intended functions. The other rooms in Old Scripps will be made available as laboratories and work space for visiting researchers. Thus, Old Scripps will regain the general appearance of its earliest days, while boding well to continue its contributions to the progress of the science with which its name is synonymous.



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deep-sea research, expanded the Institution's educational program, and led its work during World War II. Scripps also owes much of its early success to the citizens of the San Diego area, especially to Edward W. Scripps and his half-sister Ellen Scripps, proprietors of the newspaper chain that bears the family name, who made innumerable benefices to the Institution.<sup>2</sup>

Early Development: Scripps as Marine Biological Station

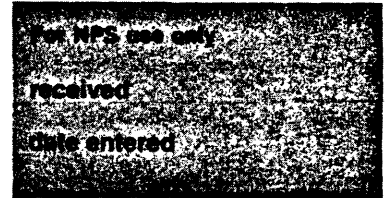
The Scripps Institution grew out of William Emerson Ritter's work in coastal marine biology. A professor of zoology at the University of California in Berkeley, he began in 1892, with colleagues, to conduct shore side investigations in a tent laboratory at Pacific Grove, California. His aim was to conduct a "biological survey of that part of the Pacific Ocean adjacent to California."<sup>3</sup> The studies followed the pattern of established biological stations at Woods Hole, Massachusetts, and the Stazione Zoologica in Naples, Italy, in which individual scientists pursued independent investigations in a common setting.

In succeeding years, with some interruptions, Ritter and his group maintained temporary stations at various California locations. Finally, in 1903, they were invited to use a boathouse at the Hotel del Coronado (now a National Historic Landmark), on Coronado Island, in San Diego Bay. San Diego was, from the beginning, receptive to Ritter and his associates; in the fall of the same year, residents formed the Marine Biological Association to assist the scientists' work. The biologists were thus able to find a permanent setting for their efforts, and, after another year at the hotel boathouse, began work in 1905 in a temporary wooden structure erected on city-owned land in La Jolla Cove Park.

In 1907 Edward W. Scripps assisted the Institution in the acquisition, from the city, of 170 acres at the present site. Irving Gill, a San Diego architect, who had designed the temporary Scripps structure, was retained, and the George H. Scripps Memorial Marine Biological Laboratory ("Old Scripps") was erected in 1909-10.

Its construction was facilitated by a substantial donation from Ellen Scripps, in return for which the structure was named after a deceased brother. When the station's ties with the University of California were formalized in 1912, it became known as the Scripps Institution for Biological Research.

At the time Scripps was established, marine science was studied almost entirely at small specialized biological stations and by individuals at universities. Most such stations were in Europe. In the United States, there were but four: the Marine Biological Laboratory at Woods Hole, Massachusetts; the Beaufort Marine Station at Johns Hopkins University; the Hopkins Marine Station of Stanford University in Pacific Grove, California; and the Friday Harbor Laboratory of the

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University of Washington. Scripps took its place in this small company.<sup>4</sup> Director Ritter, however, almost immediately began to lead Scripps into other fields. For example, he brought a physicist to the station even before Old Scripps was complete. He also encouraged staff work with terrestrial forms of biology. This diversification prefigured Scripps' evolution in the next decade.

Scripps' activities during World War I built on studies the staff had conducted earlier. Two major research projects were undertaken for the Federal Government: an investigation of kelp harvesting to improve fertilizer production, and fisheries research to increase food yield. Ritter and a colleague soon thereafter began service on a subcommittee of the National Research Council of the American Association for the Advancement of Science (1919). In 1921, this body, reconstituted as the Committee on Pacific Investigations, was placed under the Division of Foreign Relations of the National Research Council, affiliated with the National Academy of Sciences. This Committee's work had obvious implications for Scripps, and the institution thus became an early party to the international scientific congresses which the Committee convened.

In service on both committees, Ritter also became an intimate of a geologist with the U.S. Geological Survey, Thomas Wayland Vaughan, who would succeed him at Scripps. The last years of Ritter's service witnessed another development of some enduring significance also closely linked to the National Academy of Sciences and National Research Council. This was the founding, in 1919, with the assistance of Edward W. Scripps, of the Science News Service (later Science Service), which has greatly assisted the exchange of scientific information and the understanding of it by the public.<sup>5</sup>

#### Scripps Becomes an Oceanographic Institution

Founder Ritter had been the inspiration of the biological institution's earliest years, but Thomas Wayland Vaughan expanded its character and enhanced its renown.<sup>6</sup> His background in geology, in part, led him to insist, as a condition of accepting the Directorship, on a broadening of the Institution's studies to include the total environment of the oceans. This transformation of the biological research station into the western hemisphere's first oceanographic institution was symbolized officially by the change of name that took place in 1925, the year after Vaughan's arrival, from the Scripps Institution for Biological Research to the Scripps Institution of Oceanography.

Also under Vaughan's direction, in 1930, Scripps introduced the first doctoral degree program in oceanography in the United States. This was the only full-range academic program in marine science in the United States until after World War II. Scripps consequently served as the place of instruction for many of those who would, in the decades after 1930, lead other oceanographic institutions and supervise related military programs.

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Scripps' trail-blazing role in oceanography was solidified by Director Vaughan's continuing prominence in national and international professional activities, particularly the part he took in national planning for the development of the field. Beginning in 1927 he served on the newly formed Committee on Oceanography of the National Academy of Sciences. This Committee issued two major reports. One dealt with the status of oceanography in the United States; the other treated its international aspects. Vaughan authored the latter of these. Although the cardinal recommendations of the Committee on Oceanography benefited other institutions more than Scripps, its preeminence in the field was acknowledged, inasmuch as the Committee viewed the expansion of the Woods Hole facility from biological station to oceanographic institution as necessary to create an Atlantic Coast counterpart to the Scripps Institution.

When Vaughan retired, Scripps secured Harald U. Sverdrup, a Norwegian oceanographer with impressive credentials, as its third Director. A specialist in deep-sea and Arctic oceanography, especially as related to ocean currents and weather forecasting, he had accompanied a number of Roald Amundsen's Arctic expeditions and Sir Hubert Wilkins' submarine effort to sail to the North Pole under the polar icecap. Sverdrup naturally emphasized and expanded deep-sea work at Scripps.

Another accomplishment of Sverdrup's tenure was the establishment, in 1937, of Scripps' first undergraduate course in oceanography. In setting up this course and defining its curriculum, he undertook, with two Scripps colleagues, to prepare the first general English-language textbook on the subject, The Oceans, Their Physics, Chemistry, and General Biology (1942).<sup>8</sup> As with other early events associated with the Institution, its writing took place in great part in Sverdrup's office in Old Scripps.

Scripps during and since World War II

The date of publication of The Oceans is noteworthy, for by that time Sverdrup was an involuntary exile from his native land, and he, and most of the Scripps staff, were at work on war-related research. An index of the sensitivity of their studies is that the sale of The Oceans was restricted during the war. Sverdrup and Walter Munk, as advisors to the War Department, propounded a series of wave and swell calculations used in connection with major amphibious landings in North Africa and Europe. Their methods were so highly regarded that more than 200 military personnel were sent to Scripps to study them.

A sampling of some of the other projects in which Scripps personnel took part will give the flavor of the diversity and significance of the Institution's war work: investigation of methods of submarine detection, including improvements in sonar; research on petroleum-producing bacteria; facilitation of Pacific amphibious operations through use of aerial photographs and charts to determine the locations of reefs and shoals; charts of Pacific currents reprinted on pocket handkerchiefs for use in air-sea rescue work; and research on agar-producing seaweed.<sup>9</sup>

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No attempt will be made to inventory or evaluate Scripps' work since World War II. Its scope is vast, both in subject matter and geographic range, and cannot be treated with justice, although some of it might be said to be already of historic value, such as substantial participation in the evaluation of the effects of the Bikini hydrogen bomb tests, the development of FLIP (the first successful large Floating Instrument Platform), and the Deep Sea Drilling Project.<sup>10</sup>

In the years since the end of World War II, the growth of both the oceanographic research and educational programs of Scripps has necessitated a vast expansion of its physical facilities. For example, the Marine Physical Laboratory, established in 1946 to continue the work of the University of California Division of War Research, became part of Scripps in 1948. In addition, the University of California at San Diego, of which Scripps is now a graduate school, has grown up nearby. The Old Scripps building has remained primarily a laboratory space during these years.

Significance of Scripps' Oceanographers in the Profession

Any early characterization of the scope and influence of recent work by a highly active scientific and educational institution has severe limitations. Much scientific work does not have the immediate practical application of the sort that transforms it into a matter of readily comprehensible significance to those who are not specialists in the field. Likewise, obscure studies conducted many years ago may achieve new significance under changed circumstances. For example, the early studies of petroleum-producing bacteria that were conducted at Scripps may now, after long years of obscurity, be of some contemporary interest.

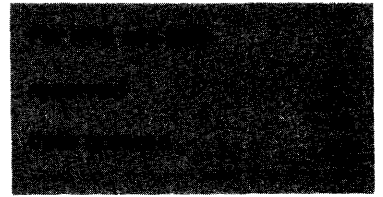
Science furthermore relies on the amassing of vast amounts of observational data that may much later be put to use or interpreted for the derivation of significant theoretical or practical results. Therefore, an institution might be worthy of commendation for the patience and industry of its scientists in accumulating information over a long period, not just for attention-getting and climactic scientific achievements and insights. For instance, the wave and surf predictions discussed earlier that gave some of the luster to Scripps' activity during World War II were grounded on decades of data-gathering and careful recording that were singularly unglamorous.

To supplement these observations then, without hazarding a guess as to the overall significance of Scripps' work in recent times, it is probably worthwhile to note the distinction a number of her scientists have attained in the eyes of their professional peers. No fewer than eleven Scripps oceanographers, all of whom worked and studied in the Old Scripps building at various times, have been honored by election to the National Academy of Sciences.

Directors Vaughan and Sverdrup were among this number. Others, also deceased, have included Francis B. Summer, a specialist in heredity and in protective coloration in fish; Milton N. Bramlette, a marine geologist

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who worked at Scripps in 1951-62, doing notable work in sea-floor geology;<sup>11</sup> Carl Eckart (Director of Scripps in 1948-50), a highly regarded theoretical quantum and atomic physicist, who also made major contributions to the study of the geophysical fluid dynamics of the sea and underwater acoustics, and who became the first Director of the Marine Physical Laboratory (1946-52);<sup>12</sup> Carl L. Hubbs, a leading ichthyologist; John D. Isaacs, a specialist in oceanic technology (also elected to the National Academy of Engineering); and Sir Edward Bullard, a British geophysicist who specialized in oceanic instrumentation.<sup>13</sup>

Three current members of the National Academy of Sciences hail from Scripps: Walter H. Munk, who collaborated with Sverdrup in the development of surf and swell forecasting during World War II and who is regarded as a major authority on ocean waves and circulation; Roger R. Revelle, a marine geologist who served as Director of Scripps from 1951 to 1965 and as science advisor to Secretary of the Interior Stewart L. Udall; and H. W. Menard, a marine geologist who has served as Director of the U.S. Geological Survey.<sup>14</sup>

Alumni of Scripps have also headed the oceanographic programs of many of the most important oceanographic educational and research institutions and important Federal civilian and military activities in the field.<sup>15</sup>

Comparative Context: Buildings Associated with Oceanographers and Oceanographic Institutions:

No structure at any major oceanographic institution in the United States has been recognized as a National Historic Landmark. The only individual twentieth-century oceanographer whose work has been so honored is Frank R. Lillie, Director of the Woods Hole Biological Laboratory (later Oceanographic Institution) (1910-35), who also served as president of the National Academy of Sciences from 1935 to 1939. His long-time Chicago home has been designated a National Historic Landmark.

Old Scripps, because of the fate of the structures in which other American marine stations were housed, is the oldest building continuously used for such purposes. The Woods Hole Marine Biological Laboratory's oldest extant laboratory space, the Crane wing of the Lilly Building, dates from 1913. The Hopkins Station of Stanford moved to a new site in 1917. Friday Harbor's new site and facilities came still later. The Beaufort Laboratory has enjoyed only an intermittent existence.

Although there were a number of marine stations in Europe at the time Scripps was established, only one of that date (Institut für Meereskunde, in Kiel, West Germany) has grown into a major multidisciplinary research establishment comparable to Scripps. Because Kiel's original buildings were destroyed in World War II, the Old Scripps building would appear to be the oldest in the world in continuous use by any major oceanographic research institution.<sup>16</sup>

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Architectural and Engineering Significance

Besides its formidable associations with oceanography, the Old Scripps Building bears further examination for its architectural and engineering merits. It was the first large concrete building designed by Irving Gill and is regarded by a leading scholar of his work as one of the two buildings marking "the beginning of his mature style."<sup>17</sup> Both Scripps and the other structure, the Holly Sefton Memorial Hospital for Children (since demolished) in San Diego, were utilitarian structures of concrete with almost no ornament and flat roofs. Both had effective natural lighting and plain but not monotonous exteriors. If the structures were not prototypes of the well-lit factory architecture of the succeeding decades, as some believe they were, they are at least early examples of a form that anticipated that development.<sup>18</sup>

The engineering importance of the Old Scripps Building should also receive more attention. The Kahn system of reinforced concrete construction, developed about 1900, was utilized in the building. This system, which employed specially designed metal reinforcing rods, was an early development in this area of technology, and gave unusual strength, for the day, to the structure.

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FOOTNOTES

1. Peter R. Limburg, Oceanographic Institutions (New York, Elsevier/Nelson Books 1979), p. 173.
2. Helen Raitt and Beatrice Moulton, Scripps Institution of Oceanography (Ward Ritchie Press, 1967). This volume has been used extensively in summarizing the history of the institution and is useful for general treatment of all aspects of Scripps' early history.
3. Ibid., p.31.
4. Fred N. Spiess, "A Note on the History of the G. H. Scripps Building," Marine Technology Society Journal, 11, 3 (July-August 1977), pp. 2,43-45.
5. Raitt and Moulton, pp. 94-95, 102; Rexmond C. Cochrane, The National Academy of Sciences, The First Hundred Years, 1963-1963 (Washington, National Academy of Sciences, 1978), p. 260.
6. Elizabeth N. Shor, "The Role of T. Wayland Vaughan in American Oceanography," pp. 127-137 in M. Sears and D. Merriman, Oceanography: the Past. Proceedings of the Third International Congress on the History of Oceanography held September 22-26, 1980, at the Woods Hole Oceanographic Institution... (New York, Springer-Verlag, 1981).
7. Cochrane, pp. 497-503.
8. Harald U. Sverdrup, Martin W. Johnson, and Richard H. Fleming, The Oceans, Their Physics, Chemistry, and General Biology (New York: Prentice-Hall, 1942).
9. Moulton and Raitt, pp. 136-144; National Defense Research Committee, Office of Scientific Research and Development, The Application of Oceanography to Subsurface Warfare (Washington, National Defense Research Committee, 1946). Reprinted by the Committee on Undersea Warfare, National Research Council, in cooperation with the Office of Naval Research, 1951, pp. 3-4.
10. Elizabeth N. Shor, Scripps Institution of Oceanography, 1903-1978 (La Jolla, Scripps Institution of Oceanography, 1978), pp. 9-17.
11. James Gilluly, "Milton Nunn Bramlette," Biographical Memoirs, National Academy of Sciences (Washington, National Academy Press, 1980), 52, pp. 81-92.
12. Walter H. Munk and Rudolph W. Preisendorfer, "Carl Henry Eckart," Biographical Memoirs, National Academy of Sciences (Washington, National Academy of Sciences, 1976), 48, pp. 195-219.

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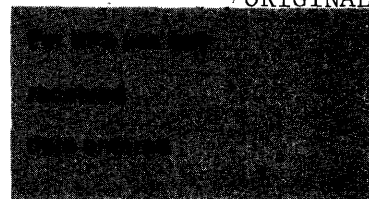
13. Sverdrup and Bullard are technically classified by the National Academy of Sciences as Foreign Associates, i.e., the equivalent of membership, although Sverdrup was a full Member during the time he held American citizenship. Information supplied by Ms. Caroline McEwen, Office of the Home Secretary, National Academy of Sciences, January 21, 1982.
14. Data supplied by Mrs. Sarah Spiess, Letter to National Park Service, January 18, 1982. Confirmed by Ms. Caroline McEwen, Office of the Home Secretary, National Academy of Sciences, January 21, 1982.
15. Because the work of living individuals is not ordinarily recognized through the National Historic Landmarks program, these individuals have not been named. Examples taken from the roster of institutions represented are impressive, however: oceanographic programs at the University of Washington, Oregon State, Texas A&M, the Johns Hopkins University's Chesapeake Bay Institute, the University of Rhode Island, and the Rosenstiel Marine and Atmospheric Sciences Laboratory of the University of Miami. Data supplied by Mrs. Sarah Spiess, Letter to National Park Service, January 18, 1982.
16. Fred N. Spiess, pp. 2, 43-45.
17. Esther McCoy, Five California Architects (New York, Reinhold, 1960), p. 68.
18. Ibid.



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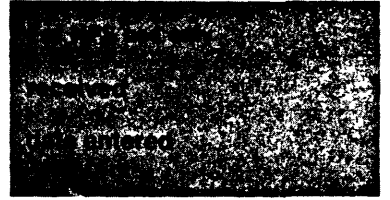
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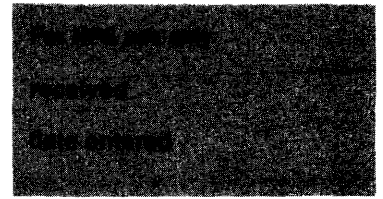
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The George H. Scripps Memorial Marine Biological Laboratory is west of the main road running through the Scripps Institution of Oceanography campus. On the north side is the temporary snack bar; to the west and south is the Director's Office complex - a one-story wood structure. This nomination includes only the building and the land on which it stands, which is congruent to the area listed in the National Register of Historic Places.