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Cover Page Footnote
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This article is available in Bulletin of the Southern California Academy of Sciences: http://scholar.oxy.edu/scas/vol115/iss2/1
The Marine Biological Laboratory at Terminal Island, Los Angeles Harbor

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Abstract.—In 1891, Professor William E. Ritter of the biology department at the University of California began searching for a location along the California coast for a biological field station. After operating summer field stations from tents in Pacific Grove on Monterey Bay, Avalon on Catalina Island and San Pedro, California, Ritter selected Terminal Island in Los Angeles Harbor as the home for what he originally hoped would be a permanent station. The station opened in June 1901. Ritter’s goal was to catalog the rich fauna of San Pedro Bay, Santa Catalina Island and San Diego Bay. The laboratory also provided an educational opportunity for secondary school teachers in the field of marine zoology. Ritter sought help from prominent Los Angeles citizens and the Southern California Academy of Sciences to financially support the laboratory and the laboratory remained in operation for the summers of 1901 and 1902. The Marine Biological Laboratory of Terminal Island represented the first outpost of the University of California in Southern California and the true beginning for the study of marine science within the Los Angeles region. Scientific research in the Los Angeles region prior to this time gave little attention to marine life. It was during the laboratory’s first year of operation in 1901 that the first red tide off Southern California was recorded. This paper chronicles the history of the two summers of operation at the Terminal Island laboratory focusing on the challenges to establish, furnish and raise funds for the continuation of the laboratory in Los Angeles. Ultimately, Los Angeles found itself outcompeted by a focused fundraising campaign organized in San Diego and Ritter moved the laboratory to San Diego in 1903. In making the move, Ritter speculated that Los Angeles Harbor might become commercially significant reducing its appeal as a place for collecting and studying marine life. Ritter’s San Diego laboratory ultimately became the Scripps Institution of Oceanography. Yet its humble beginning in an old bathhouse on Terminal Island is often overlooked.

The establishment of seaside laboratories for the study of marine biology in Southern California began with the establishment of summer camps and marine biological field stations in the late 19th century by University of California professor William E. Ritter. Ritter had first considered sites in Northern California, at Pacific Grove on Monterey Bay and at San Francisco Bay. But the efforts underway by Stanford University to develop the Hopkins Marine Laboratory in Pacific Grove and the perilous collecting conditions for marine organisms in San Francisco Bay caused Ritter to shift his focus to Southern California. Ritter’s quest for a marine station in Southern California ultimately culminated in the establishment of the Scripps Oceanographic Institution in San Diego in 1903. Little is known, however, about the laboratory Ritter established prior to his move to San Diego. In 1901 and 1902, Ritter operated a marine station in the community of East San Pedro, on Terminal Island, in Los Angeles Harbor, even declaring, at one point, that he was certain this would be the place for the permanent marine laboratory of
the University of California. Yet the operation of the laboratory on Terminal Island is often overlooked as a formative step in the development of Scripps as well as the history of the development of marine research in the Los Angeles region as well as the history of Los Angeles Harbor. It was in Los Angeles where Ritter honed his skills as a fundraiser. Los Angeles boosters supported the operation of the Terminal Island laboratory and formed a committee to secure its future but were outcompeted by a more organized and focused campaign by those championing San Diego. Doubtless, it was the harbor’s prospects as a burgeoning commercial enterprise at the beginning of the twentieth century that seemed to portend it a less desirable collecting ground for marine specimens.

While the Terminal Island laboratory was short-lived, it was significant in advancing interest in marine biological research in the Los Angeles area. After California achieved statehood in 1850, east coast scientists sought information and specimens new to science from the west, although the primary focus was on terrestrial plants and animals, minerals, and Indian antiquities. Prior to the opening of the Terminal Island laboratory, there was little marine research emanating from Southern California (Splitter 1956). Many of the early scientific reports from the Los Angeles region focused on mollusks. This research was often aided by local conchologists, many of them women collectors (Williamson 1894). The laboratory Ritter established on Terminal Island in Los Angeles Harbor should be recognized as the beginning of marine biology research and education in the Los Angeles region. The Terminal Island laboratory was the first in the Los Angeles region that educated secondary school teachers in marine zoology while research conducted at the laboratory produced a number of scientific publications. This paper will document the little known details of the establishment and operation of the Terminal Island marine laboratory.

The Search for a Marine Station Site

In 1891, Professor William Ritter from the University of California began to investigate possible locations for a laboratory field station for the study of marine science. At that time, he was an Instructor in Biology and had assumed the position of scientific director in the newly inaugurated sub-department of biology. Recognizing that the field of marine zoology was in its infancy on the U.S. west coast and thus, a prime opportunity for significant scientific research, Ritter made the focus of his department’s research the marine life of the Pacific Ocean. Ritter’s priority for a laboratory was for a seaside location from which a comprehensive survey of the Pacific Coast fauna could be conducted (Ritter 1912).

As the University of California only had schools in the San Francisco Bay area at this time, Ritter looked first to San Francisco Bay for a laboratory site. But he sought to study oceanic organisms that were typically only found at the entrance to the Bay, an area he perceived as too dangerous for field work from small craft. Therefore, in 1892, Ritter erected a canvas and wood tent structure at Pacific Grove on Monterey Bay. The cost was $200 and instrumentation was borrowed from the main campus. All water had to be carried to the laboratory in a bucket. About a dozen students and teachers collected specimens but no research results were recorded from this effort. Ritter called the laboratory a “sorry spectacle” compared to the building constructed nearby that same year to house the Hopkins marine laboratory (Ritter 1912).

In 1893, Ritter relocated his tent laboratory to Avalon, Santa Catalina Island. It was while traveling to Catalina Island that Ritter and other University of California faculty had the opportunity to observe what Los Angeles Harbor might have to offer as a potential location for a seaside laboratory. So, for several weeks in 1895, a small party of researchers set up a laboratory facility with a dormitory, essentially a tent and a cottage at Timms point in San Pedro along the Port of Los Angeles’s main channel.
Ritter’s quest for a permanent laboratory location was deferred for several years due to his travels. In 1894-1895, Ritter visited the Stazione Zoologica founded in 1874 in Naples, Italy by Anton Dohrn, a trip that likely helped formulate his views about the value of a seaside laboratory. During the period 1896 through 1900, occasional collections were made along the entire Pacific Coast of North America by University of California faculty, including Ritter’s participation in the Harriman Alaska Expedition. During these years, consensus was reached among the University of California researchers that a permanent location in Los Angeles Harbor should be established.

Benson (2001) suggests that there were three types of models for marine biological field stations during the late 19th and early 20th centuries: an international center, like the Naples, Italy station; a summer camp like the one that ultimately became the marine biological laboratory at Woods Hole; or, an outpost of an established university. On the west coast, the marine laboratories being established fell into this latter category, with Ritter’s laboratory an outpost of the University of California.

Establishing the Field Station in Los Angeles Harbor

In 1901, Ritter established the marine laboratory in Los Angeles Harbor. Although it is referred to as the San Pedro laboratory, the laboratory was located on unincorporated land under the jurisdiction of Los Angeles County. It was situated across the harbor’s main channel from San Pedro on Terminal Island in a community known as East San Pedro (Fig. 1). The location could be reached by ferry from San Pedro or from Los Angeles and Long Beach by the Terminal Island Railway (Hirahara and Knatz 2015). Ritter was able to secure funding in the amount of

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1 At the time Ritter established the laboratory, Los Angeles had not yet annexed the harbor communities. The area where the laboratory was located eventually became part of the Port of Los Angeles.
$2000 to establish the laboratory. Most of the funding was secured from noted Los Angeles businessmen (Fig. 2).

Critical to the success of the laboratory were three individuals from the University of California: 1) Dr. Charles A. Kofoed, appointed to the department of zoology in the year 1900; 2) Dr. Harry Beal Torrey, who began at the University as an assistant in Zoology in 1895; and 3) Dr. Frank Watts Bancroft, a physiologist. Kofoed was already doing marine research and Torrey had spent 12 days at the Timms Point collecting site in 1895 which kindled his research on Cnidarians (Calder 2013). The laboratory faculty also included J.W. Raymond, Assistant Professor of Physics, Hydrography and Conchology. Two staff were assigned to the laboratory, Miss Alice Robertson who was in charge of collections and Mr. Calvin O. Esterly. Ritter’s diary referred to Esterley as the “boy Esterley” although he would have been 22 years old at the time he worked at the laboratory.2 There were also seven investigators who undertook independent studies working from the laboratory, four men and three women. The men were Russian diatomist, W. C. Adler-Mereschkowsky, entomologist T.D.A. Cockerell from New Mexico, zoologist S. J. Holmes from the University of Michigan and zoologist W.R. Coe from Yale. The women were Miss Sarah P. Monks, instructor in zoology from the Los Angeles State Normal School, Miss G. R. Crocker, a graduate student and Mrs. Ida Oldroyd from Long Beach, California (Ritter, 1902a).

Ritter deliberated on the role the laboratory would have in research and education and in the laboratory’s first year made teaching of marine science an integral part of the field station

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2 William E. Ritter papers, carton 9 diaries, Summer_1901, San Pedro, Bancroft Library, Berkeley, CA.
activities. The fees charged to students would help cover the expenses for the faculty who had to travel to Los Angeles Harbor.

Laboratory Facilities

The laboratory facility was located on a portion of the East Jetty or “old breakwater” as it was often called. Constructed by the U.S. Army Corps of Engineers between 1871 and 1881, the East Jetty stretched from the tip of Rattlesnake Island (now Terminal Island) to Deadman’s Island and protected the inner harbor from heavy waves (Hirahara and Knatz 2015). Over time, sand accreted along the jetty and a community of squatters had taken up residence, most living in shanties built on stilts or pilings (Fig. 3). The laboratory itself was a squatter because it was situated on land where ownership was hotly debated between residents and local officials.

The laboratory consisted of two buildings on the breakwater, one an old bathhouse that was constructed by Michael Duffy (Fig. 4). Duffy operated the ferry service from San Pedro to Terminal Island and had constructed the bathhouse on Terminal Island in 1891 to promote use of his ferry operation. By 1901, the attractive resort communities of Terminal Beach and Brighton Beach developed further east on Terminal Island attracted most of the ocean bathers. The resorts had a much grander bathhouse and other amenities so it is likely the Duffy bathhouse had limited use for its intended purpose and was available for lease to the University. The bathhouse’s seven rooms were assigned to the researchers with one being reserved as a library and a larger room for the use of the classes (Figure 5). The classroom was equipped with long tables that were set near each of the nine windows (Williamson 1902).

The other building which was larger than the bath house was used for classrooms, storage and for some of the investigators who did not have a private room (Ritter 1912).
Fig. 4. The two buildings of the marine biological laboratory on Terminal Island, 1902. Courtesy of Scripps Institution of Oceanography Archives.

Fig. 5. A glimpse inside the classroom building of the laboratory shows how the laboratory was fitted out for use by the students. This image is a copy from the July 7, 1901 Herald Examiner and was titled Classifying Sea Things.
accommodate 15 students. On one occasion, a lady on the island provided the use of her summer cottage for an evening lecture (Williamson 1901).

Historical records do not indicate where the students were housed during the classes. Fourteen men and women were enrolled as students in the 1901 summer session, with thirteen of them paying fees. Given that course instruction was normally six days a week, with the daytime devoted to field work and evening lectures twice a week, it is likely that the students stayed in the immediate vicinity and there were numerous boarding houses on the island that could have been used. Yet Ritter’s diary noted the difficulty that Calvin Esterly had in securing lodging. Ledger records for the laboratory indicate that Ritter stayed at the Colonial Hotel in San Pedro.3

Most of the classroom instruction was informal without textbooks at late 19th and early 20th century field stations. Collections from the field provided the material for instruction and the teaching technique was observation. In that way, students would learn how to collect, describe and identify organisms (Benson 2001).

Along with the bath house, Duffy leased one of his ferry boats, the Elsie, to Ritter to use as a research vessel. Duffy had named each of his boats after his children and he likely had his children helping with the ferry business.4 Ledger records from the Scripps Oceanography Institution Archives indicate that E. Duffy received a payment of $140 per month for the launch and labor. The Elsie was 40 feet in length with a 17 horse power engine (Ritter 1902a). It was easily adapted to scientific research because its limited canopy provided open space for working with sampling gear (Fig. 6).

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3 Scripps Institution of Oceanography Minutes of Meetings of the San Diego Marine Biological Association and the Scripps Institution of Marine Biology. The books were accessioned under 81-40 dated 1903-1911 and 81-41 dated 1912-1918. 81-41 include accounts of San Pedro Laboratory, May 15 to August 15, 1901.

4 Period news reports indicate Duffy’s daughter Elsie had graduated from High School in 1901 and that she traveled to Berkeley to enter University of California in fall, 1901. She likely spent time at the laboratory and could be the one student who did not pay fees. Her time at the laboratory may have influenced her decision to attend the University of California in fall 2001. It is not clear if she assisted in operating the Elsie which was owned by her brother Edward.
The hoisting gear was located in the middle of the boat and the rear of the vessel was used for receiving and sorting samples from the dredge. In order to slow the boat sufficiently for trawling, the scientists would cast out an anchor for drag or turn off the gasoline engine and switch to a battery. Four men were needed to operate the hand winch. Laboratory funding limited the dredging and trawling to depths of less than 100 fathoms and the plankton net to 300 fathoms. Hydrographic soundings were made using ordinary 12 and 20 pound weights on galvanized steel wire. The scientists were not equipped to measure anything other than temperature and specific gravity of the water and their attempts to measure salinity were unsuccessful (Ritter 1902a).

Ritter also took advantage of knowledge from local fisherman. On August 6, 1901, Ritter reports in his diary that an Italian fisherman Louis Mascalo who had been in San Pedro since 1884 and interested in natural history would be their guide on one of their longer treks out in the launch. Mascalo was one of the squatters living on the East Jetty in East San Pedro (Hirahara and Knatz 2015).

The formal opening of the lab was on June 25th when the library, reagent room and largest laboratory room was ready. Three other lab rooms were still being worked on by carpenters. Three days later, Ritter’s diary indicated he sent a letter to UC President Wheeler asking that he convene representatives of the Los Angeles region for a conference about a permanent laboratory as in his mind there was no longer any doubt that this is the place for a headquarters for any marine investigations we may be able to carry on.

Research Conducted in 1901

Ritter’s intention was to conduct a faunal survey with as much accuracy and coverage as resources and equipment would permit. Eighty-five sampling stations were located along a thirty mile stretch of the coastline from the Redondo Beach pier in Los Angeles County south to Newport Bay, in Orange County. In San Diego County, sampling stations ranged from the coastal community of La Jolla south to the Los Coronado’s Islands, off the coast of Baja, Mexico. Stations were also established at Catalina Island. Stations were visited multiple times during the period May 15 through August 15, 1901. Ritter summarized the scientific work of the first summer in an article in Science in 1902. He discounted the hydrographic data as insufficient but felt that his additional observations on the geology of Catalina Island corroborating his previous published views that the island had undergone recent subsidence. Most of the laboratory’s accomplishments in its opening year were the result of the biological survey work which documented the discovery of new species and extended the range of known species. Other behavior and life cycle observations were made. For example Ritter notes in his diary on June 24, 1901, that a long string of yellow eggs were deposited by an Aplysia last night. This settles the egg question for this species. J.W. Raymond and Mrs. Oldroyd were the resident conchologists and both were able to add extensively to their collections with Oldroyd’s local collection passing 500 hundred species (Ritter 1902a).

On July 7, 1901 a red streak was noted in the waters at the entrance to the harbor (Torrey 1902). By July 16th red patches had approached the shore and in the evening hours, phosphorescence in the ocean waters off the laboratory was noted. The organism was identified by Harry Beal Torrey as the Peridinium Gonyaulax. This was the first documented red tide along the west coast of the United States. Torrey notes that a similar occurrence happened in Tomales Bay in.

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5 William E. Ritter papers, carton 9 diaries, Summer_1901, San Pedro, Bancroft Library, Berkeley, CA.
Northern California in the 1870’s but none of the older residents living in the San Pedro area in 1901 had ever seen such a phenomenon in the local vicinity.

The phosphorescence increased in intensity through July and into August (Williamson 1901). It was also reported in other coastal communities from San Diego to Santa Barbara (Torrey 1902). By the end of July, numerous dead fish had washed ashore. The red tide served as a mechanism of discovery for the scientists. For example, the blind fish Typhlogobius californiensis had not been reported north of San Diego until it washed ashore during the red tide.

The coming and going of various visitors to the laboratory were reported in the local press along with scientific results. In August 1901, Professor William H. Dall of the Smithsonian Institute visited the laboratory for a month and lectured to the students. Ritter considered the press reports a way to raise awareness of the laboratory which might eventually aid his fundraising efforts.

Interactions with the Southern California Academy of Sciences (SCAS)

As part of his efforts to promote the laboratory, Ritter reached out to the Southern California Academy of Sciences and met with its President, William Henry Knight. He made arrangements to attend the Academy’s June 19th 1901 meeting to lecture about the laboratory. Ritter diary indicated he hoped that many of their wealthy men could attend. At the end of the first year of operation, Knight wrote to the President of the University of California, Benjamin Wheeler, to support the effort to make the laboratory permanent and pledged the active support of the Academy. The full text of UC President Wheeler’s response to the Academy was published in the Los Angeles Herald on August 18, 1901. Wheeler’s response was fairly blunt, suggesting that a wealthy Los Angeles man could provide the $5000 annual cost to operate the laboratory. In Wheeler’s words if the opportunity was not speedily embraced, I fear Southern California will lose it. Whatever happens there can be no reasonable doubt that in some way or other, this biological work will go on. Whether at San Pedro or San Diego, a station will be permanently established.

When Ritter met with James Foshay, Superintendent of Los Angeles city schools, and his deputy regarding the permanent laboratory, he was cautioned to seek a steady stream of funding rather than associating his funding requests directly with a laboratory. Ritter suggested that a monument could be created for University of California Professor Joseph Le Conte who had died on July, 6, 1901.6 But Foshay told Ritter that most people in Los Angeles did not know who LeConte was. Foshay’s deputy told Ritter if our people give the money for the undertaking they might rather want to manage it themselves. Ritter diary following this exchange noted the care that the SCAS has taken not to mention the University in connection with the program the Academy was holding in Long Beach at which Mr. Torrey was to lecture.7 Ritter notes it is clear they are afraid of us. Is this due to the wish that the Academy is in front or to hostility to the University? The former I am very sure.8

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6 Le Conte was a University of California faculty member who was a physician, geologist, and a conservationist who founded the Sierra Club with John Muir.

7 Note that at this time, the University of California only had campuses in Berkeley and San Francisco and none yet in Southern California until the Los Angeles Normal School became part of the UC system as the Southern branch in 1919, becoming the University of California at Los Angeles in 1927.

8 Ritter diary entry for July 16, 1901. Note the fundraising strategy developed by Los Angeles businessman as discussed in Ritter’s diary entry for June 27th, 1902 also might indicate an intentional sentiment to mask the fact that the fundraising was for a University of California facility.
The event Ritter refers to is a two day Chautauqua meeting held in Long Beach on July 18 and 19, 1901. Day two of the meeting was under the direction of the SCAS and consisted of a musical prelude followed by lectures on agriculture, geology, astronomy, agriculture and other scientific topics. A detailed description of the program for the meeting was published by the Los Angeles Herald and the Los Angeles Times on July 19, 1901. Ritter apparently took offense at Torrey being referred to as “recently from Columbia” rather than a University of California faculty member. Torrey had held academic positions with the University of California since 1895 (Calder 2013). He did, however, earn his Ph.D. in Zoology from Columbia in 1903 which could explain the reference to Columbia. Torrey’s speech, which was titled *That Sea Phosphorescence*, explained in layman terms the current red tide experienced along the coastline. It was printed in its entirety in the Los Angeles Times on July 20, 1901. Torrey clearly indicated his association with the University of California while making his presentation. Other than the July 16, 1902 diary entry where Ritter speculates that that SCAS might deem that it is the appropriate organization to be the lead on a laboratory in Southern California rather than the University of California, there was no other evidence found to indicate that the Academy was other than supportive of the establishment of the laboratory by the University.

**Fundraising Challenges**

Ritter’s diaries are replete with comments about the meager funding provided by the University to support the field laboratory. In July 4 1901, he had to appeal directly to UC President Wheeler to get bills paid for fuel and labor; *otherwise the summer field work would be halted*. Ritter took advantage of the opportunity to approach Los Angeles businessmen while they were vacationing at their summer homes on Terminal Island at Brighton Beach. Ritter also solicited funds from port businesses located on Terminal Island such as Mr. James Schultz of E.K Wood Lumber Company and L.W. Blinn of the Blinn Lumber company. University President Wheeler asked Los Angeles attorney and a laboratory patron Henry O’Melveny if he would convene a meeting of Los Angeles businessmen to hear a proposal for the laboratory from Ritter.

Fundraising for operations in 1902 was not as successful as the prior year. Therefore Ritter decided that the laboratory would operate for the summer with both research and teaching but no investigations conducted at sea. Instead that year, Ritter personally committed significant time to fundraising. In June his diary indicates he had a number of meetings with Los Angeles businessmen generally with the help of O’Melveny and his law partner Jackson Graves. At a June 23rd 1902 meeting, Graves agreed to chair a fundraising committee. Ritter had determined that an amount of $25,000 was necessary for new buildings, $10,000 for a research vessel and $5000 annually for operations (Ritter 1902b). Plans were underway to raise funds to provide a new laboratory in close proximity to the existing laboratory. Graves vowed to raise the $25,000 needed for the laboratory, drawing up a subscription agreement and a list of about 65 businessmen, mostly from Los Angeles that would be approached. Graves’s secured 13 pledges of 500 dollars each but the pledges were contingent upon the entire amount being raised. Ritter was concerned that the Graves fundraising strategy was to promote a business arrangement but not associated with the specific work of the laboratory.

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9 Chautauqua was a non-denominational education movement of the late 19th and early 20th centuries that brought education and culture to rural areas of America typically through camp meetings with lectures.

10 Los Angeles Herald, 19 July 1901—Socialists in full charge, have their day at Long Beach, Miss Dromgoole lectures on southern folk lore, academy of sciences has full charge of the Chautauqua exercises today.

11 Ritter diary entry for July 4, 1901.

12 Ritter diary entry for June 27, 1902.
The 1902 summer session closed, with every anticipation that the laboratory would be back the following year and renewed vigor on the part of Ritter and Los Angeles business interests to support a permanent laboratory in Los Angeles Harbor. But only one third of the necessary amount was raised (Ritter 1912). The strategy employed by Ritter’s Los Angeles patrons to de-emphasize the specific nature of the marine research as a fundraising tactic might have doomed the fundraising efforts in Los Angeles. A benefactor’s natural desire to understand how their donation can be used to better the world or society often helps to solidify the financial commitment.

Deadman’s Island as a Potential Laboratory Site

Amid fundraising efforts Ritter spent time seeking other locations in Los Angeles Harbor for a permanent laboratory. He was aware that the ownership of the land where the current laboratory buildings were located had been contested. The Army Corps of Engineers was reticent to allow further building construction on the East Jetty. Captain J. Meyler of the U.S. Army Corps did announce publically that he had supported the approval given to Ritter to construct a laboratory for scientific purposes.13 Ritter also met with Los Angeles city attorney Carr to inquire about the city owned property and the land ownership issue. Ritter, nevertheless, investigated other locations in the area for a permanent laboratory. Jackson Graves’s who owned a home on the Island at Brighton Beach, took Ritter and others on his sailboat, the Pasquilito, to observe the coastline for promising locations. At one point, Deadman’s Island was considered a potential laboratory site.14 Ritter took several trips to Deadman’s Island, one time rowing over with Kofoid and other times with his faculty and his Los Angeles donors. Ritter became quite enthusiastic about the potential of the research facility moving to Deadman’s Island (Fig. 7). It was convenient to the landing site in San Pedro, the water quality was high and it was easy to drag boats onto the island. He noted its commanding position and beauty. But his diary shows that he also had questions about the viability of this site, its isolation, the potential for storm damage and the need for freshwater.

The Loss of the Laboratory to San Diego

In July 1901, Kofoid took the launch for a three week trip to San Diego and became enthusiastic about that area as a potential laboratory site. Kofoid met Dr. Fred Baker on that trip, which triggered Baker’s active campaign to move the laboratory to San Diego. Baker was an avid shell collector who sought out every biologist who came to San Diego. Baker had previously met Ritter and his wife while they were on their honeymoon in San Diego in 1891 (Shor 1981). Kofoid’s research trip made the local press and Baker invited him to address an influential business group while he was still there (Spiess 2003). A letter from Kofoid to Dr. Baker dated May 24, 1902 indicates that Kofoid desired to see the laboratory move to San Diego for the summer session of 1902 but that a decision had been made to keep the laboratory in San Pedro. Our plant at San Pedro cannot be given up without considerable loss of plumbing and woodwork, etc., Kofoid writes.15

Baker did not give up, pressing Ritter on the advantages of the San Diego location (Shor 1981). When Baker secured a boat house to use for the 1903 summer session along with funding, the deal was clinched (Ritter 1912). Los Angeles had lost the laboratory to San Diego where

13 Los Angeles Herald, July 31, 1901.
14 Deadman’s Island was a rock promontory located at the entrance to Los Angeles harbor. Serving as a burial ground and home to mid-19th century coast whaling stations, and then a WWI location, the island was blasted away in 1928 to widen the main channel into Los Angeles Harbor.
15 Charles Atwood Kofoid Papers, Papers 1902-1940 Collection 82-71, Box 1, Folder 2, Scripps Institution of Oceanography Archives.
a better funded and better orchestrated support group had developed. The San Diego laboratory would eventually become the Scripps Institution of Oceanography (see Raitt and Moulton 1967, for a complete history of the development of Scripps).

The Significance of the Marine Biological Laboratory in Los Angeles Harbor

Even without the meeting between Kofoid and Dr. Fred Baker on the 1901 expedition to San Diego, it is likely that Ritter would still have moved the laboratory outside of Los Angeles Harbor. Construction by the Army Corps of Engineers of a major breakwater to protect San Pedro Bay from heavy surf had begun in 1899. This infrastructure investment would lead to further industrialization and set the harbor on a course of increasing commercial importance.

Ritter anticipated that the harbor would grow in commercial significance along with the population and he feared that industrial and sewage pollution would lead to the inevitable destruction of some of the best collecting grounds in and about the harbor. These factors weighted on his mind as he considered other locations (Ritter 1912).

Although the laboratory on Terminal Island only existed for two years, it was significant for several reasons. First, it solidified Ritter’s resolve that the laboratory be located someplace in Southern California. In Ritter’s view, Southern California was the optimum location to undertake detailed continuous long term observations because of the weather and because the deep ocean could be reached only 6 miles from the coastline unlike the east coast where one has to travel 50 to 100 miles off the coast to reach similar depths (Ritter 1902b). It also was the first outpost of the University of California in Southern California, made at a time when there was considerable debate among the leadership of Los Angeles about lack of investment by the University of California in the southern part of the state (Dickson 1955). Second, the station

16 Los Angeles lobbied the state legislature for years to secure a University of California campus in Southern California and were successful in 1919 when Assembly Bill 626 was approved which turned the Los Angeles State Normal School into what would become the University of California at Los Angeles.
received considerable press exposure, partly due to the preeminence of its visiting scientists and partly due to the red tide, a previous unknown phenomenon that aroused public interest. The press exposure aided Ritter’s fundraising process. A critical error was made, however in the fundraising strategy undertaken by his Los Angeles patrons that Ritter would not repeat in San Diego. In addition to positive press, visiting scientists brought their own research techniques that were shared with the local scientists. This laboratory, as well as other summer stations, did much to help shape the way biological research developed in America (Benson 2001).

The laboratory and its research activities were the true beginning of marine biological research in the Los Angeles region. It was a teaching laboratory and provided an opportunity for local teachers to learn marine biology and to pass that knowledge on to their own students. Class instruction was eliminated at the San Diego station due to the researchers desires to focus on their own research and because student fees were no longer necessary to support the operation (Ritter 1912). As a teaching laboratory, the Terminal Island facility was more likely to attract women who enrolled as students or became associated with the laboratory to carry out their own independent research. Please see the companion paper to this one on the early women scientists who were associated with the Terminal Island laboratory, 115(2).

The Terminal Island laboratory operated during the time that marine science in Los Angeles region was still in its “descriptive” phase, focusing on whole organisms (Dailey et al. 1994). The Los Angeles region lagged other parts of the country which had begun, in the late 19th century, the transition from descriptive marine science to more analytical research. Ritter’s premonition that the commercial development of Los Angeles Harbor would doom its viability as a collecting ground came true. Industrial discharges after WWII virtually eliminated nearly all life within the Los Angeles inner harbor and severely reduced species diversity in the outer harbor. This trend began to be reversed as regulatory controls over discharges were put in place beginning in the 1960’s (Reish 1971). Despite becoming a major commercial seaport, however, Los Angeles Harbor continued to be the subject of biological research. By virtue of its development, the harbor became a prime location for analytical marine research that examined the impacts of coastal development and contaminant inputs on coastal waters (Dailey et al. 1994).

The presence of the marine biological laboratory on Terminal Island in Los Angeles Harbor is a part of the history of the development of the marine sciences in Los Angeles and the history of the Scripps Institution of Oceanography that is not well known. The ledgers for 1901 operation of the laboratory are filed under the records for the San Diego Marine Biological Association, 1903-1911, which further obscures its existence. The author is indebted to former Scripps archivist Peter Brueggeman who assisted me in locating these records.

**Literature Cited**


