

## CHAPTER 4

### EDWARD F. RICKETTS AND THE PACIFIC BIOLOGICAL LABORATORIES

Upon his arrival to Monterey Peninsula in 1923, Ricketts found himself awash in a plethora of unfamiliar marine invertebrates associated with the Pacific coast, including a fair amount that had yet to be taxonomically described and given a proper scientific name. Fortunately for Ricketts, WK Fisher - resident Director of Hopkins Marine Station - was reasonably familiar with a number of these marine invertebrates. During the quarter century Ed Ricketts resided on the Monterey peninsula, the knowledge held by WK Fisher became an invaluable resource for the collector. Beyond his familiarity with the marine invertebrates associated with the Monterey peninsula, Fisher was personally acquainted with, and served as host to the many invertebrate specialists who visited Hopkins Marine Station. Some of these invertebrate specialists were simply passing through on short visits; others stayed for extended periods conducting research. Several of these invertebrate specialists, notables such as Elisabeth Deichmann and Libbie H. Hyman, returned time and again over the years. These specialists, in addition to conducting research, often held visiting instructor positions, allowing them to assist in teaching the marine invertebrate courses offered at the seaside laboratory.

Through the years, Ricketts has increasingly been portrayed as one who was rejected by the scientific community associated with the Hopkins Marine Station, as he lacked any college degree and was, therefore, looked down upon by the academic scientists. A bit of this view stems from Joel Hedgpeth's comment which appeared in the publication *Outer Shores* and reads:

*“It was an odd quirk of fate that Ed should establish himself in a community where there was so little intellectual stimulation for a field naturalist, despite the presence of a marine station. Ironically, the greater Monterey community was, at the same time, a fermenting compost of relationships, interactions, story-telling, and conversation that was ideal for the development of a novelist. In this lively environment John Steinbeck flourished as a writer and Ed Ricketts struggled as a biologist. Over at Hopkins, there was the old guard, the staunch conservatives of another day, whose*

*concerns were for the most part with the identification and cataloguing of species* (Shores I:28).<sup>1</sup>

A review of the history of the Hopkins Marine Station during the period Ed Ricketts lived and worked on the Monterey Peninsula suggests that Hedgpeth's view, which has been perpetuated over the years, might be skewed, if not completely incorrect. For example, Hedgpeth's suggestion of the Monterey Peninsula provided "*little intellectual stimulation for a field naturalist, despite the presence of a marine station*" is not supported when one reviews the evidence of communication between Edward F. Ricketts and the faculty, students and visiting scientists of Hopkins Marine Station. A review of Ricketts' personal papers - more specifically his extensive inter-referenced card filing system and letters of correspondence - suggests that within the first year of his arrival in Pacific Grove, Ricketts was mixing with the scientists associated with Stanford's seaside laboratory. These interactions with Hopkins scientists involved their helping Ricketts to identify the marine invertebrates he was in the business of collecting; and Ricketts providing marine species the scientists were in the business of taxonomically describing in their scientific publications.

And as for Hedgpeth's comment "*Over at Hopkins, there was the old guard staunch conservatives of another day, whose concerns were for the most part with the identification and cataloguing of species.*" This statement appears to be a misunderstanding by Hedgpeth of the history of Stanford University as there was not a single resident or visiting faculty that was a member of the "old guard" positioned at Hopkins Marine Station at the time Ed Ricketts arrival or anytime thereafter. The term old guard was coined by David Starr Jordan and referred to the founding members of the faculty Jordan had recruited to Stanford University during the first year (1891) the University was established. Contrary to the view presented by Hedgpeth, the Hopkins Marine Station of Ed Ricketts' day was, at times quite vibrant and exciting, as a stream of visiting oceanographers, fisheries scientists, invertebrate zoologists, and experimental scientists expanded the potentials of what the education and research facility had to offer. Some of these scientists were simply passing through on short visits; others stayed for extended periods conducting research.

Among the many visiting scientists who visited Hopkins, a number of them helped to identify invertebrate species for Ricketts. Several of these scientists went on to be leaders in their fields, including Henry B. Bigelow, Founder and first Director of the Woods Hole Oceanographic Institution, T. Wayland Vaughan, Director of the Scripps Institution of Oceanography, Naohide Yatsu, third Director of Misaki Marine Biological Station, University of Tokyo, Torsten Gislen, Professor of Zoology at Uppsala University, Sweden, Charles Henry O' Donoghue, University of Manitoba, Winnipeg, Manitoba and Deogracias D. Villadolid, Director of the Bureau of Fisheries, Philippines. As is becoming increasingly apparent through the review of Edward F. Ricketts' immense cross-indexed card filing system and letters of correspondence, was his extensive communication with numerous invertebrate specialists, With the help of these taxonomic specialists, who had acquired the knowledge necessary to identify individual species of particular taxon, Ricketts was able to familiarize himself with the vast array of marine invertebrates associated with the Pacific coast.

By relating the comprehensive field notes he collected while observing animals in their natural habitat, together with the information held within his cross-referenced scientific reprint collection, Ed Ricketts worked to organize the manuscripts for *Between Pacific Tides* and the phyletic catalog associated with *Sea of Cortez: A Leisurely Journal of Travel and Research*.

**EF RICKETTS 3 X 5 INVERTEBRATE  
SURVEY CARDS**

One bit of evidence that documents the communication between EF Ricketts and the scientists associated with Hopkins Marine Station, as well as various scientist positioned around the world, is presented among his 3" x 5" survey cards. Using these cards, Ricketts cataloged information related to the species he collected; or that someone had collected for him, such as the Chinese fisherman Chin Yip or the Italian fisherman Vito Bruno. The information organized on these cards include the date of collection, where it was found, the person who collected the animal, and who it was that taxonomically identified the animal to the species level. If one takes a moment to view EF Ricketts' specially designed survey cards, one finds a column on the back of the card titled "IDENT (or "FIELD")." In this column is provided the name of the individual who identified the species for Ed Ricketts, and often the date this communication took place. On some cards this column contains the initials EFR, for Edward F. Ricketts himself, on other cards the column has the initials WKF, for Walter K. Fisher. By reviewing the collection of EF Ricketts' survey cards, one is able to determine the individual, either in-person, referenced by Ricketts as "verbal", or via a "letter" of correspondence, who identified the species for Ricketts. In addition, one finds that often the individual who identified a number of species within a particular taxon were specialists in that particular area.

Those scientists associated with Hopkins Marine Station that are referenced in the IDENT column of E.F. Ricketts' survey cards, and the year(s) the individual identified the species for Ricketts, include the following:

**Faculty:** Walter K Fisher (1924, 1925, 1926, 1927, 1928, 1930, 1933), Rolf Bolin (1946), Arthur Russell Moore (1927, 1928, 1938), Tage Skogsberg (1926) and Harold Heath.

**Students:** Max Walker De Laubenfels (1925, 1931,1932), George and Nettie MacGinitie (1926, 1931), Willis G. Hewatt (1930), Lucina Stanford (1930), Deogracias D. Villadolid (1925) and William S. Wallace (1923).

**Visiting Scientists:** Henry B. Bigelow (1928), Ira E. Cornwall (1925), Torsten Gislen (1931), Charles Henry O' Donoghue (1924, 1925) and Charles Branch Wilson.

Also noted on the survey cards are scientists known to have visited to Hopkins Marine Station who identified species for Ed Ricketts via letters of correspondence:

**Waldo L. Schmitt** - (*Pycnogonida-Tanystylum intermedium*-note in a letter to Schmitt-27 September 1927).

**Naohide Yatsu** - (*Anthozoa- Subclass Zoantharia--Sagaritia leucollena*- Specimen sent to Dr. Yatsu at Tokyo, his letter 27 Dec 1930).

**T. Wayland Vaughan** - (*Zoantharia –Coenocyathus*- Identified by Vaughan, his letter October 6-7, 1926)

Beyond these individuals listed above, are several other scientists who identified species via letters of correspondence as referenced among the survey cards.

**Dr. Cyril Berkeley** - (*Polychaeta-Glycera rugosa* C. Berkeley- via letter- February 7, 1931).

**Hilbrand Boschma** - (*Rhizocephala-sacculina* new sp. identified by Boschma, letter 14 June 1928).

**Dr. Edwin Linton** - (*Trematoda-Otodistomum* – identified by Dr. Linton, his letter 23 Aug 1930).

**LETTERS OF CORRESPONDENCE**

Another bit of evidence documenting the communication between EF Ricketts and the scientists associated with Hopkins Marine Station are existing letters of correspondence between Ricketts and individuals referenced on survey cards. These letters of correspondence, held among the Edward F. Ricketts Papers in the Department of Special Collections at Stanford University include the following: Torsten Gislen, [1936-1947], Ira E. Cornwall, [1940-1942], Max Walker de Laubenfels, [1938-1939], Deogracias D. Villadolid, [1938-1939], Waldo L. Schmitt [1939-1947], and Steve A. Glassell, [1939-1946].

Beyond these communications, there exists numerous letters of correspondences found among the Edward F. Ricketts Papers, to and from invertebrate specialists, many of whom were either students\*\* or visitors\* of Hopkins Marine Station as outlined below:

**Harry L. Andrews**, \* (Graduate Student, University of Illinois, Chicago) [1938-1939];

**S. Stillman Berry**, (Research Associate of the United States National Museum - Smithsonian Institution), [1941-1948];

**Elisabeth Deichmann**,\* (Curator of Marine Invertebrates, Museum of Comparative Zoology, Harvard University), [1933-1948];

**C. McClean Fraser**, (Professor and Head of the Department of Zoology University of British Columbia, Vancouver), [1937];

**Joel W. Hedgpeth**, [1939-1948];

**Willis G. Hewatt**, \*\* (Graduate Student, Hopkins Marine Station, Stanford University) [1937];

**Libbie H. Hyman**,\* (Curator of Marine Invertebrates, American Museum of Natural History) [1939-1948];

**Willard G. Van Name**, \* (Curator of Marine Invertebrates, American Museum of Natural History) [1939-1948];

**John L. Mohr**, (Professor of Biology, University of Southern California), [1947];

**Theodor Mortensen**, (Department of invertebrates Zoological Museum, University of Copenhagen, Denmark) [1945];

**Enrique Rioja**, (Professor of Zoology, University of Mexico, Casa de Lago) [1940-1943];

**Waldo L. Schmitt**, \* (Curator of Division of the Marine Invertebrates, United States National Museum), [1939-1947];

**Leonard P. Schultz**, \* (Curator of Fishes, United States National Museum), [1942-1943];

**Maxwell Smith**, [1944-1947];

**T. A. Stephenson and Anne Stephenson**, \* (Professor and Head of the Department of Zoology at the University College of Wales, Aberystwyth), [1947-1948];

**A. L. Treadwell**, (Professor, Department of Zoology, Vassar College), [1943].

Clearly, the number and stature of the invertebrate specialists and professional zoologists with whom EF Ricketts corresponded stands as a testament to the authors' efforts directed toward accurately organizing his scientific findings and presenting a comprehensive up-to-date annotated systematic index and bibliography for the monographs *Between Pacific Tides* and *Sea of Cortez*. According to Eric Tamm, author to *Beyond Outer Shore*, at the time of his passing, Ricketts had amassed over 350 pages of correspondence to and from taxonomic experts, and had created over 500 cards for the indexing, cataloging and cross referencing of the species.<sup>2</sup> One can only wonder how many other letters of correspondence vanished in the fire that burnt Ed Ricketts lab to the ground in November 1936.

**EDWARD F. RICKETTS' OWN WORDS**

Beyond the evidence of outlined above, are EF Ricketts own words of acknowledgement for those who provided assistance, either by identifying species, and/or providing critical comments "*in the interests of scientific accuracy*" in relation to the information presented in the books, *Between Pacific Tides* and the *Sea of Cortez*. A gem among these references is the Preface of *Between Pacific Tides, First Edition* (1939), written by Ricketts and Calvin, which provides further indication and greater appreciation for just how well connected with the scientific community the Ed Ricketts had become.

From the Preface to *Between Pacific Tides* is written the following: ....*Work of this sort is necessarily so intricate and interwoven that to make adequate personal acknowledgments would be to mention most Pacific biologists and many specialists elsewhere. In the matter of general assistance, the staff at Hopkins Marine Station rates of course first, and acknowledgments for various kindnesses are particularly due to Dr. W. K. Fisher, its Director. G. E. MacGinitie, Director of the Kerckhoff Marine Laboratory of the California Institute of Technology, has been unfailingly cooperative. Dr. S. F. Light and others in the Department of Zoology at the University of California have placed their very considerable facilities freely at our disposal, and Dr. Waldo L. Schmitt and others at the United States National Museum have been wholeheartedly behind the project. We feel grateful also to Dr. W. A. Clemens, Director, and to others, particularly to Dr. C. Berkeley, of the Pacific Biological Station, Nanaimo, B.C., to Dr. C. McL. Fraser at the University of British Columbia, to Dr. T. Gislen at the University of Lund, to Dr. T. Wayland Vaughan, Director, Scripps Institution, to Mrs. Ida Shepard Oldroyd of the Stanford Geological Museum, to Dr. W. C. Allee at the University of Chicago, to Dr. V. E. Shelford of the University of Illinois, and to many others, for literature or other assistance.....3*

As well, within the Annotated Systematic Index and Bibliography of *Between Pacific Tides* by Ricketts and Calvin, is presented words of acknowledgement, to the many invertebrate specialists who supported the authors' efforts with both taxonomic identification and organizing the systematic index and bibliography of the book. The following is the list of those invertebrate specialists Ricketts acknowledged in Annotated Systematic Index and Bibliography of *Between Pacific Tides*, many of whom were either faculty\*\*\*, students\*\* or visitors\* of Stanford University's Hopkins Marine Station:

**Dr. M. W. de Laubenfels** of Altadena, California\*\*;

**Dr. Elisabeth Deichmann**, of the Museum of Comparative Zoology of Harvard\*;

**Professor Sidney. J. Hickson**, Cambridge, England;

**Dr. Oskar Carlgren** of Lund, Sweden;

**Daniel Freeman** of Albany College, Albany, Oregon;

**Dr. Jeanette S. Carter** of the Miller School of Biology, University of Virginia;

**Dr. J. L. Lynch** of the School of Fisheries, University of Washington;

**Dr. W. R. Coe**, of Yale University\*;

**Dr. H. L. Clark**, of the Museum of Comparative Zoology of Harvard\*;

**Dr. T. Wayland Vaughan**, Director, Scripps Institution of Oceanography\*;

**C. H. O' Donoghue**, of the University of Edinburgh\*;

**Dr. Olga Hartmann**, of the University of Southern California,

**Dr. C. Berkeley**, of the Pacific Biological Station at Nanaimo;

**Dr. W. K. Fisher**, Director, Hopkins Marine Station\*\*\*;

**Dr. Austin H. Clark**, Curator, Division of Echinoderms, United States National Museum\*;

**Dr. H. A. Pilsbury**, of the Academy of Natural Sciences, Philadelphia;

**James O. Maloney**, of the United States National Museum;

**Dr. C. R Shoemaker**, of the United States National Museum;

**Dr. W. L. Schmitt**, Curator of the Division of Marine Invertebrates of the United States National Museum\*;

**Steve A. Glassell** of Beverly Hills, California;

**Dr. Belle A. Stevens**, of the University of Washington Oceanographical Laboratories;

**J. W. Hedgpeth**, of Oakland, California;

**Mrs. A. R. Grant**, of the University of California, Department of Zoology;

**Dr. F. M. MacFarland**, president of the California Academy of Sciences, San Francisco\*\*\*,

**Dr. Rolf Bolin**, of the Hopkins Marine Station\*\*\*;

**Dr. W. G. Van Name**, of the American Museum of Natural History\*.

In contrast to the comments of Joel Hedgpeth, a wealth of Ed Ricketts own personal references suggests that the collector's choice of Pacific Grove to operate a biological supply company was an excellent selection and enabled him to flourish as an un-credentialed marine biologist.

**CONTRIBUTIONS TO MUSEUM COLLECTIONS OF  
NATURAL HISTORY**

Beyond communicating with the invertebrate specialists, Edward F. Ricketts, often under the auspices of the Pacific Biological Laboratories, made significant contributions of marine invertebrates to a number of natural history museums. His contributions to United States National Museum (USNM), (i.e. Smithsonian) began in the year 1925 and extend to 1948, the final year of his life. Among the 407 cataloged contributions by EF Ricketts and Pacific Biological Laboratories in the Smithsonian Invertebrate Collection, one finds the name of the taxonomic specialists who provided species identification: 47 Sipunculids & Asteroids of which were identified by WK Fisher; 63 Ophiuroids identified by A. H. Clark; 55 Actinarians & Zooanthids identified by O. Carlgren; 24 Isopods identified by J. O. Maloney; 16 Arthropods identified by Waldo Schmitt; 11 Sponges identified by Max de Laubenfels; 10 Copepods identified by CB Wilson; 4 Amphipods identified by Clarence Shoemaker.<sup>4</sup> Beyond the contribution of marine invertebrates, over 53 cataloged contributions from EF Ricketts and the Pacific Biological Laboratories are identified in the Smithsonian Fish Collection.<sup>5</sup>

In addition to the USNM, Ed Ricketts provided contributions to the American Museum of Natural History, the Harvard Museum of Comparative Zoology, Mexico-master invertebrate collections in Mexico City and finally Stanford University's Natural History Museum, the Hopkins Marine Station invertebrate collection, and the personal collection of Professor Frank Mace MacFarland, both currently held at the California Academy of Science Museum Invertebrate Zoology Collection.

Within the Professor Frank Mace MacFarland's personal collection of marine invertebrates, held at the California Academy of Science Museum, one finds over 50 gastropods collected by EF Ricketts.<sup>6</sup> Many of these being from the Steinbeck-Ricketts Gulf of California Expedition (1940), others from British Columbia: Pacific coast of Vancouver Island (1945-1946): One also finds reference to Professor FM MacFarland in EF Ricketts journal transcripts during his expedition to British Columbia: Pacific coast of Vancouver Island (1945-1946) which reads as follows:

*"And, by it down thru the sand, I got a beautiful velvety nudibranch about an inch long. If I'm going to get to find out anything about the tetrabranch (and nudibranchs), apparently I'm going to have to call on MacFarland in person. He's an old man now. I'm fearing that, before I get to it, he'll die and his knowledge of this group, unique in the world, will die with him. Cooperative as hell, but he simply won't get busy and identify the beasts I send him unless I turn up there personally. He hasn't even finished with the Sea of Cortez stuff. Since he's retired and from the presidency of the California Academy of Science as well as from his Stanford professorship, I'd suppose he'd have time for more work, but all he does is be more perfectionist. This whole business of the specialist is the greatest fly in my ointment. I have to spend a large bit of energy and develop tact the like of which was never see on land or sea in order to get anywhere near complete list of determinations..."<sup>7</sup>*

*"...Gosh, there's an awful lot of work to making even the most cursory survey of this sort. Determining even simple items as the hermit crabs is a job: you can't even get anyone even to give you hints on the anemones; the nemerteans break up before you can preserve them for the specialists; there's no one now to determine sponges, now that deLaubenfels has gone lazy or has lost interest; and since the old guy at USNM has retired, no one to determine the isopods."<sup>8</sup>*

Through the years Ricketts sent specimens of marine invertebrate to taxonomic experts, who were positioned as the curators at some of America's leading natural history museums including Elisabeth Deichmann at Harvard Museum of Comparative Zoology, Libbie H. Hyman and Willard G. Van Name, American Museum of Natural History, Ira E. Cornwall and Waldo Schmitt at the U. S. National Museum. In return for the specimens provided, Ricketts received taxonomic identification of the species, which aided him with properly referencing the marine invertebrates in his books, *Between Pacific Tides* and *The Sea of Cortez*. Beyond receiving species identification by the invertebrate specialists, Ricketts requested and received reprints of scientific research publications, which allowed him to construct an extensive scientific library and obtain the most current literature which he used to reference *Between Pacific Tides* and *The Sea of Cortez*.

Ricketts himself, mentions such an exchange within a document he compiled listing the contents of the Pacific Biological Laboratory destroyed in a fire November 25, 1936 "*Contents of PBL destroyed Nov. 1936*": "*Some of the bound volumes consisted of scientific treatises which were sent to me upon request from the Smithsonian Institution-US National Museum at no charge, presumably because of the pleasant relations between PBL and USNM whereby we sent them literally thousands of specimens at no charge.*"<sup>9</sup>

The scientific reprint collection Ricketts had gathered together was one rivaling that of any academic scientist or professional invertebrate zoologist of his time. A review of the Ricketts personal library of scientific books,<sup>10</sup> reprint collection,<sup>11</sup> and references cited in his works *Between Pacific Tides* and the *Sea of Cortez*, clearly demonstrate his impressive knowledge of the both the historical and current scientific literature associated his research.

This brief overview of the communications of EF Ricketts with the scientists associated with Hopkins Marine Station, and numerous scientific institutions positioned around the world, broadens our understanding of the fields of invertebrate zoology and marine ecology on the Monterey peninsula. As expressed in WK Fisher's letter to Vernon Kellogg, the Hopkins Marine Station serviced well the need for a meeting location for scientists to gather, share ideas and collaborate on research efforts. Clearly, Edward F. Ricketts could not have chosen a more ideal location along the coast of California for the project that lay before him. Settling in Pacific Grove provided Ricketts with the opportunity to connect with numerous marine invertebrate specialists as the Hopkins Marine Station began to serve as the meeting place of biologists beginning in the 1920s.

Actually, the Southern end of the Monterey Bay had long served as a meeting place for scientists, with the establishing of the Pacific Coast Assembly of the Chautauqua Literary and Scientific Circle in 1880,<sup>12</sup> Hopkins Seaside Laboratory in 1892,<sup>13</sup> and the Herzstein Laboratory in 1904, but few have taken the time to recognize the history of biological sciences associated with the Monterey Peninsula.