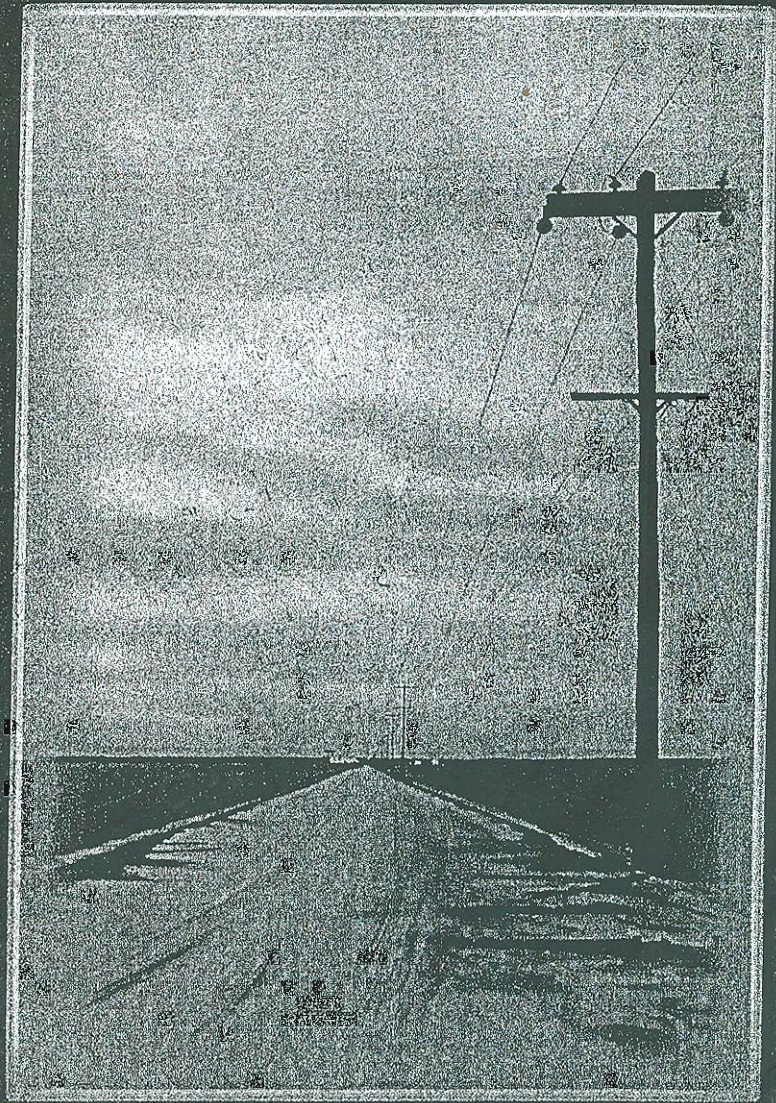

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HIDDEN TREASURE: THE STEINBECK-RUDLOE LETTERS

BY THOMAS MANNING, SUZANNE MATOS, AND
BRIAN ADLER

A HALF CENTURY AGO, in the midst of a productive literary career, John Steinbeck published *The Sea of Cortez*, *Cannery Row*, and *Sweet Thursday*, a work of nonfiction and two novels centered on the life of a marine collector. Later in life, Steinbeck was good friends with a young man who lived in the Florida panhandle named Jack Rudloe, the founder and managing director of Gulf Marine Specimen Laboratory in Florida. His education and research facility is nestled off the thready highway that cuts through the sleepy fishing town of Panacea, located on the Sunshine State's Gulf Coast. Rudloe is an outspoken conservationist, marine naturalist, and gifted collector. Gulf Specimen has provided specimens to over thirteen hundred institutions across the nation for teaching and research purposes. Rudloe is also an avid writer. The author of nonfiction books, a novel, and numerous articles, he is a critically respected and well-received teacher and storyteller. Perhaps one of the vehicles that paved the way for Rudloe's personal success was the unlikely correspondence that he shared with Steinbeck. They exchanged over thirty letters (recently given to the Martha Heasley Cox Center for Steinbeck Studies at San José State University) and this relationship had a significant influence on modern day marine science, from natural products to ecology.

That a young New York transplant, struggling to make a place for himself within a small oceanside community, was able to catch the attention of the 1962 Nobel laureate may seem odd. Rudloe was born in Brooklyn, New York, and lived there until his early teens, when his family moved to Lanark Village, a small

town on the Florida Panhandle whose population scratched out a living from oysters, crabs, fish and timber. In the late 1950's and early 1960's Rudloe, as a teenager, was looking for opportunities along the rural panhandle and realized that the Gulf of Mexico was a boundless resource: "[T]here was basically a market for marine life, I was interested in it, there was diversity there, and I was able to spark a small business, which was supplying animals to labs in schools and . . . the marine environment is a much richer area than anything terrestrial. So once you get out here there's a much greater diversity. And not only that, there was a much greater interest in marine life as opposed to spiders or frogs" (Personal Interview. Note: All direct quotations by Rudloe in this article are taken from this same interview).

The social novelist was a former Stanford marine biology major, and Rudloe's stationery caught his attention. "I had a little letterhead with a picture of a hammer head shark and an eel on it or something like that," said Rudloe, "and it said Gulf Specimen Company at the time." Jack also focused on one of Steinbeck's personal treasures: *The Log of the Sea of Cortez* (1941). Along with *Cannery Row* (1945) and *Sweet Thursday* (1954), these works all focused on the life of a marine collector.

In catching Steinbeck's attention with a letterhead that appealed to the author's fondness for marine science, and in focusing on a book the prize-winning writer himself held dear, Rudloe was able to breach the fortifications set up against "flatterers," those "people who want something," as Steinbeck put it in a letter to Rudloe. As Rudloe explained, the intertwining of writing, language, science, and study was set as the two began a correspondence that would span more than four years and would include three visits.

According to Rudloe, "And that's where we began our correspondence. And at the time, I'm saying to myself, 'Well, can I really do this?' because there was no guidelines, and it was, it was just an idea. I picked up a few little orders here and there. I didn't know what the heck I was doing." In referring to both his marine collection activities and some early writing, Rudloe continued, "I did things like I would ship stuff to the New York Aquarium, and it would get there dead. And they'd say, 'You don't pack things this way. You do this and that.' And there were some helpful people there that told me how to do it. . . . It was really kind of a low point in my life. And then I started corresponding with John Steinbeck. And really I'd been having a very difficult time with

Florida State, which I had a combination left and been driven out of. And we sort of had mutually agreed to go our separate ways. I've got this Nobel Prize winner in literature corresponding with me, saying, 'Good idea. Go on, and do what you're doing, and that may work for you.' And so that was, that was a big confidence booster to someone who's twenty years old."

Rudloe recounts the three face-to-face meetings the two naturalists shared: "I really met him, or visited him three times. First time was there [Sag Harbor, NY]. Second time was here [Panacea]. Third time . . . Oh, let's see. We tried to get out, tried to get out to Sag Harbor, and that didn't work for some reason. And we met one more time in New York."

The relationship shared between the two naturalist-writers was certainly secured upon the first of their three meetings, wherein Rudloe presented Steinbeck with a uniquely oceanic gift: a "beautiful flat rock [with] four gorgonians growing on it--sea whips." He found the rock on a snorkel trip and dried it out for weeks as he prepared to drive up to New York to meet his acquaintance. Rudloe recalls how the science of the presentation captivated the attention of the writer. Ironically, the scientist himself was interested in writing, but his attempts to publish were rejected—a fact which he mentioned to Steinbeck. The author offered Jack a gift in return, wisdom. As Rudloe explained, Steinbeck told him, "If you're any good, you'll get published. If you're not, you won't. . . . And you won't be a real writer until you write your first one million words. After you've written one million words, then you'll . . . be a writer." Perhaps it may be said that Jack has indeed accomplished the million-plus word plan and that he is a good writer in light of his success in publishing books such as *Search for the Great Turtle Mother* (2003), *The Living Dock* (1988), *The Wilderness Coast* (1988), *The Erotic Ocean* (1971), and *Potluck* (2003). The University of Florida Special Collections section of the library maintains a "Jack and Anne Rudloe Papers" section (MS group 109).

Steinbeck's three famous marine books are *The Sea of Cortez* (with Ed Ricketts; the narrative section is reprinted as *The Log from the Sea of Cortez*), *Cannery Row* and *The Pearl* (1947). *The Sea of Cortez* is a story about the travels of Steinbeck and Ricketts in the Gulf of California (also known as the Sea of Cortez) in 1940. The book outlines the day-to-day work and interactions encountered during the trip that ranged from collecting and preserving specimens to boat repairs and

negotiations with authority figures. *Cannery Row* takes place in Monterey, California, and centers on the life of a marine collector named "Doc" who runs Western Biological Laboratory. *Cannery Row* details Doc's interactions with those that live near him, from prostitutes and small store owners, to drifters and barbers. *The Pearl*, which takes place in La Paz, Mexico, centers on an impoverished oyster and pearl diver, Kino. The book follows the brutal path Kino, his wife, and young child must follow, after he finds an immense pearl while diving from his canoe. In the end the apparent fortune of finding the pearl results in the murder of his son, Kino killing three trackers, and the return of the pearl to sea from which it was harvested.

Another gift Steinbeck offered to Rudloe was the gift of encouragement, which took many forms, including their correspondence. Jack will readily discuss with an individual the difficulties he experienced in pursuing traditional education. Impeded by dyslexia, he found traditional classroom rigors exhausting. Unable to keep up with course requirements, he left academia to undertake independent study—a course of action he mentions as particularly beneficial, but also quite costly in other ways. Given that the Nobel winner did not complete his own degree at Stanford, Steinbeck's offerings on this subject cannot be overlooked. In a letter to Rudloe, the author says: "As for the degree, if you could get it without the effort, it would do no harm. But the best people won't demand one of you—only the second raters who have to wear their knowledge in the set of the tassel on their mortarboards. . . . You seem to be doing fine. I think you realize the value of writing one's degrees now." In the same letter, Steinbeck further encouraged Rudloe when he recommended his colleague to Woods Hole and the International Indian Ocean Expedition.

Did Steinbeck's encouragement of Rudloe lead to a marine science and education business that is now impacting tens of thousands of teachers, scientists, and students a year? Did Rudloe try to mimic Doc, the marine collector in *Cannery Row*? Rudloe responds to these questions by answering, "Yes. Actually, I honestly did not read *Cannery Row* until well after I'd met him [Steinbeck], and maybe not even a couple of years after. . . ." Rudloe continues,

[T]here's one letter that's missing, that I would give my eye to have, and I bet it exists in the world. That is the letter of recommendation that he wrote

to Woods Hole, urging them to take me on the International Indian Ocean Expedition, which was one of the key things. . . .

What they call the international geophysical year. . . Kennedy started it, and then Kennedy got shot in the middle of it. And then Johnson . . . Johnson was busy killing it when I had gotten into it. It was a global exploration of the Indian Ocean. So, I was able to talk my way into it, with one researcher then that was in Boston University, who was leading the Madagascar program. And he said, "Well, go to Woods Hole, and try to talk to so-and-so, and see if you can get on board." And he asked me, and it was a really interesting way to do it

[I]t is related to Steinbeck in some ways I went to see Dr. Hes, Arthur Hes, in Boston University, and I said I had a bag of specimens I was bringing up to sell and to see if they would be interested in them for classes. And he said, "Well I can't, for two years I can't really talk to you because I'm going to Madagascar." And I said, "Wow. That's interesting. I want to go." And he showed me some of the corals and all of the stuff that he'd brought back. And I said, "Yes, I wanna do that." And he says, so he stops and says, "Well what would you do there?" And I said, "Well, the same thing I'm doing in Florida."

And I wasn't really doing it--much. "Because," I said, "I would be getting specimens for other researchers who probably can't get to Madagascar." And that hit a nerve with him because, "Well, I'm the program director." He'd been there two or three different times. And he said "I'd get people calling me all the time and saying bring back Nermurdian worms, or bring me back such and such a sponge or tunicates or fish," and he said, "And if I do that, I can't do my work, my own personal research on copepods, and I can't administer the program. I don't have time. So," he says, "I like the concept," and said, "Go get some support for you doing this."

So I went to Harvard, and, other places where I had just been talking to those people, [saying] "I want to do this from the Gulf of Mexico," and, "Hey!

I can go to Madagascar if I can get some letters of recommendation." Some of them didn't really know me or develop the relationship then, so it was a flyer.

But nevertheless, I did get some support letters, including Hes up there, saying, "We thought the idea was good—the concept." And I collected these letters, and then Steinbeck wrote the letter. And, and they said, "Well, hell. The letters were good, but what do you say when John Steinbeck reaches in and recommends that somebody go on?" So the next thing, I was in Madagascar. And then I really had to bone up and learn invertebrate zoology and a lot of marine biology and some ecology.

So I didn't get to read anything like *Cannery Row*. I think when I finally got back and settled in, there was a period of time just before I moved down to Panacea from Tallahassee, and then I read *Cannery Row*. And, by that time I knew more of what he was talking about.

While Rudloe indicates that the early reading of *Sea of Cortez* was an influence early in his career, he also acknowledges that there are some analogies between the setting for *Cannery Row* and Panacea: "Yes . . . It's funny, I have a weird neighbor, a guy named McElderry, who has written *The Panacea Fantasy*, and he does this complete analogy of *Cannery Row* to Panacea. And, well, we didn't have the whore house down the street and Lee Chong. But instead of Lee Chong's Grocery Store, there used to be the Thompson's Grocery Store over here, and there are odd little parallels of the fishing village. Yes, both are in a fishing village, and both are kind of their own collections of strange people, and yes there are parallels that are sort of there. When you go out to Monterey Bay, and you look at *Cannery Row*, it's sort of a very different kind of environment, but it's still sea coast, and when you're around the sea . . . just the nature of the land and having water up against the land . . . makes similarities in environments. And especially working, fishing types of cultures, people that live marginally on the end, the drunks, [etc.] . . ."

The significance of both Steinbeck's support and Jack's acceptance to the program cannot be overlooked: by his own admission, it was in Madagascar that Jack had to dedicate himself to the self-styled learning of "invertebrate zoology and

... marine biology and some ecology" in order to accomplish the work set before him. That work in Madagascar paved the way for more knowledgeable and targeted work in Panacea at the Gulf Marine Specimen Lab. As Dr. Mary Beth Saffo from the Museum of Comparative Zoology, Harvard University, attests, Rudloe's prior training lends itself to the hallmark of a collector and supplier who successfully provides universities with "marine fish and invertebrate specimens . . . [that] have been used for demonstrations in . . . Marine Biology . . . Invertebrate Biology.. Biology of Crustacea . . . and Biology of Invertebrates. Although there are commercial suppliers . . . elsewhere, the [Rudloe's] Laboratory has proven to be the most reliable supplier. The specimens arrive in good condition and are correctly identified to species" (Letter to the authors, 2 August 2002).

That Rudloe is such a well-respected collector-supplier is a testimony to the merit of his own perseverance, tenacity, and love of work. That he is often equated with Doc of Steinbeck's *Cannery Row* may be ascribed to chance. Rudloe focused his reading on *Sea of Cortez* prior to departing for Madagascar, and it wasn't until he returned to the states, determined to make Panacea work, that he read *Cannery Row*. The similarities of character are evident, but Rudloe did not necessarily pattern himself or his work after Steinbeck's Doc.

That Steinbeck *himself* affected Rudloe and consequently affects the marine science and resultant marine science education that Jack pursues through his work may indeed be worthy of consideration, however. When asked to consider this concept during our interview, Rudloe stated emphatically that this was the case. He was also quick to point out that Steinbeck's reach extends far past the Panhandle, recounting his influence on the Pacific Coast—his and Ed Ricketts' stomping grounds. Rudloe's Gulf Specimen lab furnishes numerous colleges and universities with marine specimens for teaching and research. It also provides tours every year for over 10,000 students, most in grammar and middle school. However, his collections in the late 1960's and early 1970's had an even larger effect: they helped trigger the National Cancer Institute's marine pharmacology program.

In our interview, Rudloe mentioned that one publishing agent he's worked with picked on him about the Steinbeck connection he had enjoyed. He recounted her quipping that he had been fed with a "silver spoon" of good luck. Perhaps the success of Gulf Specimen Marine Laboratory and Jack Rudloe—author,



RICKETTS OUT ON THE ROCKS WITH HIS
COLLECTING PAN

etologist, scientist, and teacher—may indeed be attributed to John Steinbeck and the encouragement and advantage his friendship offered. Perhaps the success story is truly Rudloe's, and Steinbeck merely provided a much-needed port in a time of storms, a place to wait and rest until fair weather made for more productive effort. Perhaps, however, the talents of both were bound together, entwined into a cord not easily broken, allowing each to shine and then leave behind a piece of the treasure they share of themselves through the art of their work. But as profound as this synergistic relationship has been, we are forced to ask one larger question: Did Steinbeck have a direct and profound influence on marine science education and research not only in the United States but internationally through his writings and personal relationships?

Regionally, the Steinbeck-Rudloe connection has influenced the development of marine natural products from the Gulf of Mexico. What the 1962 Nobel Laureate in literature did not realize was that he laid the foundation for the discovery of a molecule dubbed "the flagship of marine natural products." It is called bryostatin-1, a molecule harvested from the marine organism known as bryozoans or *Bugula Neritina* (Pettit, "Isolation"). According to Rudloe, this development began with his appearance

on the NBC "Today Show" on April 29, 1968, promoting his book, *The Sea Brings Forth* (1968), in which he brought a number of colorful sea creatures. After this appearance, Rudloe was contacted by Dr. Jonathan Hartwell, the Director of National Cancer Institute (NCI) Natural Products Division in Bethesda, Maryland. Hartwell requested that some common invertebrates and their extracts in the Gulf of Mexico be sent to NCI for testing. Over the next few months, extracts of squid, mantis shrimp, starfish, sponges, soft corals, hard corals, worms, eels, fish, rays, and sharks were shipped to either the NCI or Arizona State University for testing. The extracts were injected into laboratory mice simultaneously with a PS-100 leukemia virus strain. One organism, an obscure bryozoan, otherwise then known as a "brown moss animal" (*Bugula Neritina*) stood out from the other sea creatures in terms of the way it defeated the blood cancer. According to Rudloe, the NCI ordered another pound, then five pounds, then fifty pounds, then five hundred, on up to ten thousand pounds of the bryozoan. Rudloe hired fishermen to drag their shrimp trawls for the "cancer grass," and trained them to clean weed species of algae and other bryozoans off the colony and make it as pure as possible. Dr. George R. Pettit of Arizona State University was the first to isolate the active compound and called it "Bryostatin," which has since been widely studied. This has stimulated our own work with bryostatin and ET743, which is derived from the sea squirt *Ecteinascidia Turbinate* (see articles below, by Manning, *et al.*). The Steinbeck-Rudloe relationship, as evidenced in letters and interviews, reveals much about hidden treasures on several levels, from the literary to the medical, with more possible discoveries to come.

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Authors' note: Our collaboration with Gulf Specimen Marine Lab began in the year 2000 and is focused on marine natural products bryostatin-1 and ET743. The central interview and the other discussions that led to this paper took place in 2003.

SUZANNE MATOS NORTH, BRIAN ADLER, AND THOMAS J. MANNING are colleagues who work together at Valdosta State University in Georgia. Ms. North and Professor Manning are part of the Chemistry Department, and Professor Adler is Dean of the Graduate School. Questions for the authors may be addressed to tmanning@valdosta.edu.