

FROM THE TIDE POOL TO THE STARS: SAILING WITH THE SPIRITS OF JOHN STEINBECK AND ED RICKETTS ON A NEW VOYAGE OF DISCOVERY AROUND BAJA CALIFORNIA¹

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In rubber boots we moved over the flat uncovered by the dropping tide; a silty sand made the water obscure when a rock or a piece of coral was turned over. And as always when one is collecting, we were soon joined by a number of small boys. The very posture of search, the slow movement with the head down, seems to draw people. "What did you lose?" they ask.

"Nothing."

"Then what do you search for?" And this is an embarrassing question. We search for something that will seem like truth to us; we search for understanding; we search for that principle which keys us deeply into the pattern of all life; we search for the relations of things, one to another, as this young man searches for a warm light in his wife's eyes and that one for the hot warmth of fighting. These little boys and young men on the tide flat do not even know that they search for such things too. We say to them, "We are looking for curios, for certain small animals."

Then the little boys help us to search....

Once they know you are generally curious, they bring amazing things. Perhaps we only practice an extension of their urge. It is easy to remember when we were small and lay on our stomachs beside a tide pool and our minds and eyes went so deeply into it that size and identity were lost, and the creeping hermit crab was our size and the tiny octopus a monster. Then the waving algae covered us and we hid under a rock at the bottom and leaped out at fish. It is very possible that we, and even those who probe space with equations, simply extend this wonder.

I read this passage from *The Sea of Cortez: A Leisurely Journal of Travel and Research*, a book written by John Steinbeck and Edward F. Ricketts, to start this evening in the tide pools.² And I read it because I think it conveys the sense of wonder that all of us can feel peering into life on the margins, whether on the shores of Santa Barbara or in the Sea of Cortez. It touches on a sense of the Gulf of California as an aquarium of and for the world, as Jacques Cousteau once called the Sea of Cortez, a place where we can observe the wonders of life, and a laboratory where we can see some of the great experiments we are conducting in the oceans, for worse, and hopefully, for better too. And that is part of the story I would like to share with you tonight.

¹This essay is a lightly revised transcript of a public talk given at the 2005 Conversation on the Liberal Arts. A science writer and environmental journalist, Jon Christensen was a Steinbeck Fellow at San Jose State University when he traveled to the Sea of Cortez in the spring of 2004. He is currently a research fellow in the Center for Environmental Science and Policy and working on a Ph.D. in history at Stanford University. (Address: 265 Scripps Court, Palo Alto, CA 94306; phone: 650-320-9504; email: jonchristensen@stanford.edu)

²The narrative portion of *The Sea of Cortez: A Leisurely Journal of Travel and Research* is still in print as *The Log from the Sea of Cortez* (91-93).

This story begins on Cannery Row in Monterey in California, which, as you know if you have read the book, is:

...a poem, a stink, a grating noise, a quality of light, a tone, a habit, a nostalgia, a dream. Cannery Row is the gathered and scattered, tin and iron and rust and splintered wood, chipped pavement and weed lots and junk heaps, sardine canneries of corrugated iron, honky tonks, restaurants and whore houses, and little crowded groceries, and laboratories and flophouses. Its inhabitants are, as the man once said, "whores, pimps, gamblers, and sons of bitches," by which he meant Everybody. Had the man looked through another peephole he might have said, "Saints and angels and martyrs and holy men," and he would have meant the same thing. (*Cannery Row*, 1)

When Steinbeck met Ricketts in Monterey in 1930, it was the beginning of one of the greatest collaborations ever between a scientist and a writer.

In an essay entitled "About Ed Ricketts," which can be found in current editions of *The Log from the Sea of Cortez*, Steinbeck wrote that they met in a dentist's waiting room, when Ricketts emerged with a bloody molar in hand, "with a surprisingly large piece of jawbone sticking to it."

He was cursing gently as he came through the door. He held the reeking relic out to me and said, "Look at that god-damned thing." I was already looking at it. "That came out of me," he said.

"Seems to be more jaw than tooth," I said.

"He got impatient, I guess. I'm Ed Ricketts."

"I'm John Steinbeck. Does it hurt?"

"Not much. I've heard of you."

"I've heard of you, too. Let's have a drink."

That was the first time I ever saw him. I had heard that there was an interesting man in town who ran a commercial laboratory, had a library of good music, and interests wider than invertebratology. I had wanted to come across him for some time. (229-230)

Soon Steinbeck was spending a lot of time at Ricketts's lab, which was much more than a business and a home. It was an intellectual gathering place clothed in the bohemian nonchalance of the Depression.

We did not think of ourselves as poor then. We simply had no money. Our food was plentiful, what with fishing and planning and a minimum of theft. Entertainment had to be improvised without benefit of currency. Our pleasures consisted in conversation, walks, games, and parties with people of our own financial nonexistence. A real party was dressed with a gallon of thirty-nine-cent wine, and we could have a hell of a time on that. (230)

Steinbeck and Ricketts became best friends.

Knowing Ed Ricketts was instant. After the first moment I knew him, and for the next eighteen years I knew him better than I knew anyone, and perhaps I did not know him at all. Maybe it was that way with all of his friends. He was different from anyone and yet so like that everyone found himself in Ed, and that might be one of the reasons his death had such an impact. It wasn't Ed who had died but a large and important part of oneself. (230)

They were “closer than most good friends and closer, without any sexual implications, than most husbands and wives,” writes Steinbeck’s biographer Jackson Benson (197). Ricketts became an important model for wise characters in Steinbeck’s work, including Doc Burton in *In Dubious Battle*, Casy in *The Grapes of Wrath*, and later, most famously, “Doc” in *Cannery Row*.

In 1939, Ricketts had finally seen his magnum opus, *Between Pacific Tides*, a guide to the inter-tidal ecology of the California coast, published by Stanford University Press. Steinbeck had just published his masterpiece, *The Grapes of Wrath*. It was a *succès de scandale*. Steinbeck was being lauded and attacked. People were burning *The Grapes of Wrath* in the Central Valley, California’s agricultural heartland. Steinbeck was afraid to go out alone for fear of being framed or worse. And he felt that he had taken the novel as far as he could. He wrote to a college friend from Stanford:

The world is sick now. There are things in the tide pools easier to understand than Stalinist, Hitlerite, Democrat, capitalist confusion, voodoo. So I’m going to those things which are relatively more lasting to find a new basic picture. I have too a conviction that a new world is growing under the old, the way a new finger nail grows under a bruised one. I think all the ecologists and sociologists will be surprised some day to find that they did not foresee nor understand it. Just as the politicians of Rome could not have foreseen that the social-political-ethical world for two thousand years would grow out of the metaphysical gropings of a few quiet poets. I think the same thing is happening now. Communist, Fascist, Democrat may find that the real origin of the future lies on the microscope plates of obscure young men, who, puzzled with order and disorder in quantum and neutron, build gradually a picture which will seep down until it is the fiber of the future.... The point of all of this is that I must make a new start. I’ve worked the novel—I know it as far as I can take it. I never did think much of it—a clumsy vehicle at best. And I don’t know the form of the new but I know there is a new which will be adequate and shaped by the new thinking. (*Steinbeck: A Life in Letters*, 193-194)

Ricketts and Steinbeck decided to work together. At first, they planned to write a guide to the San Francisco Bay tidelands. Then they decided they wanted to get farther away. Ricketts wanted to extend his research south from the temperate Pacific faunal region of California to the more tropical Panamic faunal region that begins half way down the coast of Baja California. They used the money from *The Grapes of Wrath* to charter a boat to take them to the Sea of Cortez. That boat was the *Western Flyer*, a 76-foot purse seiner in the Monterey sardine fleet.

In 2004, I went on an expedition to retrace their journey 64 years later.

Why? The world has changed. We don’t need to go to the Sea of Cortez to see that. Just look at Cannery Row. But Doc’s lab is still there. Hopkins Marine Station is just down the shore.

I met biologist Bill Gilly for the first time in the spring of 2003 in the tide pools in front of Hopkins Marine Station. I was a Knight Fellow at Stanford, a mid-career sabbatical for journalists. We were visiting Monterey with our families. I had read *The Log from the Sea of Cortez* earlier in the year. In it Steinbeck and Ricketts wrote: “We have not known a single great scientist who could not discourse freely and interestingly with a child” (62). And I saw that in Gilly as he showed the kids around the tide pools, introducing them to the hermit crabs and sea anemones. I asked him what he thought about the intelligence of invertebrates, a cheeky question I thought. He studied me for a moment

like I was one of his tide pool specimens. "Funny you should ask," he said. "That's one of the things I study."

We started talking about community ecology and how Steinbeck used the community of the tide pool as an overarching metaphor for the human community along Cannery Row. Then he looked at me again with that funny look. And he told me that he was talking with the captain of a fishing boat about retracing their journey to the Sea of Cortez. He asked me if I would like to come along.

The captain of the fishing boat was Frank Donahue. The boat was the *Gus D*, a 73-foot working, wooden fishing boat much like the *Western Flyer*. The other members of the crew were Chuck Baxter, an invertebrate zoologist, and Nancy Burnett, a photographer, both founders of the Monterey Bay Aquarium.

The plan: retrace their journey, visit the same 20 sites, and make comparisons to what they observed, this time using quantitative surveys. We would also extend their research by studying sites on the Pacific coast of Baja California, to study the transition between the Pacific and Panamic fauna. And we would add some sites in roadless areas in the Sea of Cortez, to see if there are any differences in the inter-tidal life depending on the distance from roads and fishing villages. Steinbeck and Ricketts were at sea six weeks. With the additional work we had planned, we would take two months.

When word got out, there was an outpouring of support. There were supplies to feed the crew: food and beer, of course. Steinbeck and Ricketts wrote that they took 2160 individuals of two species, Carta Blanca being their favorite. We took 1728 individuals of six species of Northcoast Brewing Company's finest, at the insistence of their brew master, who said that the Western Flyer would not have left port without a supply since their Pale Ale was the best selling beer west of the Mississippi in 1940. But try as we might to match the enthusiasm of the Steinbeck-Ricketts crew, we only drank 1200. We ate our way through the ecosystems, enjoying wavy-top-shell snail ceviche, limpet pasta, chitons on the half shell, and yellowtail *a la Veracruzana*. And every Thursday and Sunday, we tucked into the veritable Enea spaghetti, made by Bob Enea, a nephew of Sparky Enea, one of the original crewmembers, according to the family recipe.

Needless to say, this was not big science, but a barebones, makeshift expedition, much like the original. It would not have been possible without the support of a great community, and we wanted to share our journey with them and with the world through technology new and old. I used a satellite phone to get email from friends and family and kids in classrooms that were following our journey on an online log that I updated daily at www.seaofcortez.org. Gilly regularly talked to folks via the short wave radio. And we shared our journey via the media through collaborations with National Public Radio and National Geographic Radio Expeditions and the *Los Angeles Times*.

Why go back? This was the question we were often asked. And when I asked it of the school kids who joined us in La Paz and other towns, like the kids who joined Steinbeck and Ricketts in the passage that I read to you earlier, they were quick to answer: "To see how things have changed." Why would you want to see how things have changed? What would that tell you? Do you know anyone who is 64 years old? These kids, who were participating in an environmental education project we organized in conjunction with the San Diego Natural History Museum, got historical ecology as well as the sense of wonder in the tide pools. And when we saw what we were doing reflected in their eyes, we got back a sense of energy and wonder ourselves. We also found that the "big smile" that Ricketts and Steinbeck worried would disappear from Mexican culture

under the onslaught of development and tourism and “American culture with its dearth of inner values”—that big smile and sense of grace was alive and well (Tamm, 114).

There have been a number of exciting changes since the Steinbeck and Ricketts expedition. The first is the tremendous rise of science in the region, and particularly Mexican science, scientists, and institutions that have grown up since the 1960s. We worked closely with Mexican scientists on our expedition, which was co-sponsored by the Instituto Nacional de Ecología, the country’s top environmental research agency. The president of the institute, Exequiel Ezcurra, one of Mexico’s foremost ecologists, joined us for the first leg of our journey, from San Diego to Cabo San Lucas. Other Mexican scientists from the Centro de Investigaciones Biológicas del Noroeste—a biological research institute for the “northwest,” as they call this part of their country—joined us on subsequent legs of the trip.

The other big change is community-based conservation. All around the Baja peninsula, but particularly on the Pacific Coast, fishermen are organized into cooperatives. On the Vizcaino Peninsula, our first stop, they have a lucrative lobster and abalone fishery. While we were there, it became the first community-based fishery to be certified as sustainable by the Marine Stewardship Council. They protect their coastline and it provides for them. And while the lobster and abalone thrive, other species prosper, including gray whales and sea turtles, providing hope that there is a way out of the tragedy of the commons. I think we have a lot to learn from them.

So we took our Sea Cow, which never gave us any trouble, I regret to say, because I had to look elsewhere for a humorous foil, and we landed on the shore and laid out transects and quadrats and counted every living thing down to the size of 2-millimeter snails which were the smallest things that Gilly could find and count, though it was hard for me to pick them out even with two pairs of reading glasses. One of my ongoing interests as a journalist is in whether we can measure the results of conservation and all the resources we are currently investing in conservation. Are we actually doing better? After a while I came to feel that counting countless species in countless quadrats was my comeuppance for being so interested in measuring results.

When we got to Cabo San Lucas, we found it “ferocious with life,” just as Steinbeck and Ricketts had described it, but not the same kind of life (*Log*, 49). There were jet skis, and glass bottom taxis, and party boats blasting Outkast’s latest hit “Hey Ya” night and day. But the inter-tidal rocky shoreline near the old cannery, now abandoned, was utterly unrecognizable. The rocky tide pools were buried in sand from dredging the harbor, creating a beach. Where they had found many different species including three kinds of sea stars, we found sandy worm tubes.

Later in our travels up the coast of the Sea of Cortez, we found places, such as Cayo Islet, which they had described as “burned” and inhospitable to life (*Log*, 106). We found them astonishingly rich with life. What was going on? Were Steinbeck and Ricketts just burned out after too many late nights in La Paz? And so they attributed that feeling to the landscape?

Or was this a kind of “shifting baseline,” as scientists have come to call changes in our perceptions of what is normal over time? They had just come from places that they described as among the richest in the Sea of Cortez, such as Cabo San Lucas and Puerto Escondido. And so by comparison these places looked poor. By contrast, we had just come from those same places, but now they had been utterly changed by development. And so we found these places rich by comparison. And perhaps by being more inhospitable to people, they have been protected and become refuges for biodiversity.

Overall, we found the Sea of Cortez to be still rich with life. At each of the sites we visited, we did boulder turning transects where we would turn over 20 boulders along the shoreline, and under each boulder up to the very last, we found species that were not noted under the previous boulders, indicating that we could have kept going and found more if the tide were not coming back in to cover them up. In many of the same places they visited, we counted as many species as they did and sometimes more.

But in this region of the flying fish and the sea turtle, we saw lots of flying fish but no sea turtles. We did not see swordfish dancing on the water, and great schools of tuna, or big manta rays, that they described. But we did see smaller flying mobula rays, and dolphins accompanied us everywhere. We didn't see but one big shark, and most of the sharks and rays we saw were in fishermen's boats. And the intertidal was lacking in things that people collect and eat, like pearl oysters, and the pink Murex that Sparky collected by the bucketful for girlfriends back home.

And nearly everywhere we went we saw a species that Steinbeck and Ricketts didn't see: the jumbo Humboldt squid, *Dosidicus gigas*. It was a species Ricketts knew from Monterey, but they did not see it in the Sea of Cortez in 1940. Doing the same things they did, we saw them everywhere in the middle reaches of the gulf, where fishermen make a living fishing for the big squid, on the surface and along the shore in the day, and at night surrounding our boat.

How did the squid get here? When did they first appear? What are the dynamics of this new major predator in the ecosystem? Is it because of fishing down the other predators? Or is it the result of some climatic event such as El Niño or La Niña? Or a combination of factors? A chance opportunity that this opportunistic species grabbed to assert a place for itself in this rich ecosystem? These are questions to continue to explore.

We followed satellite images sent to us by a colleague at Stanford to the edge of a great upwelling of cold water carrying nutrients from deep below. On a perfectly clear hot blue desert sea day we found a fog bank sitting mysteriously over the water. We entered into it. We spent days drifting in and out of the fog doing plankton tows. We pulled up samples of the millions of tiny drifting animals at the base of the food chain. When we looked into the samples, we saw thousands of eyes staring back at us, including tiny jumbo squid larvae.

We found squid of all sizes here, from these tiny juveniles, to larger adolescents. We saw adult squid mating near the surface of the water. And we heard sperm whales blowing all around us, feeding on squid at night. In the morning we saw their spouts on the horizon.

Never before on this trip, even when we were walking directly in their footsteps and surveying the same tide pools, did we feel as close to the spirits of John Steinbeck and Ed Ricketts. Here, instead of following them, we were doing what they did, exploring the Sea of Cortez and life in an open-ended leisurely fashion, letting the great force of the gulf carry us along. And here, in this watery gyre under a dome of stars and a full moon, we came close to really feeling in our souls what Steinbeck and Ricketts did: "that one thing is all things—plankton, a shimmering phosphorescence on the sea and the spinning planets and an expanding universe, all bound together by the elastic string of time. It is advisable to look from the tide pool to the stars and then back to the tide pool again" (*Log*, 179).

And what did we see? This incredibly rich and productive ecosystem, supporting a massive population of a new important and powerful predator, showed us that the Sea

of Cortez is not a dead or a dying sea as some have called it, but a living sea. And *viva el Mar de Cortes!*

But it's a changing sea. And that's the challenge we face: to understand our role in those changes, what it has been, what it is, and what it can be. This is where the science of ecology and the practice of conservation are leading us after a lifetime. For that is the perspective we now have on *The Log from the Sea of Cortez*: the perspective of a lifetime.

The changes of a lifetime have led us to an understanding that ecosystems are often not in equilibrium, that human beings are not necessarily the only big drivers of change, that the dynamic nature of ecosystems is the key to evolution and biodiversity, and that disturbance is often the proximate cause of the diversity of life, as well as the biggest threat to its survival.

So how do we put all of this in perspective? Certainly not by putting aside our passion. As it was for Steinbeck and Ricketts, passion was part of our mental provisioning, and as they wrote: "We were determined not to let a passion for unassailable little truths draw in the horizons and crowd the sky down on us."

We suppose this was the mental provisioning of our expedition. We said "Let's go wide open. Let's see what we see, record what we find, and not fool ourselves with conventional scientific strictures. We could not observe a completely objective Sea of Cortez anyway, for in that lonely and uninhabited Gulf our boat and ourselves would change it the moment we entered. By going there, we would bring a new factor to the Gulf. Let us consider that factor and not be betrayed by this myth of permanent objective reality. If it exists at all, it is only available in pickled tatters or in distorted flashes. Let us go," we said, "into the Sea of Cortez, realizing that we become forever a part of it; that our rubber boots slogging through a flat of eel-grass, that the rocks we turn over in a tide pool, make us truly and permanently a factor in the ecology of the region. We shall take something away from it, but we shall leave something too." And if we seem a small factor in a huge pattern, nevertheless it is of relative importance. We take a tiny colony of soft corals from a rock in a little water world. And that isn't terribly important to the tide pool. Fifty miles away the Japanese shrimp boats are dredging with overlapping scoops, bringing up tons of shrimps, rapidly destroying the species so that it may never come back, and with the species destroying the ecological balance of the whole region. That isn't very important in the world. And thousands of miles away the great bombs are falling and the stars are not moved thereby. None of it is important or all of it is. (*Log*, 2-3)

Of the book that resulted from their voyage, critic Lewis Gannett wrote in the *New York Herald Tribune*: "There is more of the whole man, John Steinbeck, in *Sea of Cortez* than in any of his novels.... This is at once the record of a serious biological expedition and the impact of a biologist and a novelist upon each other's minds.... The best of Steinbeck is in it" (*Log*, back cover).

To which one must add: the best of Ed Ricketts too. The whole second half of the original book was a meticulous, well annotated species catalogue, which stood as the best source on the inter-tidal fauna of the Gulf of California for decades. But more than that, Steinbeck didn't keep a diary on the journey. He used Ricketts diary of the voyage when he wrote the narrative portion of the book, incorporating ideas, phrases, passages, and one entire essay from his friend's writings in the narrative.

Their work entered the semi-secret canons of marine biology, ecology, Steinbeck aficionados, "Ed heads" (devotees of the quasi-mystical-scientific-poetic writings of Ricketts), and anyone who has been to Baja California and the Sea of Cortez, where the

very air is “miraculous, and outlines of reality change with the moment,” as Steinbeck wrote. “The sky sucks up the land and disgorges it. A dream hangs over the whole region, a brooding kind of hallucination” (*Log*, 68).

The voyage that Steinbeck and Ricketts made in the spring of 1940 is now part of the brooding hallucination that hangs over the Sea of Cortez. The book sings with the crackling energy of modernism gone haywire searching for a new way through science. While they were traveling along the coast of Baja California on the *Western Flyer*, “Hitler marched into Denmark and into Norway, France had fallen, the Maginot line was lost—we didn’t know it,” Steinbeck wrote (*Log*, 7). “The great world dropped away very quickly” (*Log*, 173).

But when they got home, the great world pressed in on them. In the days just after *The Sea of Cortez* was published, Pearl Harbor was bombed. Steinbeck enlisted in the war as a writer and propagandist. Ricketts served at the Presidio in Monterey. Their literary and scientific collaboration was interrupted.

Steinbeck said that he wrote *Cannery Row* out of his own homesickness for Monterey and because soldiers had asked him to tell stories about the characters from Monterey they knew from *Tortilla Flat*. For Steinbeck’s biographer, Jackson Benson, there is more at stake in *Cannery Row*. Benson writes that the book “is in a sense a fictional-poetic version” of *The Log from the Sea of Cortez*, and “Doc” is “a metaphor for the spirit of Ed as Steinbeck perceived it. Part of the motive for writing the novel was the press on its author of unfinished business” (556).

When he was finished writing *Cannery Row*, Steinbeck visited Monterey with a typescript for Ed to read. He wanted to make sure that Ed wouldn’t resent being fictionalized, Benson writes. “Ricketts was sometimes called ‘the Mandarin’ because of his habit of sitting cross-legged on his bed and quietly nodding and smiling in response to whatever nonsense was going on in the room at the time,” Benson writes. “When John gave him the typescript and asked him to read it to see if he wanted John to make any changes, Ed sat on his bed and ‘read it through carefully, smiling, and when he had finished he said, “Let it go that way. It is written in kindness. Such a thing can’t be bad”” (560).

For Steinbeck and Ricketts there was something of a search for the Holy Grail in the trip to the Gulf of California. They talked of going north together to the Queen Charlotte Islands to complete a trilogy of works: *Between Pacific Tides*, *The Sea of Cortez*, and a new book on the Outer Shores. But Ed Ricketts was hit by a train on May 8, 1948. He died three days later and something went out of John Steinbeck.

“He was my partner for eighteen years—he was part of my brain,” Steinbeck wrote to friends. “At one time a very eminent zoologist said that the two of us together were the best zoologists in America,” Steinbeck later said, “and when he was killed I was destroyed” (Tamm, 290).

The Sea of Cortez would be their last and greatest collaboration.

Of the Sea of Cortez, Steinbeck wrote:

Trying to remember the Gulf is like trying to re-create a dream. This is by no means a sentimental thing, it has little to do with beauty or even conscious liking. But the Gulf does draw one.... If it were lush and rich, one could understand the pull, but it is fierce and hostile and sullen. The stone mountains pile up to the sky and there is little fresh water. But we know we must go back if we live, and we don’t know why. (*Log*, 105)

I know why. I hope you do too.

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