



JOHN STEINBECK

WINNER OF THE 1962 NOBEL PRIZE FOR LITERATURE

THE LOG FROM
THE *Sea of Cortez*

Being the
narrative portion
of *Sea of Cortez*,
the report of the
Steinbeck-Ricketts
expedition in the
Gulf of California

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**The
Log from
the
*Sea of Cortez***

The narrative portion of the book, *Sea of Cortez*,
by John Steinbeck and E. F. Ricketts, 1941,

here reissued with a profile

“About Ed Ricketts”

by

JOHN STEINBECK

2. It required the same amount of gasoline whether it ran or not, apparently being able to absorb this fluid through its body walls without recourse to explosion. It had always to be filled at the beginning of every trip.

3. It had apparently some clairvoyant powers, and was able to read our minds, particularly when they were inflamed with emotion. Thus, on every occasion when we were driven to the point of destroying it, it started and ran with a great noise and excitement. This served the double purpose of saving its life and of resurrecting in our minds a false confidence in it.

4. It had many cleavage points, and when attacked with a screwdriver, fell apart in simulated death, a trait it had in common with opossums, armadillos, and several members of the sloth family, which also fall apart in simulated death when attacked with a screwdriver.

5. It hated Tex, sensing perhaps that his knowledge of mechanics was capable of diagnosing its shortcomings.

6. It completely refused to run: (a) when the waves were high, (b) when the wind blew, (c) at night, early morning, and evening, (d) in rain, dew, or fog, (e) when the distance to be covered was more than two hundred yards. But on warm, sunny days when the weather was calm and the white beach close by—in a word, on days when it would have been a pleasure to row—the Sea-Cow started at a touch and would not stop.

7. It loved no one, trusted no one. It had no friends.

Perhaps toward the end, our observations were a little warped by emotion. Time and again as it sat on the stern with its pretty little propeller lying idly in the water, it was very close to death. And in the end, even we were infected with its malignancy and its dishonesty. We should have destroyed it, but we did not. Arriving home, we gave it a new coat of aluminum paint, spotted it at points with new red enamel, and sold it. And we might have rid the world of this mechanical cancer!

four

It would be ridiculous to suggest that ours was anything but a makeshift expedition. The owner of a boat on short charter does not look happily on any re-designing of his ship. In a month or two we could have changed the *Western Flyer* about and made her a collector's dream, but we had neither the time nor the money to do it. The low-tide period was approaching. We had on board no permanent laboratory. There was plenty of room for one in the fish-hold, but the dampness there would have rusted the instruments overnight. We had no dark-room, no permanent aquaria, no tanks for keeping animals alive, no pumps for delivering sea water. We had not even a desk except the galley table. Microscopes and cameras were put away in an empty bunk. The enameled pans for laying out animals were in a large crate lashed to the net-table aft, where it shared the space with the two skiffs. The hatch cover of the fish-hold became laboratory and aquarium, and we carried sea water in buckets to fill the pans. Another empty bunk was filled with flashlights, medicines, and more precious chemicals. Dip-nets, wooden collecting buckets, and vials and jars in their cases were stowed in the fish-hold. The barrels of alcohol and formaldehyde were lashed firmly to the rail on deck, for all of us had, I think, a horror-thought of fifteen gallons of U.S.P. formaldehyde broken loose and burst. One achieves a respect and a distaste for formaldehyde from working with it. Fortunately, none of us had a developed formalin allergy. Our small refrigerating chamber, powered by a two-cycle gasoline engine and designed to cool sea water for circulation to living animals, began the trip on top of the deckhouse and ended back on the net-table. This unit, by the way, was not very effective, the motor being jerky and not of sufficient power. But on certain

days in the Gulf it did manage to cool a little beer or perhaps more than a little, for the crew fell in joyfully with our theory that it is unwise to drink unboiled water, and boiled water isn't any good. In addition, the weather was too hot to boil water, and besides the crew wished to test this perfectly sound scientific observation thoroughly. We tested it by reducing the drinking of water to an absolute minimum.

A big pressure tube of oxygen was lashed to a deck rail, its gauges and valves wrapped in canvas. Gradually, the boat was loaded and the materials put away, some never to be taken out again. It was agreed that we should all stand wheel-watch when we were running night and day; but once in the Gulf, and working at collecting stations, the hired crew should work the boat, since we would anchor at night and run only during the daytime.

Toward the end of the preparation, a small hysteria began to build in ourselves and our friends. There were hundreds of unnecessary trips back and forth. Some materials were stowed on board with such cleverness that we never found them again. Now the whole town of Monterey was becoming fevered and festive—but not because of our going. At the end of the sardine season, canneries and boat owners provide a celebration. There is a huge barbecue on the end of the pier with free beef and beer and salad for all comers. The sardine fleet is decorated with streamers and bunting and serpentine, and the boat with the biggest season catch is queen of a strange nautical parade of boats; and every boat is an open house, receiving friends of owners and of crew. Wine flows beautifully, and the parade of boats that starts with dignity and precision sometimes ends in a turmoil. This fiesta took place on Sunday, and we were to sail on Monday morning. The *Western Flyer* was decorated like the rest with red and blue bunting and serpentine. Master and crew refused to sail before the fiesta was over. We rode in the parade of boats, some of us in the crow's-nest and some on the house. With five thousand other people we crowded on the pier and ate great hunks of meat and drank beer and heard speeches. It was the biggest bar-

becue the sardine men had ever given, and the potato salad was served out of washtubs. The speeches rose to a crescendo of patriotism and good feeling beyond anything Monterey had ever heard.

There should be here some mention of the permits obtained from the Mexican government. At the time of our preparation, Mexico was getting ready for a presidential election, and the apparent issues were so complex as to cause apprehension that there might be violence. The nation was a little nervous, and it seemed to us that we should be armed with permits which clearly established us as men without politics or business interests. The work we intended to do might well have seemed suspicious to some patriotic customs official or soldier—a small boat that crept to uninhabited points on a barren coast, and a party which spent its time turning over rocks. It was not likely that we could explain our job to the satisfaction of a soldier. It would seem ridiculous to the military mind to travel fifteen hundred miles for the purpose of turning over rocks on the seashore and picking up small animals, very few of which were edible; and doing all this without shooting at anyone. Besides, our equipment might have looked subversive to one who had seen the war sections of *Life* and *Pic* and *Look*. We carried no firearms except a .22-caliber pistol and a very rusty ten-gauge shotgun. But an oxygen cylinder might look too much like a torpedo to an excitable rural soldier, and some of the laboratory equipment could have had a lethal look about it. We were not afraid for ourselves, but we imagined being held in some mud *cuartel* while the good low tides went on and we missed them. In our naïveté, we considered that our State Department, having much business with the Mexican government, might include a paragraph about us in one of its letters, which would convince Mexico of our decent intentions. To this end, we wrote to the State Department explaining our project and giving a list of people who would confirm the purity of our motives. Then we waited with a childlike faith that when a thing is stated simply and evidence of its truth is included there need be no mix-up. Besides, we told ourselves, we were

American citizens and the government was our servant. Alas, we did not know diplomatic procedure. In due course, we had an answer from the State Department. In language so diplomatic as to be barely intelligible it gently disabused us. In the first place, the State Department was *not* our servant, however other departments might feel about it. The State Department had little or no interest in the collection of marine invertebrates unless carried on by an institution of learning, preferably with Dr. Butler as its president. The government never made such representations for private citizens. Lastly, the State Department hoped to God we would not get into trouble and appeal to it for aid. All this was concealed in language so beautiful and incomprehensible that we began to understand why diplomats say they are "studying" a message from Japan or England or Italy. We studied this letter for the better part of one night, reduced its sentences to words, built it up again, and came out with the above-mentioned gist. "Gist" is, we imagine, a word which makes the State Department shudder with its vulgarity.

There we were, with no permits and the imaginary soldier still upset by our oxygen tube. In Mexico, certain good friends worked to get us the permits; the consul-general in San Francisco wrote letters about us, and then finally, through a friend, we got in touch with Mr. Castillo Najera, the Mexican ambassador to Washington. To our wonder there came an immediate reply from the ambassador which said there was no reason why we should not go and that he would see the permits were issued immediately. His letter said just that. There was a little sadness in us when we read it. The ambassador seemed such a good man we felt it a pity that he had no diplomatic future, that he could never get anywhere in the world of international politics. We understood his letter the first time we read it. Clearly, Mr. Castillo Najera is a misfit and a rebel. He not only wrote clearly, but he kept his word. The permits came through quickly and in order. And we wish here and now to assure this gentleman that whenever the inevitable punishment for his logic and

clarity falls upon him we will gladly help him to get a new start in some other profession.

When the permits arrived, they were beautifully sealed so that even a soldier who could not read would know that if we were not what we said we were at least influential enough spies and saboteurs to be out of his jurisdiction.

And so our boat was loaded, except for the fuel tanks, which we planned to fill at San Diego. Our crew entered the contests at the sardine fiesta—the skiff race, the greased-pole walk, the water-barrel tilt—and they did not win anything, but no one cared. And late in the night when the feast had died out we slept ashore for the last time, and our dreams were cluttered with things we might have forgotten. And the beer cans from the fiesta washed up and down the shore on the little brushing waves behind the breakwater.

We had planned to sail about ten o'clock on March 11, but so many people came to see us off and the leave-taking was so pleasant that it was afternoon before we could think of going. The moment or hour of leave-taking is one of the pleasantest times in human experience, for it has in it a warm sadness without loss. People who don't ordinarily like you very well are overcome with affection at leave-taking. We said good-by again and again and still could not bring ourselves to cast off the lines and start the engines. It would be good to live in a perpetual state of leave-taking, never to go nor to stay, but to remain suspended in that golden emotion of love and longing; to be missed without being gone; to be loved without satiety. How beautiful one is and how desirable; for a few moments one will have ceased to exist. Wives and fiancées were there, melting and open. How beautiful they were too; and against the hull of the boat the beer cans from the fiesta of yesterday tapped lightly like little bells, and the sea-gulls flew around and around but did not land. There was no room for them—too many people were seeing us off. Even a few strangers were caught in the magic and came aboard and wrung our hands and went into the galley. If our medicine chest had held out

we might truly never have sailed. But about twelve-thirty the last dose was prescribed and poured and taken. Only then did we realize that not only were *we* fortified against illness, but that fifty or sixty inhabitants of Monterey could look forward to a long period of good health.

The day of charter had arrived. That instrument said we would leave on the eleventh, and the master was an honest man. We ejected our guests, some forcibly. The lines were cast off. We backed and turned and wove our way out among the boats of the fishing fleet. In our rigging the streamers, the bunting, the serpentine still fluttered, and as the breakwater was cleared and the wind struck us, we seemed, to ourselves at least, a very brave and beautiful sight. The little bell buoy on the reef at Cabrillo Point was excited about it too, for the wind had freshened and the float rolled heavily and the four clappers struck the bell with a quick tempo. We stood on top of the deckhouse and watched the town of Pacific Grove slip by and dark pine-covered hills roll back on themselves as though they moved, not we.

We sat on a crate of oranges and thought what good men most biologists are, the tenors of the scientific world—temperamental, moody, lecherous, loud-laughing, and healthy. Once in a while one comes on the other kind—what used in the university to be called a “dry-ball”—but such men are not really biologists. They are the embalmers of the field, the picklers who see only the preserved form of life without any of its principle. Out of their own crusted minds they create a world wrinkled with formaldehyde. The true biologist deals with life, with teeming boisterous life, and learns something from it, learns that the first rule of life is living. The dry-balls cannot possibly learn a thing every starfish knows in the core of his soul and in the vesicles between his rays. He must, so know the starfish and the student biologist who sits at the feet of living things, proliferate in all directions. Having certain tendencies, he must move along their lines to the limit of their potentialities. And we have known biologists who did proliferate in all directions: one or two have had a little trouble about it. Your true bio-

logist will sing you a song as loud and off-key as will a blacksmith, for he knows that morals are too often diagnostic of prostatitis and stomach ulcers. Sometimes he may proliferate a little too much in all directions, but he is as easy to kill as any other organism, and meanwhile he is very good company, and at least he does not confuse a low hormone productivity with moral ethics.

The *Western Flyer* pushed through the swells toward Point Joe, which is the southern tip of the Bay of Monterey. There was a line of white which marked the open sea, for a strong north wind was blowing, and on that reef the whistling buoy rode, roaring like a perplexed and mournful bull. On the shore road we could see the cars of our recent friends driving along keeping pace with us while they waved handkerchiefs sentimentally. We were all a little sentimental that day. We turned the buoy and cleared the reef, and as we did the boat rolled heavily and then straightened. The north wind drove down on our tail, and we headed south with the big swells growing under us and passing, so that we seemed to be standing still. A squadron of pelicans crossed our bow, flying low to the waves and acting like a train of pelicans tied together, activated by one nervous system. For they flapped their powerful wings in unison, coasted in unison. It seemed that they tipped a wavetop with their wings now and then, and certainly they flew in the troughs of the waves to save themselves from the wind. They did not look around or change direction. Pelicans seem always to know exactly where they are going. A curious sea-lion came out to look us over, a tawny, crusty old fellow with rakish mustaches and the scars of battle on his shoulders. He crossed our bow too and turned and paralleled our course, trod water, and looked at us. Then, satisfied, he snorted and cut for shore and some sea-lion appointment. They always have them, it's just a matter of getting around to keeping them.

And now the wind grew stronger and the windows of houses along the shore flashed in the declining sun. The forward guy-wire of our mast began to sing under the wind, a deep and yet penetrating tone like the lowest

string of an incredible bull-fiddle. We rose on each swell and skidded on it until it passed and dropped us in the trough. And from the galley ventilator came the odor of boiling coffee, a smell that never left the boat again while we were on it.

In the evening we came back restlessly to the top of the deckhouse, and we discussed the Old Man of the Sea, who might well be a myth, except that too many people have seen him. There is some quality in man which makes him people the ocean with monsters and one wonders whether they are there or not. In one sense they are, for we continue to see them. One afternoon in the laboratory ashore we sat drinking coffee and talking with Jimmy Costello, who is a reporter on the Monterey *Herald*. The telephone rang and his city editor said that the decomposed body of a sea-serpent was washed up on the beach at Moss Landing, half-way around the Bay. Jimmy was to rush over and get pictures of it. He rushed, approached the evil-smelling monster from which the flesh was dropping. There was a note pinned to its head which said, "Don't worry about it, it's a basking shark. [Signed] Dr. Rolph Bolin of the Hopkins Marine Station." No doubt that Dr. Bolin acted kindly, for he loves true things; but his kindness was a blow to the people of Monterey. They so wanted it to be a sea-serpent. Even we hoped it would be. When sometime a true sea-serpent, complete and undecayed, is found or caught, a shout of triumph will go through the world. "There, you see," men will say, "I knew they were there all the time. I just had a feeling they were there." Men really need sea-monsters in their personal oceans. And the Old Man of the Sea is one of these. In Monterey you can find many people who have seen him. Tiny Colletto has seen him close up and can draw a crabbed sketch of him. He is very large. He stands up in the water, three or four feet emerged above the waves, and watches an approaching boat until it comes too close, and then he sinks slowly out of sight. He looks somewhat like a tremendous diver, with large eyes and fur shaggily hanging from him. So far, he has not been photographed. When he is, probably Dr. Bolin will

identify him and another beautiful story will be shattered. For this reason we rather hope he is never photographed, for if the Old Man of the Sea should turn out to be some great malformed sea-lion, a lot of people would feel a sharp personal loss—a Santa Claus loss. And the ocean would be none the better for it. For the ocean, deep and black in the depths, is like the low dark levels of our minds in which the dream symbols incubate and sometimes rise up to sight like the Old Man of the Sea. And even if the symbol vision be horrible, it is there and it is ours. An ocean without its unnamed monsters would be like a completely dreamless sleep. Sparky and Tiny do not question the Old Man of the Sea, for they have looked at him. Nor do we question him because we know he is there. We would accept the testimony of these boys sufficiently to send a man to his death for murder, and we know they saw this monster and that they described him as they saw him.

We have thought often of this mass of sea-memory, or sea-thought, which lives deep in the mind. If one ask for a description of the unconscious, even the answer-symbol will usually be in terms of a dark water into which the light descends only a short distance. And we have thought how the human fetus has, at one stage of its development, vestigial gill-slits. If the gills are a component of the developing human, it is not unreasonable to suppose a parallel or concurrent mind or psyche development. If there be a life-memory strong enough to leave its symbol in vestigial gills, the preponderantly aquatic symbols in the individual unconscious might well be indications of a group psyche-memory which is the foundation of the whole unconscious. And what things must be there, what monsters, what enemies, what fear of dark and pressure, and of prey! There are numbers of examples wherein even invertebrates seem to remember and to react to stimuli no longer violent enough to cause the reaction. Perhaps, next to that of the sea, the strongest memory in us in that of the moon. But moon and sea and tide are one. Even now, the tide establishes a measurable, although minute, weight differential. For example, the steamship

Majestic loses about fifteen pounds of its weight under a full moon.¹ According to a theory of George Darwin (son of Charles Darwin), in pre-Cambrian times, more than a thousand million years ago, the tides were tremendous; and the weight differential would have been correspondingly large. The moon-pull must have been the most important single environmental factor of littoral animals. Displacement and body weight then must certainly have decreased and increased tremendously with the rotation and phases of the moon, particularly if the orbit was at that time elliptic. The sun's reinforcement was probably slighter, relatively.

Consider, then, the effect of a decrease in pressure on gonads turgid with eggs or sperm, already almost bursting and awaiting the slight extra pull to discharge. (Note also the dehiscence of ova through the body walls of the polychaete worms. These ancient worms have their ancestry rooted in the Cambrian and they are little changed.) Now if we admit for the moment the potency of this tidal effect, we have only to add the concept of inherited psychic pattern we call "instinct" to get an inkling of the force of the lunar rhythm so deeply rooted in marine animals and even in higher animals and in man.

When the fishermen find the Old Man rising in the pathways of their boats, they may be experiencing a reality of past and present. This may not be a hallucination; in fact, it is little likely that it is. The interrelations are too delicate and too complicated. Tidal effects are mysterious and dark in the soul, and it may well be noted that even today the effect of the tides is more valid and strong and widespread than is generally supposed. For instance, it has been reported that radio reception is related to the rise and fall of Labrador tides,² and that there may be a relation between tidal rhythms and the recently observed fluctuations in the speed of light.³ One could safely predict that all physiological processes cor-

respondingly might be shown to be influenced by the tides, could we but read the indices with sufficient delicacy.

It appears that the physical evidence for this theory of George Darwin is more or less hypothetical, not in fact, but by interpretation, and that critical reasoning could conceivably throw out the whole process and with it the biologic connotations, because of unknown links and factors. Perhaps it should read the other way around. The animals themselves would seem to offer a striking confirmation to the tidal theory of cosmogony. One is almost forced to postulate some such theory if he would account causally for this primitive impress. It would seem far-fetched to attribute the strong lunar effects actually observable in breeding animals to the present fairly weak tidal forces only, or to coincidence. There is tied up to the most primitive and powerful racial or collective instinct a rhythm sense or "memory" which affects everything and which in the past was probably more potent than it is now. It would at least be more plausible to attribute these profound effects to devastating and instinct-searing tidal influences active during the formative times of the early race history of organisms; and whether or not any mechanism has been discovered or is discoverable to carry on this imprint through the germ plasms, the fact remains that the imprint is there. The imprint is in us and in Sparky and in the ship's master, in the palolo worm, in mussel worms, in chitons, and in the menstrual cycle of women. The imprint lies heavily on our dreams and on the delicate threads of our nerves, and if this seems to come a long way from sea-serpents and the Old Man of the Sea, actually it has not come far at all. The harvest of symbols in our minds seems to have been planted in the soft rich soil of our prehumanity. Symbol, the serpent, the sea, and the moon might well be only the signal light that the psycho-physiologic warp exists.

¹ Marmer, *The Tide*, 1926, p. 26.

² *Science Supplement*, Vol. 80, No. 2069, p. 7, Aug. 24, 1934.

³ *Science*, Vol. 81, No. 2091, p. 101, Jan. 25, 1935.

Harvard man, a Yale man, a Stanford man—that is, the ideal—is as easily recognized as a tuna, and he has, by a process of elimination, survived the tests against idiocy and brilliance. Even in physical matters the standard is maintained until it is impossible, from speech, clothing, haircuts, posture, or state of mind, to tell one of these units of his school from another. In this connection it would be interesting to know whether the general collectivization of human society might not have the same effect. Factory mass production, for example, requires that every man conform to the tempo of the whole. The slow must be speeded up or eliminated, the fast slowed down. In a thoroughly collectivized state, mediocre efficiency might be very great, but only through the complete elimination of the swift, the clever, and the intelligent, as well as the incompetent. Truly collective man might in fact abandon his versatility. Among school animals there is little defense technique except head-long flight. Such species depend for survival chiefly on tremendous reproduction. The great loss of eggs and young to predators is the safety of the school, for it depends for its existence on the law of probability that out of a great many which start some will finish.

It is interesting and probably not at all important to note that when a human state is attempting collectivization, one of the first steps is a frantic call by the leaders for an increased birth rate—replacement parts in a shoddy and mediocre machine.

Our interest had been from the first in the common animals and their associations, and we had not looked for rarities. But it was becoming apparent that we were taking a number of new and unknown species. Actually, more than fifty species undescribed at the time of capture will have been taken. These will later have been examined, classified, described, and named by specialists. Some of them may not be determined for years, for it is one of the little by-products of the war that scientific men are cut off from one another. A Danish specialist in one field is unable to correspond with his colleague in California. Thus some of these new animals

may not be named for a long time. We have listed in the Appendix those already specified and indicated in so far as possible those which have not been worked on by specialists.

Dr. Rolph Bolin, ichthyologist at the Hopkins Marine Station, found in our collection what we thought to be a new species of commensal fish which lives in the anus of a cucumber, flipping in and out, possibly feeding on the feces of the host but more likely merely hiding in the anus from possible enemies. This fish later turned out to be an already named species, but, carrying on the ancient and disreputable tradition of biologists, we had hoped to call it by the euphemistic name *Proctophilus winchellii*.

There are some marine biologists whose chief interest is in the rarity, the seldom seen and unnamed animal. These are often wealthy amateurs, some of whom have been suspected of wishing to tack their names on unsuspecting and unresponsive invertebrates. The passion for immortality at the expense of a little beast must be very great. Such collectors should to a certain extent be regarded as in the same class with those philatelists who achieve a great emotional stimulation from an unusual number of perforations or a misprinted stamp. The rare animal may be of individual interest, but he is unlikely to be of much consequence in any ecological picture. The common, known, multitudinous animals, the red pelagic lobsters which litter the sea, the hermit crabs in their billions, scavengers of the tide pools, would by their removal affect the entire region in widening circles. The disappearance of plankton, although the components are microscopic, would probably in a short time eliminate every living thing in the sea and change the whole of man's life, if it did not through a seismic disturbance of balance eliminate all life on the globe. For these little animals, in their incalculable numbers, are probably the base food supply of the world. But the extinction of one of the rare animals, so avidly sought and caught and named, would probably go unnoticed in the cellular world.

Our own interest lay in relationships of animal to animal. If one observes in this relational sense, it seems apparent that species are only commas in a sentence, that each species is at once the point and the base of a pyramid, that all life is relational to the point where an Einsteinian relativity seems to emerge. And then not only the meaning but the feeling about species grows misty. One merges into another, groups melt into ecological groups until the time when what we know as life meets and enters what we think of as non-life: barnacle and rock, rock and earth, earth and tree, tree and rain and air. And the units nestle into the whole and are inseparable from it. Then one can come back to the microscope and the tide pool and the aquarium. But the little animals are found to be changed, no longer set apart and alone. And it is a strange thing that most of the feeling we call religious, most of the mystical out-crying which is one of the most prized and used and desired reactions of our species, is really the understanding and the attempt to say that man is related to the whole thing, related inextricably to all reality, known and unknowable. This is a simple thing to say, but the profound feeling of it made a Jesus, a St. Augustine, a St. Francis, a Roger Bacon, a Charles Darwin, and an Einstein. Each of them in his own tempo and with his own voice discovered and reaffirmed with astonishment the knowledge that all things are one thing and 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.