John Steinbeck and Ed Ricketts: Holistic Worldview
What did John Steinbeck and Ed Ricketts give to science – and how to learn from that?

W. Gilly
Hopkins Marine Station
Ecological Mavericks: The collaborative voices of Steinbeck and Ricketts

John and Carol Steinbeck
Appreciation of each others’ strengths: commensal relationship, a “phalanx.”

Edward Flanders Ricketts
(1897-1948)

JS – writer, focused attention, imagination.
EFR – scientist, catalogued, broadly curious.
CS – catalyzed literature-science connection.

Participation was a concept all valued.
Steinbeck’s Holistic Sense of Place

“Each figure is a population and the stones—the trees the muscled mountains are the world—but not the world apart from man—the world and man—the one inseparable unit man and his environment. Why they should ever have been understood as being separate I do not know”

JS, 1932

https://www.viamagazine.com/destinations/californias-steinbeck-country
John Steinbeck
1902-1968
Born in 1902 in Salinas, California...
... in the California Central Valley, one of the most productive agricultural areas in the world, where half of U.S. fruits, nuts, and vegetables are grown.
Steinbeck worked summers in the fields; this setting and the migrant farm workers he came to know deeply influenced most of his later written work.
The California farm laboring class, the migrant workers, and later the midwesterners displaced by the Dust bowl years of the 1930s became his cause and his focus.
The factory workers from the nearby coastal towns of the Monterrey Bay peninsula also provided Steinbeck with settings and characters.
Another important influence was Steinbeck’s friend Ed Ricketts, a marine biologist with a laboratory in Monterrey, with whom he took many marine collecting trips and expeditions, and co-wrote articles and books.

Ricketts became the model for “Doc” in Steinbeck’s books about Monterrey. Ecological themes became prominent in Steinbeck’s work as a result of this relationship.
“The statistics on Ed Ricketts would read: Born in Chicago, played in the streets, went to public school, studied biology at the University of Chicago. Opened a small commercial laboratory in Pacific Grove, California. Moved to Cannery Row in Monterey. Degrees—Bachelor of Science only; clubs, none; honors, none. Army service—both World Wars. Killed by a train at the age of fifty-two. Within that frame he went a long way and burned a deep scar.”
"Inter-relation seems to be pretty much the keynote of modern holistic concepts, wherein the whole consists of the animal or the community in its environment, the notion of relation being significant."

E.F. Ricketts, 1936. Unpublished Zoological Introduction to Between Pacific Tides
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BETWEEN

An account of the habits and habitats of some five hundred of the common, conspicuous sea-shore invertebrates of the Pacific Coast between Sitka, Alaska, and northern Mexico

PACIFIC

By

EDWARD F. RICKETTS

and JACK CALVIN

Foreword by JOHN STEINBECK

Line drawings by RITCHIE LOVEJOY

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TIDES
Ecology is the science of relationships. Of living relationships. There are 3 or 4 approaches. E.F. Ricketts, 1945 Notes from “The Outer Shore Transcript”
The first is the most superficial. And it’s more or less what I’m doing now: cataloging the beasts of a given region; but doing it quantitatively with regard to the environment rather than the taxonomic aspects.

E.F. Ricketts, 1945 Notes
With the second method...attempts are made to determine the loose aggregations of several species, or associations, into which animals band themselves...

E.F. Ricketts, 1945 Notes
“...the third method: if you know the natural history, but especially the complete life history of the beasts chiefly involved, you can allocate it accurately and understand just how and even why it occurs in a certain place at a given period in its life history ...”

E.F. Ricketts, 1945 Notes

The jumbo squid is taken only during certain years when water conditions are favorable. For example, during the summer of 1934, jumbo squid, which had been scarce for many years, suddenly appeared in appreciable numbers in southern California waters.

California Fish Bulletin 49, 1935
Photos: Humboldt Squid Have a Bad Day at the Beach
A fourth significant method hasn’t even been suggested so far as I know: that of the ‘feeding-habitat-niche’. Different animals have solved this in different parts of the world, but the animals, tho widely separated, are strikingly similar morphologically, and of course they occupy an identical niche.

E.F. Ricketts, 1945 Notes

Predatory intertidal snails

Nucella emarginata, Pacific Grove, CA

Thais biserialis, Cedros Island, Mexico
“All over the world, littorines...occupy the high rocky cliffs and ledges and benches; their physiological needs are similar but the species are different.”
E.F. Ricketts, 1945 Notes

Littorina keenae, Pacific Grove, Ca
Littorina aspera, Pt. Marcial, BCS
“South of Cedros Island there are identical appearing habitats where \( S. \) purpuratus doesn’t occur. But you can look there confidently and see a very similar urchin that clings just as tight, that lives, protects itself, and no doubt reproduces just like the \( S. \) to which it isn’t even closely related phyletically.”

E.F. Ricketts, 1945 Notes
“Same is true of Pisaster ochraceus in the N Temp and Heliaster in the Panamic.”

E.F. Ricketts, 1945 Notes
“In the N. Temp Pacific the genus Acmea is highly developed, the limpets. In the Panamic zone some of these niches are taken by animals that at first glance you’d swear were Acmaea, but they belong to a totally different group of Gastropods – the pulmonates.”
E.F. Ricketts, 1945 Notes

Lottia digitalis, Pacific Grove, CA
Siphonaria maura, Pt. Marcial, BCS
Of course the “answer” is that an integration of all this would give a true picture of ecology. But all these things could be tied in together by a true ecology in which the important thing is neither the region, or the association, or the animal itself … or its various stages or needs, or even the ecological niche, but in which the unit is the relationship.

E.F. Ricketts, 1945 Notes

And that could be an exact and a satisfyingly quantitative science in which the vectors representing these relationships, their direction, extension, and strength or intensity, would be considered and evaluated.
Ricketts recognized a deep relationship between man and nature

“Who would see a replica of man’s social structure has only to examine the abundant and various life of the tidepools, where miniature communal societies wage dubious battle against equally potent societies in which the individual is paramount, with trends shifting, maturing, or dying out, with all the diving organisms balanced against the limitations of the dead kingdom of rocks and currents and temperatures and dissolved gases. A study of animal communities has this advantage: they are merely what they are… here the struggle is unmasked and the beauty is unmasked.”

On Observation and Discovery

"The process of rediscovery might be as follows: a young, inquisitive and original man might one morning find a fissure in the traditional technique of thinking. Through this fissure he might look out and find a new external world about him. In his excitement a few disciples would cluster about him and look again at the world they knew and find it fresh. From this nucleus there would develop a frantic new seeing and a cult of new seers who, finding some traditional knowledge incorrect, would throw out the whole structure and start afresh."

John Steinbeck, 1948. Foreword to Between Pacific Tides

Seeing/Observing  \[\rightarrow\]  Describing/Analyzing  \[\rightarrow\]  Questioning

"Discovery is to see what everyone else has seen but to think what no one else has thought."
Albert Szent-Gyorgyi
On Observation and Discovery

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John Steinbeck, 1948. Foreword to Between Pacific Tides

“Science is always wrong. It never solves a problem without creating ten more.”

George Bernard Shaw