

The book cover features a light beige background with various scientific illustrations in dark green ink. The illustrations include a starfish at the top left, a larva in an oval capsule at the top center, a segmented worm at the top right, a scallop on the left, a nautilus shell on the right, a fish on the right, a crab at the bottom right, a worm at the bottom center, a coral-like structure at the bottom left, and a cluster of shells at the bottom right. A dark green rectangular label is centered on the cover, containing the title and author information in white text.

BETWEEN PACIFIC TIDES

THIRD EDITION, REVISED

REVISIONS BY
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RICKETTS & CALVIN

FOREWORD

PERIODICALLY in the history of human observation the world of external reality has been rediscovered, reclassified, and redescribed. It is difficult for us to understand the reality of Democritus, of Aristotle, of Pliny, for they did not see what we see and yet we know them to have been careful observers. We must concede then that their universe was different from ours or that they warped it and to a certain extent created their own realities. And if they did, there is no reason to suppose that we do not. Possibly our warp is less, owing to our use of precise measuring devices. But, in immeasurables, we probably create our own world.

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. Then, the human mind being what it is, evaluation, taxonomy, arrangement, pattern making would succeed the first excited seeing. Gradually the structure would become complete, and men would go to this structure rather than to the external world until eventually something like but not identical with the earlier picture would have been built. From such architectures or patterns of knowledge, disciplines, ethics, even manners exude. The building would be complete again and no one would look beyond it—until one day a young, inquisitive, and original man might find a fissure in the pattern and look through it and find a new world. This seems to have happened again and again in the slow history of human thought and knowledge.

There is in our community an elderly painter of seascapes who knows the sea so well that he no longer goes to look at it while he paints. He dislikes intensely the work of a young painter who sets his easel on the beach and paints things his elder does not remember having seen.

Modern science, or the method of Roger Bacon, has attempted by measuring and rechecking to admit as little warp as possible, but still some warp must be there. And in many fields young, inquisitive men

are seeing new worlds. And from their seeing will emerge not only new patterns but new ethics, disciplines, and manners. The upheaval of the present world may stimulate restive minds to new speculations and evaluations. The new eyes will see, will break off new facets of reality. The excitements of the chase are already felt in the fields of biochemistry, medicine, and biology. The world is being broken down to be built up again, and eventually the sense of the new worlds will come out of the laboratory and penetrate into the smallest living techniques and habits of the whole people.

This book of Ricketts and Calvin is designed more to stir curiosity than to answer questions. It says in effect: look at the animals, this is what we seem to know about them but the knowledge is not final, and any clear eye and sharp intelligence may see something we have never seen. These things, it says, you will see, but you may see much more. This is a book for laymen, for beginners, and, as such, its main purpose is to stimulate curiosity, not to answer finally questions which are only temporarily answerable.

In the laboratories, fissures are appearing in the structure of our knowledge and many young men are peering excitedly through at a new world. There are answers to the world questions which every man must ask, in the little animals of tidepools, in their relations one to another, in their color phases, their reproducing methods. Finally, one can live in a prefabricated world, smugly and without question, or one can indulge perhaps the greatest human excitement: that of observation to speculation to hypothesis. This is a creative process, probably the highest and most satisfactory we know. If only in the process one could keep the brake of humor in operation, it would be even more satisfactory. One has always to keep in mind his own contribution to the world of reality. Aristotle built a world and we are building one. His was a true world, and ours is. And the two need not meet and quarrel. His world worked for him and for his people and ours works for us. A Greek thinker built a world that operated, and, given that man and that society, it would still work. We build a motor and it runs. It will always run if the principle involved is followed correctly, but it is not now impossible to imagine a world wherein the principle of the internal-combustion engine will become inoperative because it is no longer important.

This book then says: "There are good things to see in the tidepools and there are exciting and interesting thoughts to be generated from the seeing. Every new eye applied to the peep hole which looks out at the world may fish in some new beauty and some new pattern, and the world of the human mind must be enriched by such fishing."

JOHN STEINBECK