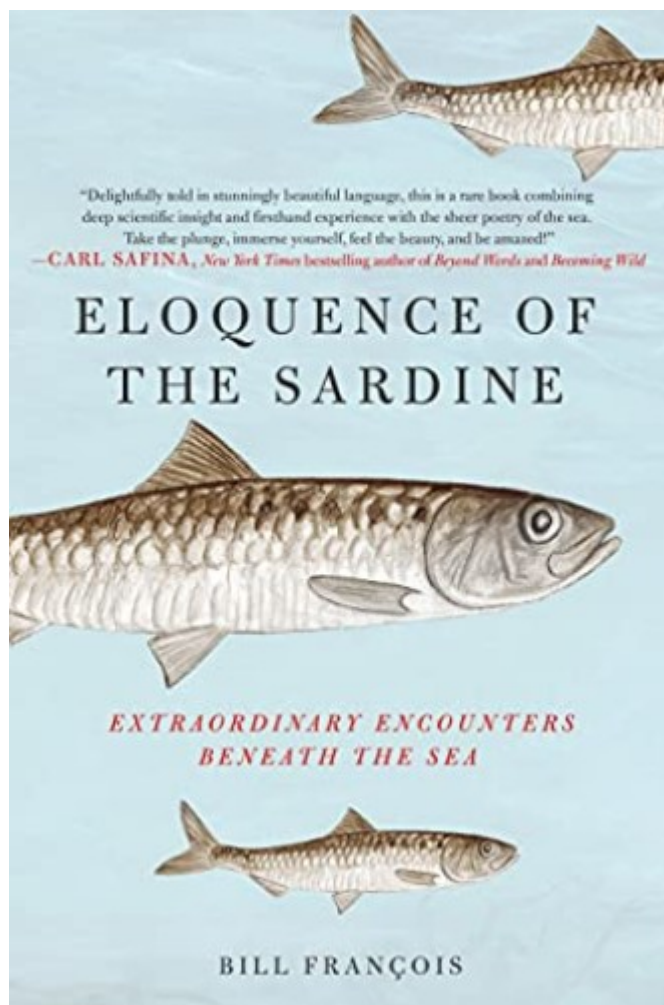


The mirror world under the sea

## **Millions of unknown species in our oceans inhabit a universe of storytelling and dreaming.**

by [Jeffrey Johnson](#) in the [April 20, 2022](#) issue

### **In Review**



### **Eloquence of the Sardine**

Extraordinary Encounters beneath the Sea

By Bill François, translated by Antony Shugaar

St. Martin's Press

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Ancient writers believed that a world under the sea mirrored the world of their senses and experience. It was thought that plants and animals of the land and the air had specific counterparts in the ocean. French naturalist and physicist Bill François writes that this “ancestral theory likely came about naturally in prehistoric times. It’s such an obvious thing, when looking at the sea, to glimpse your own reflection. To see the colors of the sky displayed in it upside down, to see fish swimming in it like birds flying through the sky.” The Roman naturalist Pliny the Elder accepted the idea of the mirror universe under the sea. Medieval scholars such as canon lawyer Gervase of Tilbury developed it as a teaching of the church. Gervase wrote that a land creature’s marine equivalent resembled it “from the head to the navel, but the body ended in a fishtail.”

One notable charm of this engaging book is the author’s unwillingness to scoff at our forebears’ ocean theories. François predicts that “one day in the future, people will laugh at the certainties of our era” as well. This magnanimous tolerance appears to spring from the author’s childhood memories, when his passion for the sea and its creatures was born.

On vacations with his parents at the Mediterranean shore, young François looked out on the kingdom of the sea with fascination and fear. Creatures uncovered by the ebbing tide fascinated him. There were “green crabs with seaweed wigs, translucent shrimps, periwinkles blowing streams of bubbles, and even the scarlet sea anemones” that his parents warned him not to touch. Fish, out of sight in the deeper water, frightened him, so he waded in the tidal pools and confined his exploration to the shallows.

One day, standing high on a rock, he saw beneath him a glittering flash near the surface of the water. Curiosity overcame fear, and he climbed down to the water’s edge. There he netted a dying sardine. When he lifted it out of the water and held it in his hands, he felt he had received a sign and a vocation from that great other world: “All at once, the deep ocean ceased to frighten me; I felt attracted to the silent secrets of the sea.”

Scientists estimate that 2.2 million species live in the oceans (not counting billions of species of bacteria). Less than 10 percent of these have been discovered and named. François sees this gap in knowledge as a field for research and a space for dreaming, storytelling, and mythmaking. Reading the English translation of his elegant book is like going on a wide-eyed underwater tour through the universe of the sea, with excursions on dry land to review evolving perceptions of the ocean and its creatures and to explore the history of human dependency on marine ecosystems.

We learn that the sea, largely silent to our ears, in fact is a riot of noises. Sound waves fill the sea. Waves pound the shore with sound that travels for miles. Polar icebergs crack; wind and rain sweep the surface of the water, blending with the growl of ship engines in the distance. There are lullabies of whales and choruses of fish voices: “drum fish croak, groupers grunt, and gurnards rumble.” Some fish make sounds like foghorns. Others can be heard from shore, tapping out rhythms on swim bladders.

We are told that anchovies eat their young and that octopuses are among the smartest creatures on the planet as well as one of the most prevalent, at home in well over half of the earth’s oceans. Killer whales off the Philippines and dolphins near Brazilian villages have been known to assist native fishermen in their work. Bluefin tuna never stop swimming—their gills work only in forward movement. Torpedoes of muscle, tuna hunt continuously, cruising the open ocean for schools of krill, anchovies, and mackerel.

At the beginning of the 20th century, the allis shad, a migratory fish related to the herring, disappeared from the river Seine in Paris. Industrial pollution and river modifications crowded out the shad and obstructed its spawning journeys. As François worked on this book, 100 years after the last reported sighting of the allis shad, he was informed by text message that a determined school of the long-absent fish had returned to the Seine. Standing at the edge of the river at night, François looked out over a school of allis shad glittering in the lights of the city, pressing upstream from the Atlantic toward ancient spawning waters. Part researcher and still part wondering child, he netted a shad. He carefully removed one of its scales so that other scientists could trace its migrations and “gazed for a long time at the shad’s golden mask and indigo reflections.” Then he gently placed it back into the Seine.