

Innocence of Coelacanth through Evolution

Ayesha Khan*

Department of Biology
Lake Forest College,
Lake Forest, Illinois 60045

Weinberg, Samantha. 2000. A fish caught in time: the search for the Coelacanth. HarperCollins, New York. xx + 220 p. \$13.95, ISBN: 0-06-093285-6 (pbk.)

A magnificent, iridescent blue fish, frozen in time for hundreds of millions of years, discovered suddenly as if a person believed to be long dead were to unexpectedly appear back in the world. When one thinks of a fossil, an animal of a long dead species comes to mind; however, would one ever think that an animal that has been fossilized still exists today? In an age where even relatively recent species are becoming extinct, would it ever cross one's mind that a species that existed even before the time of the dinosaurs still roams the deep seas? The answers to these questions are probably no. So when the Coelacanth was discovered for what it really was in 1938, it is imaginable how the world reacted, and what it meant to natural scientists around the globe.

The story of the Coelacanth began with Captain Goosen and Marjorie Courtenay-Latimer. A small woman with black hair and black eyes, Latimer had a passionate interest in nature, and it was this that drew her to a post of curator at the East London Museum. Latimer had also made many connections, such as Captain Goosen and Dr. Smith because of their similar interests in nature. Goosen would let Marjorie examine his captures for something interesting that she could display in her exhibit; Dr. Smith was a chemistry lecturer at Rhodes University and also a beginning ichthyologist. So when Captain Goosen brought in a beautiful but strange looking fish a few days before Christmas, Marjorie hurried to inform Dr. Smith so he could classify it. But first, the fish needed to be preserved. Even though it was December, the weather was hot in South Africa, and while Marjorie's thoughts were far from festive, the rest of the town was absorbed in the thoughts of the upcoming holidays. No one wanted to take on the trouble of preserving a stinky fish. Marjorie was sure that the fish was something special; it had hard scales, like heavy armor that was a distinguishing feature of ganoid fish. With the help of a taxidermist, she applied formalin to the Coelacanth and discarded its innards in order to preserve it. She was becoming desperate because Dr. Smith had not replied to her letter, and she had no idea how to deal with her discovery. Marjorie did not get her reply until after the holidays, which stated to save the fish's innards, but by that time nothing could be done to retrieve them. The discovery was twice as interesting to Dr. Smith as it was to Marjorie Latimer. He deeply regretted the loss of the valuable innards, but could not blame Marjorie. Dr. Smith confirmed what Marjorie had suspected; what lay before them was an ancient specimen, thought to have gone extinct about the same time as the dinosaurs. But here it was, a living fossil, in front of them, and its discovery an unexplainable yet almost revolutionary finding for evolution.

In 1859, in his book *On the Origin of Species*, Charles Darwin proposed his theory that man evolved from a monkey, which evolved from a reptile, which in turn evolved from a fish. In this way, man's most ancient ancestors were fish, and since the Coelacanth was one of the three major groups of fishes living in the Devonian period, it could have

been the one to evolve and walk on land. For a Coelacanth to be alive in 1938 was an extraordinary finding for evolutionary science. However, without its innards, the Coelacanth could not answer the many questions its discovery had presented. Dr. Smith became obsessed in finding another Coelacanth. He was successful in 1952 when another Coelacanth, but of a different species, was caught on the Comoros islands with the help of Eric Hunt. This led many researchers to search for it in the Comoros and Indian Ocean, two places where the Coelacanth was believed to live.

Samantha Weinberg encountered her first Coelacanth on February 5, 1992. A British writer and traveler, she was in the Comoros researching about a French mercenary, Bob Denard. A graduate of Trinity College, Cambridge, some of her previous works included *Last of the Pirates: in search of Bob Denard* and *The Moneypenny Diaries*. It was a hot day in the Comoros on the day of the encounter; Weinberg took refuge in a museum, and it was then that her eyes fell upon the exhibit containing the Coelacanth. She was shocked by its ancient appearance, as many were before her, and thought of it as a metaphor for innocence; she thought of its discovery as a metaphor for colonization. Her fascination led her to pursue the fish back to its discovery and write about the people involved.

Weinberg does a wonderful job in characterizing each and every individual involved in the discovery of the Coelacanth, by portraying their personalities, their emotions, their strengths and weaknesses as human beings, showing the reader that these were not just names associated with such a significant discovery, but actual human beings with their own stories. She writes this book for a general audience, and the writing flows like a documentary one might see on History Channel. There is suspense in the novel, such as there is in a mystery book, which I found was one of the main reasons that I kept reading. The book was easy and fun, and not too scientifically specific that I would get lost in all the detail. However, the detail provided in this book was much more descriptive and elaborate, making the book all the more appealing. I thought this book was definitely worth reading, and a lot more interesting after everything I've learned in Biology 220, Ecology and Evolution.

I understood why the discovery of the Coelacanth was so significant after learning about the history of organism lineage in Biology 220. The Coelacanth was one of the three main species 400 million years ago: the Lungfish, the Rhipidistia, and the Coelacanth, any one of which could have evolved into the Ichthyostega to be the first to walk on land. Finding out which fish evolved into the Ichthyostega would add invaluable information to the species phylogeny of prehistoric species to species now. The course also helped me understand why the Coelacanth did not evolve in all these years. Its hard, scaly armor protected it from most predators and enabled it to live in ocean depths without being at risk of getting hurt. Ocean depths are much slower to change, so the Coelacanth stayed in an environment that stayed relatively the same for millions and millions of years. The Coelacanth also had a longer lifespan than other fish, and according to life history tables, a longer lifespan leads to an older maturity age and fewer reproductions, since most of the energy is spent maintaining the growth of the organism. Therefore, it is likely that the Coelacanth survived these years without evolving, in a sense held still in time in the ocean depths.

I would recommend this book to all biology majors, and especially to those specifically interested in ecology and evolution. However, this book can be read by anyone, even those whose interests lie far from biology. It could interest people who love history, for all of the historical details and findings in the book, or someone interested in humanities, for all of its characterization and personalization of the actual people involved in the discovery. On a last note, I believe the Coelacanth truly is a symbol of innocence, living in the ocean depths quietly and slowly, incredibly far from the drastic changes that took place on land over these millions of years.

Note: Eukaryon is published by students at Lake Forest College, who are solely responsible for its content. The views expressed in Eukaryon do not necessarily reflect those of the College. Articles published within Eukaryon should not be cited in bibliographies. Material contained herein should be treated as personal communication and should be cited as such only with the consent of the author.