

## Kraken: The Curious, Exciting, and Slightly Disturbing Science of Squid

**Wendy Williams**

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The word “squid” conjures calamari, slimy tentacles, or *Twenty Thousand Leagues Under the Sea*. Wendy Williams makes us consider all of this and a lot more in *Kraken*.

The book’s name refers to gigantic sea creatures and begins by discussing myths and misconceptions about cephalopods, including squid, octopus, cuttlefish, and nautilus, the predators of the mollusk group making up a quarter of all sea animal species. Mystery has continually surrounded the giant squid especially, largely due to its preferred environment in the ocean’s depths. Victorian scientists doubted whether a giant squid could possibly survive deep sea pressures, but in 1873, when a fisherman was attacked in Newfoundland’s Conception Bay and managed to remove a nineteen-foot-long tentacle, the animal’s existence was certain. It wasn’t until 1933 that naturalist William Beebe developed a crude vehicle capable of exploring the deep ocean, and, together with fellow explorer Otis Barton, descended to 3,000 feet and witnessed a wondrous world of twinkling lights and extremely odd creatures. The bioluminescence they admired was to have promising scientific consequences decades later.

In the 1960s, Japanese scientist Osamu Shinomura published a paper on a jellyfish that emitted a green glow caused by a certain type of protein, which he identified; his discovery was promptly ignored for decades. At the same time it was learned that while the human brain differs greatly, we do share a nerve segment in common with the squid called the axon. And while our axons are quite small, the giant squid’s are actually visible to the naked eye and can be removed by hand for study. With the use of electron microscopy, and the green fluorescent protein of our jellyfish friend, neuroscientists may now inspect the activity of nerves as never before. The green fluorescent proteins attach to proteins in the nerve cells and allow observation of their activities without disturbing them. As a result of this “tagging,” researchers can identify normal nerve function, which they hope will allow them to better understand diseases like Alzheimer’s or Huntington’s. Anyone interested in such prospects will find something valuable in this book.

Williams is co-author of *Cape Wind*, an award-winning environmental title. In *Kraken*, with just the right mix of history and science, She transforms our squeamishness into respect for the complexity of these animals and their mysterious natures. Her work, through fostering an appreciation of the intelligence and adaptability of cephalopods, may ultimately help us to live better lives.

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