

Book Review: Spirals in time – The Secret Life and Curious Afterlife of Seashells by Helen Scales, 2015.
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By Bill Merilees

Seashells have fascinated mankind for millennia. For food, as curios, currency, communication ceremonial regalia, the list of their uses goes on and on. Among us who has not walked a seashore and picked up a seashell or two?

The molluscs most of us are familiar with include the squid and octopus (Cephalopods), snails and nudibranchs (Gastropods), clams (Bivalves), tusk shells (Scaphopods) and chitons (Polyplacophora). There are also a number of other 'lesser' known groups but these are quite 'obscure'. As can be imagined, due to their numbers and long fascination by man, molluscs offer a fascinating and rich source of natural history lore.

Helen Scales' "*Spirals in Time*", presents a marvellously broad compendium of shell stories. Her stated goal is to present "*some of the more offbeat, forgotten and little-known tales of how those shells have made their way into the human world.*" This she does delightfully.

Seashells in the archaeological records date back more than 100,000 years to a cave in Morocco where a number of pierced and painted marine snail shells were uncovered. These are considered the world's oldest known jewellery.

When it comes to the number of known mollusc species, today's estimate is about 85,000. How many more unknown species are actually 'out there' is speculative. Estimates as high as 200,000 species are postulated, second only to the arthropods, (insects and crabs etc.) with about 1.2 million presently named species!

Collecting seashells is a time honoured passion. The oldest collection known, unearthed in Pompeii, dates back to 79 A.D.! During the 1800's, gentlemen of leisure built large collections, often through purchase, but some organised their own expeditions. Hugh Cumming was one of the latter. As knowledge through exploration grew, the world epicentre of marine biodiversity became focussed on the Coral Triangle. Bordered roughly by Papua New Guinea, eastern Indonesia and the Philippines, this became one of Cumming's destinations. In 1846 his collection, numbering 52,789 specimens and representing 18,867 species, was offered to the British Museum for 6,000 pounds, today the equivalent of about \$1,000,000 Can. When he died in 1865 this collection totalled more than 83, 000 specimens. They now feature prominently as part of the impressive display at the Natural History Museum.

One of the species Cumming collected live, within the Coral Triangle, was the cone shell *Conus gloriamaris*, the molluscan superstar known as 'The Glory of the Sea'. Up to 13 cm (5 inches) in length and exquisitely decorated with fine golden saw tooth markings, prize specimens were highly treasured. In 1824 one was auctioned in London U.K., for 100 pounds (about \$16,000 Canadian). After 1950, when collectors finally found out how to find them, they became readily available. Today good specimens fetch about \$100 Can.

One of the long standing mysteries of seashells is how they impart the exquisite patterns to their shells. With only a rudimentary brain, hardly more than a couple of ganglia, how is this possible? Scientists still do not have the complete answer, but recent computer modelling technology offers some clues. By tweaking the equations used in their models they were able to produce stripes, spots and zigzag patterns, very similar to those found in nature. Further modelling, incorporating neural stimulation, has shown even greater promise in solving this conundrum.

As local currencies, shells, in particular the Money Cowrie, are one of the oldest and most widespread forms of hard currency. At the peak of the slave trade, fleets of slave traders were transporting as many as forty million cowries to West Africa annually. Here, along our northwest coast, dentalium or tusk shell, known as Haiqua, became a short lived currency during the fur trade era.

Scales devotes a fascinating chapter to chronicling our present understanding of the fossil record of cephalopods, from the ammonites to present day chambered nautilus and the Argonaut, aka the paper nautilus. The former, with 4 species still extant, are the last remaining members of an ancient 400 million year pedigree. The Paper Nautilus, is in a very different lineage, being related to squid & cuttlefish. Jason and his ship the Argo, of Greek mythology, even get a mention in this chapter!

Have you ever heard of sea silk? If you think this an April Fool's joke you could be forgiven. Vague references to this rare fabric go back to Roman times but it was not until a sample, excavated from the 14th Century, near Paris, provided confirmation of its existence. Perhaps it was this discovery that Jules Verne picked up on, in his classic "*Twenty Thousand Leagues Under the Sea*," when he dressed Captain Nemo and his crew in uniforms of byssus". A byssus being the collection of threads mussels use to anchor themselves to the substrate. Around the Mediterranean Sea, the Noble Pen Shell, a very large clam growing to 50 cm (20"), anchors itself into the sandy bottom of bays by long fine byssal threads. These threads, as long as 12-15 cm (5-6"), when cleaned, combed and spun become the threads for sea silk. Horatio Nelson is reported to have given his lover, Emma Hamilton, a pair of sea silk gloves, "made only in Sardinia from the beards of Mussels".

In a very abbreviated form, the above are just a few of the interesting stories covered in this book. Whether you are an armchair naturalist, or a collector of seashells, "*Spirals in Time*" is a fascinating insight into mollusc lore and a great read. You will not be disappointed!

