



'Naturalist In' Series  
**BETWEEN ATLANTIC TIDES**  
 A Review by Christopher K. Starr



**Review of: Philip Henry Gosse 1853. *A Naturalist's Rambles on the Devonsire Coast*. London: J. Van Voorst 451 pp. (Online at the Internet Archive) and Philip Henry Gosse 1865. *A Year at the Shore*. London: A. Strahan 327 pp. (Online at Project Gutenberg and the Internet Archive.) 43rd in a series on 'naturalist-in' books; see [www.ckstarr.net](http://www.ckstarr.net)**

We met Philip Henry Gosse in the previous review. He was a zoological all-rounder (much less a botanist), who studied reef and littoral animals with much detail in Jamaica alongside his main attention to terrestrial vertebrates and arthropods. It is remarkable that one naturalist should write with such knowledge and insight about both land and sea habitats and animals.

Devonshire is in the southwest corner of England just east of Cornwall, with shores on both the Bristol Channel to the north and English Channel to the south. It was quite a wild place in the 1850s, with both cliffs and sand beaches along its two coasts. Seascapes are in constant change with the tides and other motions, which Gosse never got tired of watching. The limestone shores are replete with tide pools, a happy and constantly renewing hunting ground for those interested in intertidal invertebrates. As Gosse put it, "*The tiny pools that lie in the hollows, renewed twice every day by the influx of the sea, are perfect nurseries of plants and animals of the most curious forms, and of the most interesting structure.*" In these books he gives some attention to fishes and algae, but the main foci are such creatures as echinoderms, mollusks, coelenterates (especially medusae), and polychaetes.

In true naturalist-in mode, the author is very much present in these books. The preface of *A Naturalist's Rambles* opens with "*I have endeavoured, as far as possible, to make [these pages] a mirror of the thoughts and feelings that have occupied my mind during a nine months' residence on the charming shores of North and South Devon.*" And in chapter 8, "*What a delight it is to scramble among the rough rocks that*

*gird this stern iron-bound coast, and peer into one after another of the thousand tide-pools that lie in their cavities.*" In chapter after chapter, one can feel a shiver of expectation as Gosse starts out on a day's excursion.

An outstanding feature of tide pools is the high diversity of species that can often occupy a restricted space. Gosse illustrates this in a section on "A Populous Stone" by enumerating all the species—including animals and other plants growing directly on plants—that he found on the rough surfaces of a single intertidal rock.

In Jamaica Gosse frequently took animals into captivity in order to study them up close and throughout the day. He later developed this practice to a high degree with respect to shore animals and was a pioneer in the design and use of aquaria at a time when almost no one else was making the attempt. Among other things, he reasoned that if he could keep algae, they would oxygenate the water for the animals. *A Naturalist's Rambles* includes an appendix on methods with marine aquaria.

Aquaria did much to advance Gosse's study of how marine invertebrates feed, breathe, reproduce, develop and locomote (or not). He undertook quick experiments to determine the functions of particular organs. After all, he was dealing with animals very different from anything found on land.

As noted in the previous review, Gosse's entire life in natural history was a protest against the contemporary emphasis on the study of dead museum specimens, to the neglect of the living animal. In treating *Cypraea europaea*, the only cowrie in those waters, for example, he noted that the empty shell was well known to all beach combers, while very few had seen the living animal.

A larger illustration of this point from *A Year at the Shore* is his treatment of "*that unaccountable association of diverse and unrelated creatures ... the companionship of the Hermit-crab and the beautiful Cloak-anemone.*" He noted that the sea-anemone

(*Adamsia* sp.) was never found apart from the crab (*Pagurus bernhardus*) and didn't believe the crab could even live without the sea-anemone. As they grow, both partners a new shell from time to time, but how to unify their action? His aquarium trials were consistent with the hypothesis that the crab finds a new shell, moves into it, and then moves the sea-anemone onto the new shell. The examination of dead specimens, by itself, would have contributed nothing to this problem.

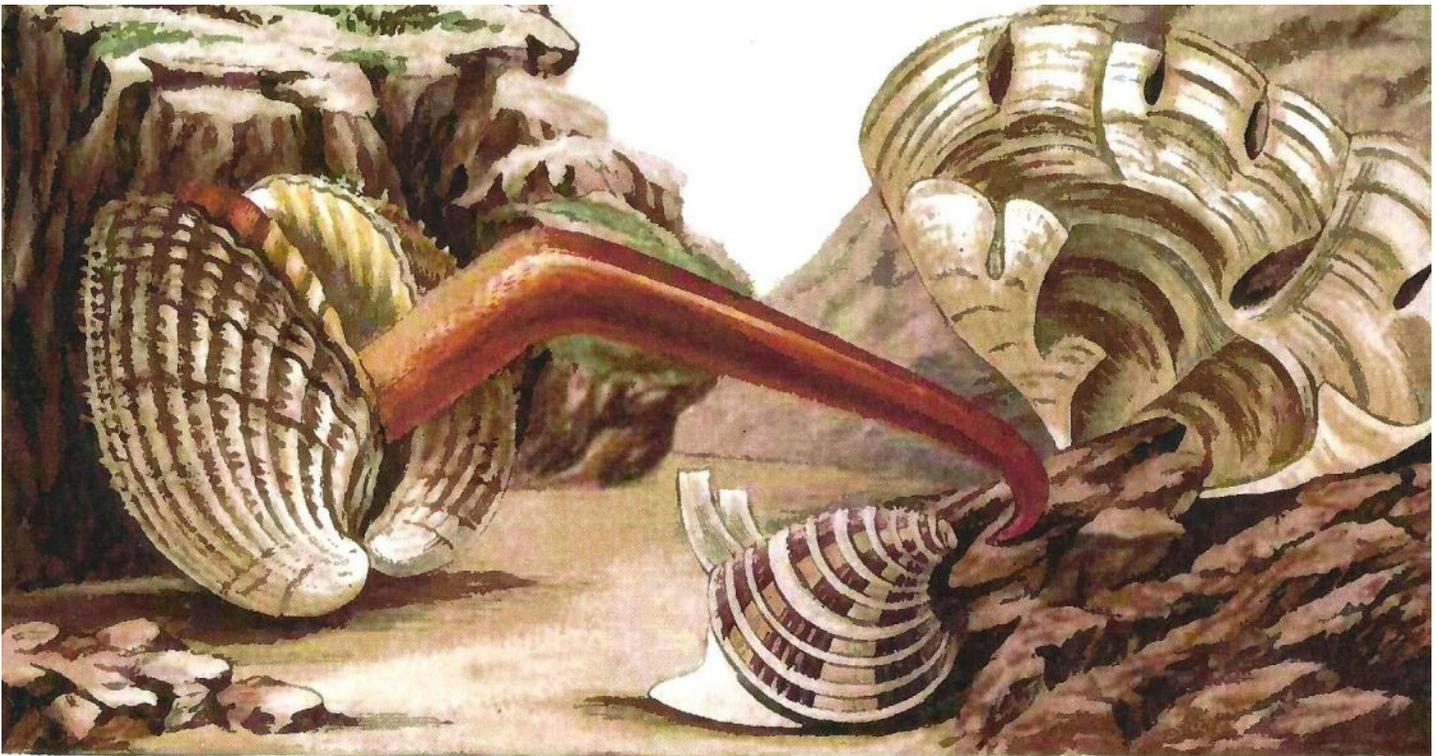
The human element is apparent only in peripheral vision in these books. Devonshire's land and villages are appreciated, although just as a backdrop to the sea. Similarly, the chapter opening "And now for a paragraph of cooking" is not at all about the villagers' customs. Rather, it is about cooking and eating a certain sea-anemone, an experiment recommended by another biologist. Gosse was not a warm and sociable man (E. Gosse

1890, 1907). After he had become well known, he almost never accepted social invitations except to what were effectively scientific events.

As in his other works, Gosse's prose is colourful (or over-the-top, depending on how you look at it). He occasionally quotes from lyric poetry when he gets really enthusiastic. This is harmless enough, I suppose.

On the other hand, he ends *A Year at the Shore* with "my solemn and deliberate protest against the infidelity with which, to a very painful extent, modern physical science is associated." Unless I misunderstand, this is a statement of allegiance to creationism and a repudiation of the new theory of evolution by natural selection. If he had started the book like that, it might have done some real damage.

A rather breath-taking feature of these books is the full-colour plates (28 in the first book, 36 in the second) drawn from living animals. Here, let me show you one:



P. H. GOSSE, del.

LEIGHTON, ERCS.

SPINOUS COCKLE,

BANDED VENUS,

## References

- Gosse, E. 1890. *The Life of Philip Henry Gosse F.R.S.* London: Kegan, Paul, Trench, Trübner 387 pp.  
 Gosse, E. 1907. *Father and Son: Biographical Reflections.* New York: Charles Scribner 355 pp.