

## From 60 years' studies of invertebrate larvae

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### Summary

During my early studies on Danish entoprocts I found a number of new solitary species, almost all associated with tubicolous annelids. After my degree, I went to the marine lab in Miami (Florida, USA), where I wanted to study how the entoproct larvae find the right host species. I found a new *Loxosomella* on sponges, and I made small pieces of various sponges and wanted to observe the larval behavior. But the larvae did not settle as described in the text-books. A large internal bud ruptured the dorsal wall of the larva and emerged as a small adult. Back in Denmark, I found still other types of life cycles, and the internal budding reminded me of polypide formation in bryozoans. This became the subject of my doctoral thesis. After that, my main interest has been marine larvae and their phylogenetic importance.

A special interest has been structure and function of larval ciliary bands. Three types can be characterized, based on scanning microscopy and high-speed cinematography. These studies have led to the 'trochaea theory' for the evolution of the protostomes (and perhaps all bilaterians).

The metamorphosis of brachiopod larvae has been a matter for discussion. Together with Dr. Minokawa, I am studying the development of the shells in the larva of *Lingula* to check the old description of Yatsu (1901). Our conclusion is that all brachiopods have a U-shaped main body axis, with a short ventral side.

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