

An Eolid Nudibranch Feeding on Bryozoa

BY

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THE MAJORITY OF SPECIES of eolid nudibranchs feed on coelenterates (GRAHAM, 1955; MILLER, 1961; THOMPSON, 1964). Most species feed on gymnoblast or calyptoblast hydroids, but the Aeolidiidae feed on sea anemones, *Fiona pinnata* (Eschscholtz, 1831) feeds mainly on the chondrophores *Velevella* and *Porpita* (but also on goose barnacles), *Glaucus atlanticus* Forster, 1777 and *Glaucilla marginata* Bergh, 1868 feed on the siphonophore *Physalia* (THOMPSON & BENNETT, 1969), and *Phestilla melanobranchia* Bergh, 1874 feeds on corals (HARRIS, 1968). A few species of eolids have other diets, but if they are to obtain nematocysts for defensive purposes they must take some coelenterates as well. *Coryphella verrucosa rufibranchialis* (Johnston, 1832) at Nahant, Massachusetts, regularly feeds on tunicates (MORSE, 1969), but it is not known if it has a normal quota of nematocysts in the cerata and hence also takes some hydroids. *Calma glaucooides* (Alder & Hancock, 1854) normally eats fish eggs and lacks a cnidosac in the cerata. It is protected entirely by glandular secretions, not by nematocysts (EVANS, 1922). *Favorinus branchialis* (Rathke, 1806) often feeds on eggs of other nudibranchs (ALDER & HANCOCK, 1845-1855; HAEFELFINGER, 1962), and it has a very small cnidosac, sometimes with very few nematocysts in it (EDMUNDS, 1966). *Trinchesia glotensis* (Alder & Hancock, 1846) is reported by GRAHAM (1955) to feed on the bryozoan *Crisia*, but this record is doubted by THOMPSON (1964). It is probably based on the record of DR. J. E. FORREST of a specimen found on *Crisia* at Plymouth (Marine Biol. Assoc., 1957), but there is no evidence that it was actually eating it. No eolids have therefore been reliably reported as feeding on bryozoans.

Between 1966 and 1970 I examined the fauna living on the bottom of fishing boats in Tema harbour, Ghana. The predominant encrusting growth was the bryozoan *Zoobotryon verticillatum* (Delle Chiaje), but *Bugula neritina* (Linnaeus) and *B. stolonifera* Ryland were also

common (determined by Miss P. L. Cook of the British Museum, Natural History). There were also tubicolous polychaetes *Branchiomma nigromaculata* (Baird) (Sabeliidae) and *Hydroides norvegica* Gunnerus (Serpulidae), tunicates, a few small sea anemones, but apparently no hydroids. The commonest eolid nudibranch was *Favorinus ghanensis* Edmunds, 1968, of which over 200 were found on one occasion. Several times *F. ghanensis* was observed feeding on the polyps of *Zoobotryon*, but it refused to eat *Bugula*. It is possible that it occasionally eats hydroids, but I could find none amongst the *Zoobotryon*, and none of the animals I serially sectioned contained nematocysts in the cnidosacs (EDMUNDS, 1968). It thus appears that this species of eolid was feeding almost entirely on the bryozoan *Zoobotryon*.

Several other species of nudibranch were also found on the *Zoobotryon*. The dorid *Polycerella* sp. was very common and was seen eating *Zoobotryon*. Over 100 specimens of the eolid *Phidiana lynceus* Bergh, 1867 and more than 60 *Trinchesia perca* (Marcus, 1958) were also found, but they were never seen to feed. It is possible that these eolids ate hydroids and kept them so closely grazed that I was unable to find any amongst the bryozoans, but it is also possible that they were feeding largely on *Zoobotryon*. Other eolids present included another species of *Trinchesia* [close to *T. tina* (Marcus, 1957)], and species of *Cratena*, *Tenellia* and *Austraeolis*.

Phidiana lynceus and *Trinchesia perca* have not hitherto been reported from the east Atlantic. It is probable that they were transported across the Atlantic on the bottoms of boats, although the boats on which they were found are small fishing boats which rarely go beyond the continental shelf. *Favorinus ghanensis* could also have been transported from elsewhere, but the 250 specimens that I have examined are very constant in external features, and in this they differ markedly from both *F. auritulus* Marcus, 1955 and *F. branchialis*. I therefore confirm my earlier opinion that they are specifically distinct from these other Atlantic species of *Favorinus*.

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SUMMARY

The eolid mollusc *Favorinus ghanensis* Edmunds is reported to feed on the bryozoan *Zoobotryon verticillatum* (Delle Chiaje) growing on boat hulls at Tema, Ghana. This is the first record of an eolid mollusc feeding on a bryozoan. Several other species of eolids have also been found on *Zoobotryon*, but they have not been seen to feed on it. Two of these are *Trinchesia perca* (Marcus) and *Phidiana lynceus* Bergh which have not hitherto been reported from the east Atlantic.

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