

Part 34

Bryozoans

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Two unidentified species of the Order Cyclostomata plus one Cheilostomata from Bahía Salinas, north Pacific of Costa Rica (Photo: Andrea Bernecker)

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Abstract Sixty-one species of bryozoans have been reported in the literature from Costa Rica and are distributed as follows: Caribbean: 13 species in 11 genera, 10 families, 1 order, and 1 class; Pacific: 49 species in 41 genera, 31 families, 3 orders, and 2 classes. One species is present in both coasts. The 61 species are in 49 genera, 36 families, and 3 orders in 2 classes. Only one site in the Caribbean (Portete) has been sampled, and from the Pacific most of the collections were carried out along the shore or by dredging in shallow waters. More studies are needed to obtain a more complete picture of the diversity and ecology of bryozoans in Costa Rica and Central America.

Introduction

The bryozoans (Phylum Bryozoa) are known as moss animals or sea mats because of their fuzzy appearance; they are also called Phylum Ectoprocta. They consist of individual zooids that are boxlike, the small calcareous chambers often less than one millimeter in length and form colonies (zoaria) of interconnected individuals (Soule *et al.* 1975; Brusca & Brusca 1990). Colonies vary greatly in size and are formed from few to thousands of zooids. They are usually encrusting over hard substrates like rocks, corals, and shells, and even over soft organisms like algae and seagrasses. The colonies growth forms vary from encrusting to erect zoaria that form lacy or fan-like colonies, some of which are extremely fragile. Encrusting colonies range from a few millimeters to as much as 50 cm² (McKinney & Jackson 1989), most being between 5–25 cm². Erect colonies could reach up to 1.5 m in diameter. Their oceanic distribution is worldwide and can be found from the intertidal zone to 6,000 m and from the tropics to the polar seas; but they are most abundant in the littoral and neritic zones down to approximately 200 m (Soule *et al.* 1975). Although not a single compilation of bryozoan taxa exists, the fossil record of bryozoans in current listing up to the Tertiary includes over 17,000 names of which 14,700 were accepted in the relatively recent review on the species diversity of the bryozoan fossil record, done by Horowitz & Pachut (2000).

Bryozoans are benthic organisms that feed on microorganisms using their ciliated feeding structures called lophophore (Brusca & Brusca 1990), and usually have to compete with other benthic organisms for space (Jackson & Hughes 1985).

The first and the most extensive lists of bryozoans from Costa Rica were published by Raymond Carroll Osburn with material collected from several localities during the Allan Hancock Pacific Expeditions (Osburn 1950, 1952, 1953; Osburn & Soule 1953). He reported 41 species collected in Costa Rica. The next paper published was by R.J. Cuffey (1971) and it is a report of a bryozoan, *Electra* cf. *angulata*, living on a sea snake, *Pelamis platurus*, collected in Golfo Dulce. Finally, William C. Banta and Renate J.M. Carson reported the presence of 24 species of Bryozoa, collected in 1964, 22 of the Class Gymnolaemata, and 2 of the Class Cyclostomata, from two localities in Costa Rica (Banta & Carson 1977). They found 13 species at the Caribbean site (Portete), 12 species from the Pacific (Playas del Coco), and 1 species, *Hippopodina feegeensis*, from both sites, but the Pacific

specimens may be a misidentification. There are no other published reports of bryozoans from Costa Rica.

We present lists of the reported bryozoans from the Caribbean coast (Species List 34.1 included on the CD) and from the Pacific Ocean (Species List 34.2 included on the CD) of Costa Rica in published accounts. Those collections should be checked for changes in names, wrong identifications, and possible new species. When a change in name is known, the new name is followed by the name used in the paper after the connotation (“in ref.”). We compiled a list of 61 species, 54 in the Order Cheilostomata, 6 in the Order Cyclostomata, and 1 in the Order Ctenostomata, in 36 families, and 49 genera; 13 species from the Caribbean and 49 from the Pacific, with one from both coasts, *H. feegeensis*, which might be a misidentification on the Pacific. In Panama, however, the most recent studies, which included only encrusting species of the Order Cheilostomata, 50 species were reported for the Caribbean and 37 species for the Pacific (Hughes & Jackson 1992; Jackson & Herrera-Cubilla 2000).

Few samples have been collected from the Caribbean, only from Portete, and from the Pacific from a few localities. Most of the Pacific collections were done by dredging in shallow waters or from the shore (see papers by Osburn). Of the rest of the Central American countries, little has been published with the exception of Panama (Hughes & Jackson 1992; Jackson & Herrera-Cubilla 2000) and Belize (Winston 1984). More research is needed on this group not only in Costa Rica but also in the rest of Central America.

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Collections

There is a small collection of Costa Rican bryozoans at the Museo de Zoología of the Universidad de Costa Rica.

Recommendations

More work is needed on both coasts of Costa Rica and in the other Central American countries on the species richness, distribution, and ecology of the bryozoans.

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