



Phylum
BRYOZOA

*Bryozoans, moss animals,
lace-corals, sea mats*

Dennis Gordon



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The **Bryozoa** (Greek *bryon* moss, *zoon*, animal) is a group of animals that can look like hydroids, turfing seaweeds, or small corals, which means that they are frequently mistaken for other organisms and scarcely ever recognised for what they are. They are colonies of minute individuals (zooids), mostly less than 1 mm long, whose feeding tentacles strain the water for food particles. Colonies can be encrusting (sea mats), bushy (moss animals), or coral-like. Some of them form hard mesh-like fronds and look like solid lace (lace corals). On the continental shelf, bryozoans can dominate some parts of the seafloor, as in Tasman Bay, Foveaux Strait, or off Otago Peninsula, where they form habitat for Bluff oysters or juveniles of commercial fish. Their fossil remains are common in limestones at Waitomo, Punakaiki, and Oamaru. There are about 950 species of marine bryozoans in New Zealand waters (out of nearly 6000 worldwide).

Two classes of Bryozoa, representing three orders, are found in the sea.

Class Stenolaemata

Order Cyclostomata

This is an ancient group of bryozoans that survives to the present day. Colonies are mostly small, but endemic *Cinctipora elegans* in Foveaux strait and on the Otago shelf forms twiggy coral-like colonies up to 30 cm high. The zooids in cyclostome colonies are somewhat tubular in shape and the anterior end where the tentacles emerge is not closed (between feeding sessions) by a lid-like operculum. When reproducing, eggs and larvae are incubated in one or a few brood chambers that serve the whole colony. There are 120 species in New Zealand waters (c. 740 worldwide). Fairly uncommon in the deep sea.

Class Gymnolaemata

Order Ctenostomata

Another ancient order of bryozoans. Unlike other marine bryozoans, all ctenostomes are uncalcified, hence their colonies are soft. A few native species are encrusting; most are bushy. Some shallow-water species form large "fluffy" colonies of abundant delicate branches. Their zooids are like tiny transparent sausages disposed along hollow stems that resemble thin noodles. As in cyclostomes, individuals have no operculum. There are 48 species in New Zealand waters (c. 310 worldwide). Rare and tiny in the deep sea.

Order Cheilostomata

This is the geologically youngest bryozoan order, dating from the latest Jurassic. All marine species are calcified and colonies range from nearly microscopic to well over 30 cm high and across, depending on the species. The zooids in cheilostome colonies are somewhat box-like, with a lid-like closing apparatus (operculum) at one end. There are 782 species in New Zealand waters (c. 4950 worldwide). Common in the deep sea.

Phylum Bryozoa
Class Gymnolaemata
Order Cheilostomata (lace corals)
Family

***Hippellozoon novaezelandiae* (Erect cheilostome bryozoan) (HNO)**



Distinguishing features: Hard coral-like structures with tiny pores around or along the branches. (The pores are the openings for microscopic feeding tentacles to emerge.) Distinguishing features tend to be microscopic; in lengthways sections of branches, the zooids appear as relatively short and variably box-like.

Colour: Varies according to species.

Size: From 5 to 30 cm high depending on the species.

Distribution: Widespread in New Zealand waters.

Depth: 0 to 5000 m.

Similar species:

References: Gordon, D.P. (1986). The marine fauna of New Zealand: Bryozoa: Gymnolaemata (Ctenostomata and Cheilostomata Anasca) from the western South Island continental shelf and slope. *Memoirs. New Zealand Oceanographic Institute* 95: 1–121.

Gordon, D.P. (1987). The deep-sea Bryozoa of the New Zealand region. Pp 97-104 *In:* Ross, J.R.P. (ed.) *Bryozoa: Present and Past*. Western Washington University, Bellingham. 333 p.

Phylum Bryozoa
Class Stenolaemata
Order Cyclostomata
Family

(Erect cyclostome bryozoans) (ECB)



Distinguishing features: Hard coral-like structures with tiny pores around or along the branches. (The pores are the openings for microscopic feeding tentacles to emerge.) Distinguishing features tend to be microscopic; in lengthways sections of branches, the zooids appear as long narrow tubes. Left image *Cinctipora elegans*, right image *Tetrocycloecia neozelanica*.

Colour: Varies according to species.

Size: From 5 to 30 cm. This is a height measurement, and size depends on the species.

Distribution: Widespread in New Zealand region.

Depth: 12 to 1156 m for relatively large colonies. Records over 700 m may represent dead colonies transported from shallower depths.

Similar species: Cheilostome bryozoans with a similar colony form.

References: Taylor, P.D.; Gordon, D.P.; Batson, P.B. (2004). Bathymetric distributions of modern populations of some common Cenozoic Bryozoa from New Zealand, and paleodepth estimation. *New Zealand Journal of Geology and Geophysics* 47: 57–69.