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COMPENDIUM of marine species from New Caledonia



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Shallow water brachiopod species of New Caledonia

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Brachiopods are entirely marine, sessile, benthic invertebrates with soft body enclosed in a shell consisting of two valves which differ in size, shape, and sometimes even in ornamentation and colour. Most brachiopods have calcareous shell, except lingulids which have organophosphatic shell. They have a very long and impressive geological history but today they are regarded as a minor phylum and are reduced to about 110 genera. Nevertheless, brachiopods are widely distributed, being present in all of the world's oceans and they can locally dominate the benthic marine communities. Their bathymetric range is very wide, from the intertidal zone to depths of about 6000 meters, however, most commonly they occur from 100 to 500 m.

Among the 30 brachiopod species occurring in the New Caledonia region (d'Hondt 1987; Emig 1988; Laurin 1997), only four of them have been found in the shallow water less than 100 meters deep. The shallow water brachiopod fauna consists of 4 species belonging to 3 genera, in 3 families, 3 orders (Lingulida, Terebratulida and Thecideida) and 2 subphyla (Linguliformea and Rhynchonelliformea). Two *Lingula* species, namely *L. anatina* Lamarck and *L. adamsi* Dall, are recognised in New Caledonia. Lingulides are the only brachiopods which adopted an infaunal habit in soft sediments. Those two species are widely distributed in the West Pacific.

As in many West Pacific islands until Japan, the lingulides are cooked and eaten in New Caledonia where they are named "moules à queue" (more details in the local newspaper of Nouméa "Les Nouvelles" 25/10/1983 and 4/11/1983 (C. Emig, personal communication).

Frenulina sanguinolenta (Gmelin, 1791) is the only terebratulide found in shallow waters. This species is easily recognisable because of its red colour pattern. It lives attached by a pedicle to the hard substrate. *F. sanguinolenta* is reported from many localities in the Pacific Ocean, from Japan and Australia to Hawaii and French Polynesia, as well as in the Indian Ocean.

The fourth brachiopod species known from the shallow water is a thecideid, *Thecidellina maxilla* (Hedley). The thecideid brachiopods are small cementing forms which live in low to mid-latitudes. They inhabit commonly light-poor, shallow water environments, such as caves and crevices in coral reefs. *T. maxilla* is widespread in the Pacific Ocean, from Tuvalu to the Tuamotu Islands, and as far south as the Kermadec Islands.

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List of Brachiopoda of New Caledonia (0-100 m)

LINGULIDAE Menke, 1828

Lingula anatina Lamarck, 1801

Lingula adamsi Dall, 1873

FRENULINIDAE Hatai, 1938

Frenulina sanguinolenta (Gmelin, 1791)

THECIDELLINIDAE Elliott, 1958

Thecidellina maxilla (Hedley, 1899)