



The Sponge *Terpios fugax* in the Baltic Sea

by

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In the course of investigations in May, 1961 on the bottom fauna in the region of Bornholm Gate (B<sub>6</sub> Figure) there was noted the occurrence of the sponge *Terpios fugax* Duchassaing et Michelotti. Some specimens of this species were found on the shells of *Astarte borealis* and on the "branches" of the hydrozoan *Laomedea loveni*. The specimens were obtained at a depth of 44 m (55°17'N, 14°32'W) in water of salinity 9.9‰ and temperature 2.6°C. The size of the specimens ranged from 0.5 to 1.2 cm with a thickness of 0.4 cm. It should be stressed here that there is little chance of the sponge surviving where the salinity is below 9‰, but it must be remembered that there are strong water movements in this region, in which the salinity fluctuates greatly - from 9‰ to 22‰. On the other hand, strong influxes of sea water of higher salinity are the cause of many new species occurring more and more often in the Baltic Sea. On comparing our list of species with the data for the Baltic Sea prepared by Möbius in 1873 and the data for the period 1900-1930 by J. Reibisch (1902), G. Thulin (1922) and A. Hagmeier (1926, 1930), we find that many new species were noted for the first time in this region in 1961 (Table 1).

The fact that this list includes largely strictly benthonic species, among which there is also a number of attached species, suggests that these organisms are a permanent component or that they settle in this region for a longer period of time, compared with the plankton, which is carried in with the actual influx from the North Sea. The presence of adult specimens of the new benthonic species shows that in this region there are factors sufficiently favourable for their survival.

Such a definite increase in the number of new species may be attributed in the first place to increased water exchange in consequence of which a gradual increase in salinity in this region has been noted in recent years. An example of the great fluctuation in salinity, which has occurred during a period of some weeks was as follows:-

|               |              |                |   |       |
|---------------|--------------|----------------|---|-------|
| February 1965 | at the point | A <sub>1</sub> | - | 17.6‰ |
| March 1965    | " " "        | A <sub>1</sub> | - | 8.3‰  |
| February 1965 | " " "        | B <sub>6</sub> | - | 9.1‰  |
| March 1965    | " " "        | B <sub>6</sub> | - | 13.2‰ |

From these data we see that along a very short section (A<sub>1</sub> - B<sub>6</sub>) the salinity fluctuated over a range of nearly 10‰, which undoubtedly is of great importance for the organisms living there. Although these animals certainly are euryhaline bottom fauna species, such a community may be compared to littoral fauna, since, in both, the organisms had to have the necessary regulatory mechanism permitting them to maintain proper osmotic pressures over a considerable period of time.

It thus appears that the region of Bornholm Gate is a particularly interesting area of the Baltic Sea.

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Table 1. List of more frequently occurring species of bottom fauna in the region of Bornholm Gate.

|            |                                                | 1871 - 1927 | 1961 |
|------------|------------------------------------------------|-------------|------|
| Porifera   | <u>Terpios fugax</u> Duchassaing et Michelotti | -           | +    |
| Hydrozoa   | <u>Laomedea loveni</u> (Alman)                 | +           | +    |
| Anthozoa   | <u>Thecata</u> sp.                             | +           | +    |
| Nemertini  | not identified                                 | +           | +    |
| Priapulida | <u>Halicryptus spinulosus</u> Siebold          | +           | +    |
| Polycheta  | <u>Pholoe minuta</u> Fabricius                 | -           | +    |
|            | <u>Antinöella sarsi</u> (Kinberg)              | +           | +    |
|            | <u>Nephtys ciliata</u> Müller                  | +           | +    |
|            | <u>Scoloplos armiger</u> (Müller)              | +           | +    |
|            | <u>Aricidea suecica</u> Eliason                | -           | +    |
|            | <u>Pygospio elegans</u> Claparede              | +           | +    |
|            | <u>Terebellides strömi</u> Sars                | +           | +    |
|            | <u>Terebellomorpha</u> sp.                     | +           | +    |
| Crustacea  | <u>Diastylis rathkei</u> (Kröyer)              | +           | +    |
|            | <u>Mesidothea entomon</u> (Linné)              | +           | +    |
|            | <u>Pontoporeia affinis</u> Lindström           | +           | +    |
|            | <u>Phoxocephalus holbolli</u> (Kröyer)         | -           | +    |
|            | <u>Pontoporeia femorata</u> Kröyer             | +           | +    |
|            | <u>Gammarellus homari</u> (Fabricius)          | -           | +    |
| Pantopoda  | <u>Nymphon grossipens</u> (Fabricius)          | +           | +    |
| Gastropoda | <u>Hydrobia ulvae</u> (Pennant)                | +           | +    |
| Bivalvia   | <u>Macoma baltica</u> Linné                    | +           | +    |
| Bryozoa    | <u>Callopora aurita</u> Hinck                  | -           | +    |
|            | <u>Electra crusculeta</u> (Pallas)             | +           | +    |
|            | <u>Alcyonidium polyoum</u> (Hassal)            | -           | +    |
| Asciacea   | <u>Dendrodoa grossularia</u> van Beneden       | +           | +    |

SALINITY IN THE REGION OF BORNHOLM GATE IN MAY, 1961.

