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NEW RECORDS OF MARINE TURBELLARIA FROM NORWAY

by

G. VAN DER VELDE

Laboratory of Aquatic Ecology, Catholic University of Nijmegen, The Netherlands

INTRODUCTION

During an excursion to Norway organized by the Department of Systematic Zoology of the Rijksuniversiteit of Leiden in August 1973, I had the opportunity to make some observations on Turbellarians of salt-marshes and rocky shores of the Trondheimsfjord ($63^{\circ} 37' N 9^{\circ} 43' E$) and the Stjörnfjord ($63^{\circ} 47' N 10^{\circ} 7' E$), a fjord connected with the Trondheimsfjord.

MATERIAL AND METHODS

The greater triclad flatworms were mainly collected by turning stones on the salt-marshes and rocky shores. On the salt-marshes soil samples were taken. Each sample covered an area of 25 cm^2 and was 3 cm thick. For obtaining the animals the soil samples were put in a jar filled with sea water.

Lack of oxygen, due to decay of the vegetable matter, and the light of a lamp make the animals creep or swim to the water surface. They can then be captured by means of a pipette.

LIST OF SPECIES

Neorhabdozoela

Placorhynchus octaculeatus octaculeatus Karling, 1931

In a salt-marsh near Selva on the Trondheimsfjord one specimen was found together with *Uteriporus vulgaris*, *Proxenetes deltoides* and *P. unidentatus* in a *Juncetum gerardii* vegetation (sensu Beeftink, 1965), with the phanerogams *Juncus gerardii*, *Glaux maritima*, *Triglochin maritima* and

Scirpus rufus. The algal mat covered 100% and consisted mainly of *Vaucheria coronata*, *Vaucheria intermedia*, and many blue-green and green algae.

The species has a wide distribution along the European coasts (Karling, 1963). It was recorded previously from Norway (Tromsø) by Schmidt (1972).

Acrorhynchides robustus (Karling, 1931)

Two specimens of this species, together with *Monocelis fusca*, were found on a tidal flat close to the salt-marsh near Selva without a phanerogam vegetation. The algal mat consisted of *Percursaria percursa*, with some *Rhizoclonium riparium* and *Microcoleus lyngbyaceus*.

The species was known from Tromsø (Schmidt, 1972). It has been recorded from several localities along the coasts of northwestern Europe (Karling, 1963).

Vejdovskya halileimonia Ax, 1960

One specimen was found, together with *Proxenetes deltoides*, *Uteriporus vulgaris*, *Coelogyropora* spec. and *Vejdovskya pellucida*, on the salt-marsh of Selva in the Juncetum gerardii. The vegetation consisted of the phanerogams *Juncus gerardii*, *Aster tripolium* and *Glaux maritima*, the alga *Vaucheria* spec. and blue-green algae.

Six specimens were found in samples from a salt-marsh in the Stjörn-fjord. Three soil samples were taken from the Juncetum gerardii. This association consisted of the phanerogams *Juncus gerardii*, *Festuca rubra*, *Agrostis stolonifera*, *Glaux maritima* and *Puccinellia maritima*. The algal mat was dominated by *Vaucheria coronata*. The number of specimens found in these samples was one, four and one.

This is the first record of the species from Norway. The species is known from Germany (Ax, 1960), The Netherlands (Den Hartog, 1966 a and b), England (Den Hartog, 1974) and France (Den Hartog, 1966 b). It is a typical salt-marsh species.

Vejdovskya pellucida (M. Schultze, 1851)

One specimen was found on the salt-marsh of Selva. The ecological description of the habitat is given with the previous species.

Pennate diatoms were found in the intestine.

Schmidt (1972) recorded the species from the sandy beach of Tromsø. It furthermore is known from the coast of Europe from Norway to the Black Sea (Luther, 1962).

Proxenetes deltoides Den Hartog, 1965

Eight specimens were found on the border of the salt-marsh near Selva, where the *Juncetum gerardii* vegetation begins, in a dense algal mat of *Vaucheria*. The specimens occurred together with *Uteriporus vulgaris*, *Vejdovskya halileimonia* (see also under that heading), *Vejdovskya pellucida* and *Coelogygnopora* spec. One specimen was found in the *Juncetum gerardii* together with *Uteriporus vulgaris*, *Proxenetes unidentatus* and *Placorhynchus o. octaculeatus* (see also under that heading).

Originally the species was thought to be characteristic of the *Puccinellietum maritimae* (Den Hartog, 1965). However, the species has also been found frequently on sand- and mud-flats and in isolated brackish-water ponds so that it cannot be considered a typical salt-marsh species (Den Hartog, 1974). In the intestine of one specimen I found a nematode.

The species has been recorded previously from Norway by Schmidt (1972), viz. from Smaasletta near Tromsø. The species is also known from the coasts of The Netherlands, England, Scotland and Germany (Den Hartog, 1965), the German North Sea coast and the French Atlantic coast (Ax, 1971), Denmark (Straarup, 1970) and the Swedish west coast (Karling, 1974).

The spine apparatus in the bursal canal is a somewhat curved comb with 6-10 teeth; it is longer than the cuticular copulatory organ (Den Hartog, 1965). On the salt-marshes in the Dutch Wadden Sea and the Delta area, I found, occasionally, specimens with a spine apparatus with 5 teeth. The comb in those specimens proved to be somewhat smaller than the cuticular copulatory organ. In the Norwegian specimens so far examined, I counted in five specimens 8 teeth and in one specimen 7.

Proxenetes unidentatus Den Hartog, 1965

Two specimens were found in the salt-marsh of Selva, together with *Uteriporus vulgaris*, *Proxenetes deltoides* and *Placorhynchus o. octaculeatus* (see also under that heading) in a vegetation dominated by *Juncus gerardii*. In accordance with the findings by Den Hartog (1965) the present material was obtained in the lower situated parts of this vegetation.

This species was previously recorded from Norway by Karling (1974) (Raunefjord, Lönningshamma and Kviturdvikspollen from salt-marshes). The species has also been recorded from the coasts of England, The Netherlands and Finland (south coast) (Den Hartog, 1965) and the German North Sea coast (Ax, 1971).

In one of the two specimens examined the length of the cuticular copulatory organ was 45 μ , the long spine on the basal plate 11 μ . The basal plate

was 24 μ long and 20 μ high. The measurements of these structures in the other animal examined were more in accordance with the measurements given by Den Hartog (1965) and Ax (1971). The length of the copulatory organ was 40 μ (Den Hartog gave 38-40 μ ; Ax, 38 μ), the basal plate of the spine apparatus at the distal end of the bursal canal was 32 μ long and 22 μ high (Den Hartog: 30-40 μ long, ca. 20 μ high). The length of the long spine on the basal plate was not measured in that specimen (Den Hartog: 16 μ ; Ax : 15 μ).

Macrostomida

Macrostomum balticum Luther, 1947

One specimen was found on the edge of the salt-marsh near Selva. Phanerogams were absent in the vegetation, which was dominated by the algae *Vaucheria coronata* and *Rhizoclonium riparium*.

The species has a wide distribution, from the Mediterranean to the coast of Finland and Sweden, but it had so far not been recorded from Norway (Luther, 1960; Karling, 1974).

Proseriata

Coelogynopora spec.

One immature specimen was found in the salt-marsh near Selva (see *Vejdovskya halileimonia*).

Monocelis fusca Oersted, 1843

Fourteen specimens were found in the salt-marsh near Selva, together with *Acrorhynchides robustus* (see also under that heading). Some of them belong to the form having the long penis stylet; others are immature and ascribed to this species because of their brown colour (Den Hartog, 1964).

The species has been recorded from Norway (Tromsø) by Schmidt (1972) and is known to be widely distributed along many of the coasts of Europe, such as those of the White Sea, the North Sea, the Mediterranean and the Black Sea. It also occurs along the North American east coast (Den Hartog, 1964).

Tricladida

Procerodes littoralis (Ström, 1768)

Many specimens were found on rocky shores, the typical habitat of the species, near the Biological Station Hambaara (University of Trondheim)

at Selva. They occurred in small fresh-water streams flowing onto and over the rocks in the littoral zone of the fjord. This habitat is known as the "shock-habitat" (Den Hartog, 1968) and is characterized by an algal vegetation of *Enteromorpha* species, the *Enteromorpheto prolifero-intestinalis*. When disturbed, the animals move away rapidly. Their movements resemble those of a leech.

In Norway, the species was recorded from Bergen (Luther, 1969) and Tromsø (Schmidt, 1972). It ranges along the Atlantic coast of Europe from Murmansk to Brittany (France) and is also known from the north-eastern coast of America (Den Hartog, 1968).

***Uteriporus vulgaris* Bergendal, 1890**

Many specimens were found under stones and in *Vaucheria*-vegetations on the salt-marshes of Selva and the Stjörnfjord (see also *Placorhynchus* and *Proxenetes deltoides*).

The species has been recorded from Norway by Schmidt (1972) (Tromsø and Kistrand Prosanger-fjord) and others. The species is distributed along the coasts of Europe from northern Norway to northern France (Boulogne sur Mer) and also occurs on the east coast of North America (Den Hartog, 1968; Tomkiewicz & Ball, 1973).

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