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Four marine mollusc species new to the Dutch recent fauna

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The recent occurrence of four species in the Dutch part of the North Sea is reported. The gastropods *Vitreolina antiflexa* (Eulimidae) and *Ondina divisa* (Pyramidellidae) are entirely new to the Dutch malacofauna. For the bivalves Semierycina nitida (Erycinidae) and Altenaeum dawsoni (Condylocardiidae) only records of empty shells are known.

Key words: *Vitreolina, Ondina, Semierycina, Altenaeum,* biogeography, Netherlands.

INTRODUCTION

In the framework of the monitoring programme BIOMON (Biological Monitoring of marine waters, a research programme initiated and financed by the Dutch National Institute for Coastal and Marine Management, 'RIKZ') the benthic fauna in the Dutch part of the North Sea has been sampled yearly from 1991 onwards. In the period 1991-1994 a limited number of 25 stations was monitored on the basis of 5 boxcores (ø 31 cm, depth (≥15 cm) per station each year. From 1995 the sampling effort was reduced to 1 boxcore per station, but the number of stations was increased to 100. The stations are distributed more or less at random over the Dutch sector. The original data collected during this programme are given in reports by Duineveld (1992), Duineveld & Belgers (1993, 1994), Holtmann et al. (1995, 1996, 1997,1998, 1999) and Daan & Mulder (2000).

During the monitoring programme we found living specimens of four species which, to our knowledge, are new to the Dutch recent malacofauna. All were found at one or more stations in the Oyster Ground and the Frisian Front, at depths of 30-52 m (fig. 1). We summarize here their taxonomy and data on their distribution and feeding habits.

SYSTEMATIC PART

Eulimidae

Vitreolina antiflexa Monterosato, 1884 (fig. 2)

Vitreolina antiflexa; Van Aartsen, 2000: 119.

Material. – The species was found at the following stations: OYS-06, 55°18'N 4°23'E, 37 m, silt fraction 22%, 1997 (3 x); OYS-13, 54045'N 3°30'E, 44 m, silt fraction 10%, 1997 (1 x); OYS-16, 54°39'N 5°03'E, 45 m, silt fraction 7%, 1997 (1 x); OYS-17, 54°00'N 3°25'E, 43 m, silt fraction 4%, 1997 (1 x); OYS-18, 54°11'N 5°54'E, 36 m, silt fraction 3%, 1997 (1 x); OYS-20, 54°05'N 2°52'E, 52 m, silt fraction 16%, 1998 (1 x); OYS-23, 54°49'N 3°22'E, 41 m, silt fraction 5%, 1997 (3 x); OYS-25, 54°39'N 4°32'E, 49 m, silt fraction 23%, 1998 (1 x); OYS-27, 54°030'N 5000'E, 43 m, silt fraction 2%, 1995 (1 x); OYS-29, 54°30'N 3°00'E, 36 m, silt fracti-

on 6%, 1997 (1 x); OYS-33, 54°16'N 4°03'E, 48 m, silt fraction 14%, 1997 (1 x); OYS-39, 54°30'N 4°00'E, 45 m, silt fraction 9%, 1993 (1 x), 1994 (1 x); OYS-40, 55°00'N 5°000'E, 31 m, silt fraction ? %, 1994 (1 x), 1995 (1 x), 1997 (1 x); OYS-41, 54°51'N 3°18'E, 38 m, silt fraction 4%, 1991 (2 x), 1992 (3 x), 1993 (16 x), 1994 (19 x), 1997 (4 x); OYS-42; 54°07'N 6°13'E; 30 m; silt fraction 1%; 1997 (2 x).

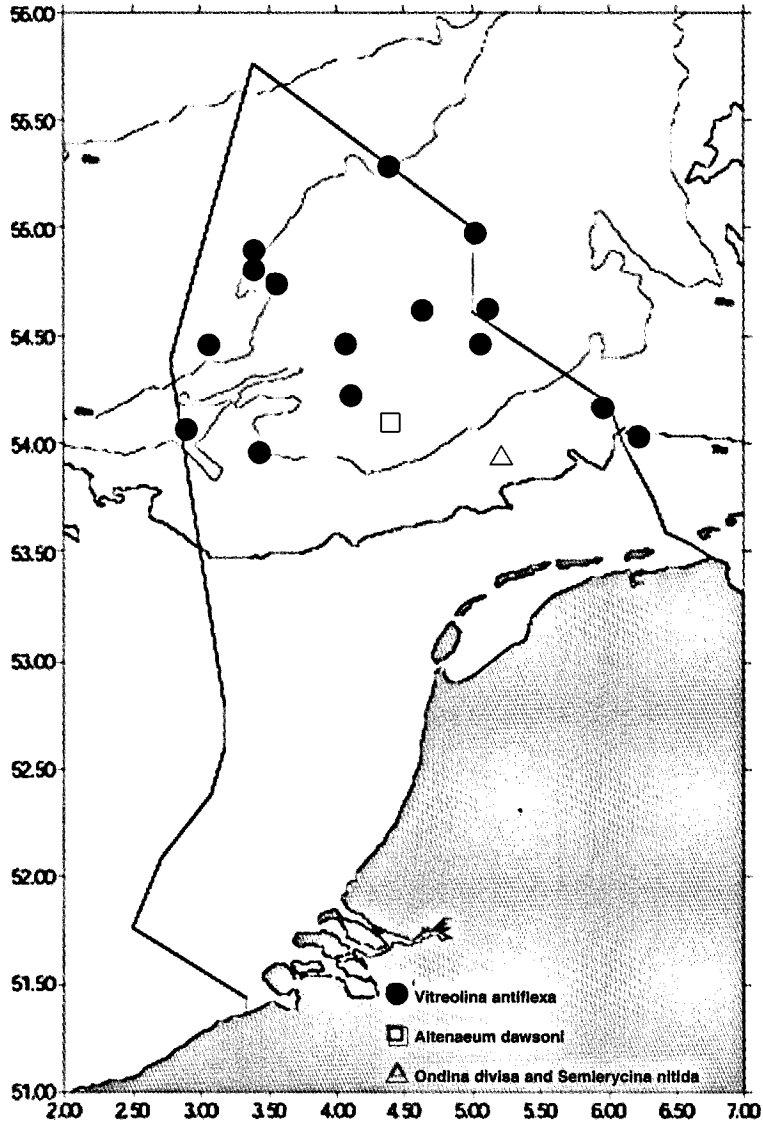


Fig. 1. Positions of the stations where the four species have been found. Solid line: border of the Dutch sector of the North Sea.

Distribution. – The species is known from scattered locations in the Mediterranean, northern Spain, SW. France, Ireland and the British Isles, particularly the Hebrides and Shetlands (Cachia et al., 1996: 162; Van der Linden, 2000: 69; Van Aartsen, 2000: 119). We have no confirmation that the species has been found in the southern North Sea before.

Biology. – We found *Vitreolina antiflexa* at one or two stations in most years, except for 1997 when the species was recorded at 11 of the 42 stations that were sampled in the Oyster Ground. It therefore does not seem to be extremely rare in that area, and may sometimes even be rather common.

Eulimidae are known to live as parasites on echinoderms. According to Warén (1983: 19) the genus *Vitreolina* parasitizes both echinoids and ophiuroids. The host of *V. antiflexa* is not known, but a closely related species, *V. philippi* (De Rayneval, Vanden Hecke & Ponzi, 1854) is found on the echinoid *Paracentrotus lividus* (Lamarck, 1816)(Cachia et al., 1996) and on *Amphiura filiformis* O.F. Müller, 1776 and *Ophiura* spp. (Warén, 1983: 84). Both *A. filiformis* and *Ophiura albida* Forbes, 1839, are very common species in the area. Finds of *V. antiflexa* coincided in 20 out of 22 cases with the presence at the same station of *A. filiformis* and in 14 cases with the presence of *O. albida*.

Notes. – Since 1993, when we found this species for the first time, we have always identified it erroneously as *Melanella (Eulima)* alba Da Costa, 1778. During editing of the manuscript a specimen was shown to Dr. J.J. van Aartsen who corrected our identification. Most of the shells are slightly curved, but a few are almost straight. One specimen is slightly S-shaped, but otherwise the same. The shells are glassy transparent in living specimens and milky white in dead ones. The material is still present in the Netherlands Institute for Sea Research, Texel, but in 25% of the animals the shell is largely dissolved, due to initial preservation in formalin.

For the nomenclature, see Van Aartsen (2000).

Pyramidellidae

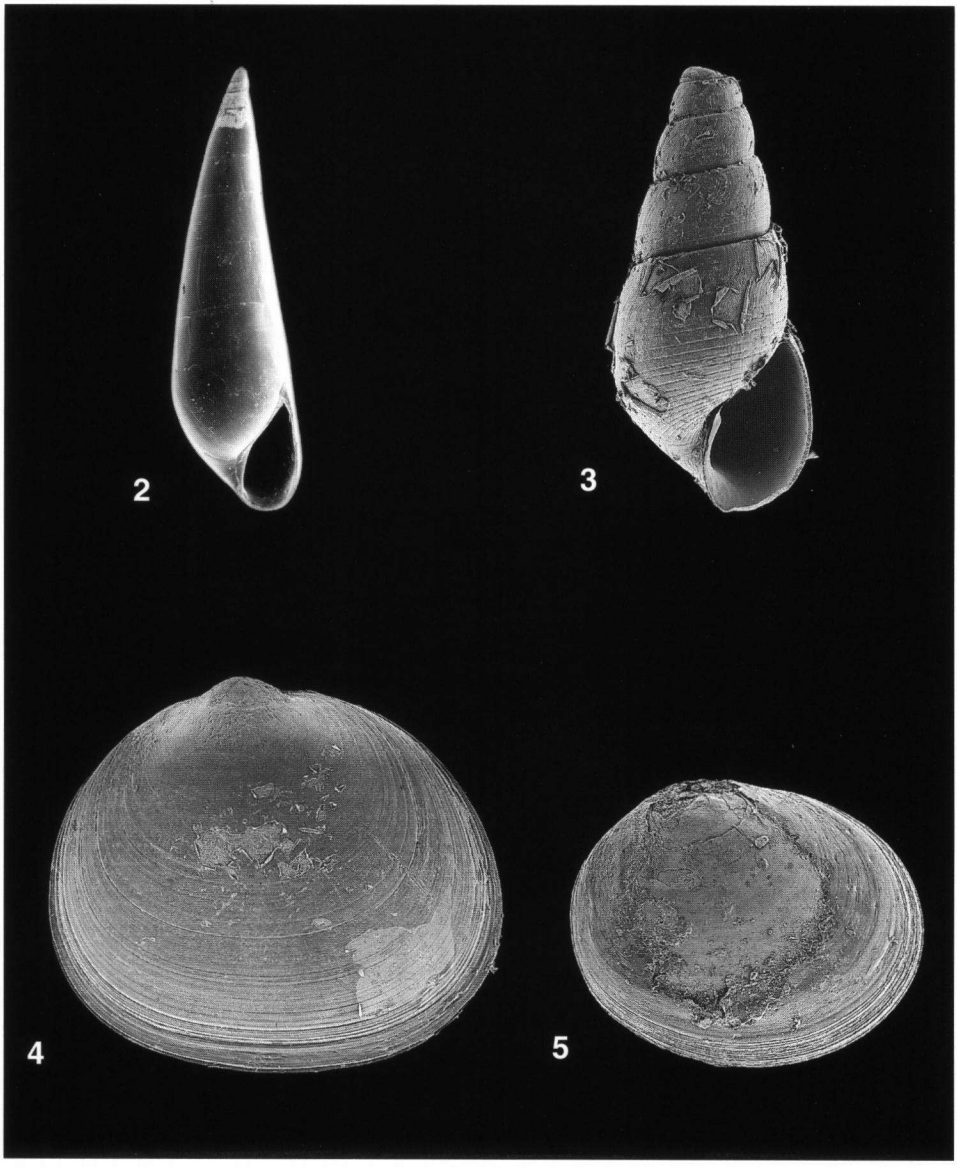
Ondina divisa (J. Adams, 1797) (fig. 3)

Evalea divisa; Graham, 1988: 566, fig. 244.
Ondina divisa; Warén, 1991: 103, figs 30C, 36E-F, 39D.

Material. – The species was found at station OYS-11, 53°56'N 5°10'E, 40 m, silt fraction 24%, 2000 (1 specimen, preserved in the collection of the first author). The identification was based on Van Aartsen, 1987: fig. 48), Graham (1988: 566, fig. 244) and (Warén, 1991: 103, fig.39D).

Distribution. – The species occurs from northern Norway and Iceland south to the Bay of Biscay (Warén, 1991: 103). According to Graham (1988: 566) it has been recorded from around the British Isles except for the southern North Sea. Finds are made on sandy or gravelly mud from 18 to 200 m deep, but most records are from dead shells and it is never common. For the North Sea, Seaward (1982: fig. 305; 1990: 46) mentions one record (live) near Newcastle from before 1950 and four (also live) from between Scotland and Norway after 1950. Our specimen seems to be the first found in the Dutch sector.

Biology. – As far as known, pyramidellids are free living ectoparasites. The host can be a bivalve, tube worm, gastropod or sipunculid worm. Although the pyramidellid host is not as obligate as initially thought, most species have a clear preference for a single



Figs 2-5. Four marine mollusc species new to the Dutch recent fauna: 2, *Vitreolina antiflexa*, empty shell, 3.0 mm high, found in 2000, station OYS-41; 3, *Ondina divisa*, live specimen, 3.1 mm high, found in 2000, station OYS-11; 4, *Semierycina nitida*, live specimen, 1.9 mm broad, found in 2000, station OYS-11; 5, *Altenaeum dawsoni*, live specimen, 1.5 mm broad, found in 1999, station OYS-37. The bivalves are corroded in the centre and near the top, probably due to preservation in formalin.

host species. Within the genus *Ondina* De Folin, 1870, for only one species, *Ondina perezi* (Dautzenberg & Fischer, 1925), the host is known (Gibbs, 1978). This is a sipunculid, *Phascolion strombi* (Montagu, 1804), which lives inside empty gastropod shells. The preferred host of *Ondina divisa* is not known, but the presence of the sipunculid *Golfingia* spec. in the same sample where *O. divisa* was found indicates that this sipunculid is possibly a host species. However, *O. divisa* might also associate with one of the tube building worms or bivalves that were also present in the sample. These were the tube worms *Chaetopterus variopedatus* (Renier, 1804) and *Myriochele danielsseni* Hansen, 1879, and the bivalves *Nucula nitidosa* Winckworth, 1930, *Semierycina nitida* (Turton, 1822), *Mysella bidentata* (Montagu, 1803), *Mactra corallina* (Linnaeus, 1758), *Phaxas pellucidus* (Pennant, 1777), *Abra alba* (Wood, 1802), *Abra nitida* (Müller, 1776), and *Corbula gibba* (Olivi, 1792). The soft tubes of C. *variopedatus* do not seem to provide the favorite substrate for a pyramidellid to live on. The solid tube of *M. danielsseni,* built up of luted sand grains, makes this polychaete a more likely candidate. Among the bivalves, particularly *C. gibba* might be a host, because of its strong sedentary way of living. Also the possibility that *O. divisa* is associated with *S. nitida* should be considered. However, although the particular coincidence of their occurrence in the same sample is striking, the very small size of *S. nitida* makes it less likely that the species could be a host. The other species might be less serious candidates because of their higher mobility, small size or digging life style.

Erycinidae

Semierycina nitida (Turton, 1822) (fig. 4)

Lepton nitidum; Tebble, 1966: 86, fig. 38b; Nordsieck, 1969: 89, pl. 14 fig. 50.91.
Hemilepton nitidum; De Boer & De Bruyne, 1991: 162, fig. 186.

Material. – The species was found at station OYS-11, 53°56'N 5°10'E, 40 m, silt fraction 24%, 2000 (1 specimen, preserved in the collection of the first author). The identification was based on Tebble (1966: 86, fig. 38b), Nordsieck (1969: 89, pl. 14 fig. 50.91) and De Boer & De Bruyne (1991: 162, fig. 186).

Distribution. – The species occurs from the Norwegian Sea and the Baltic south into the Mediterranean (Tebble, 1966: 86; De Boer & De Bruyne, 1991: 162; Poppe & Goto, 1993: 86). Seaward (1982: fig. 579; 1990: 75) mentions nine records of living specimens on the west side of the British isles and in the Channel, but only three of these are from after 1950, all west of the UK. For the North Sea he gives five records of shells only along the east coast of Scotland, and one of a live specimen west of Norway before 1950. From the Dutch Wadden Isles three records of (sub)fossil valves are known (De Boer & De Bruyne, 1991: 162). To our knowledge living specimens have never been collected before in the southern North Sea.

Biology. – Several authors suggest that *Semierycina nitida* inhabits sandy or gravelly bottoms where it lives in association with *Upogebia* spp. This seems contradictory, since *Upogebia* spp. are crustaceans living in burrows in silty sediments. In the Dutch part of the North Sea we have found *Upogebia* spp. exclusively at the Frisian Front and in the Oyster Ground at silt concentrations well beyond 15% and a median grain size of less than 200 μm, i.e. very fine sand. At the station where we found *S. nitida* the median grain size was 130 μm and *Upogebia deltaura* (Leach, 1816) was present here. Bonnin & Rodriguez Babio (1988) found empty shells of S. nitida near the coast of eastern Spain in sediment built up of 90% clay and mud and 8% very fine sand. However, the authors

mention that the species has been found living also in very coarse sand near the coast of Brittany. So there is no convincing evidence that *S. nitida* has a strong preference for sediment of a particular grain size or an obligatory relationship with *Upogebia* spp. It seems that the species lives either in coarse sediment or in silty sediment, but then in association with *Upogebia* spec.

Condylocardiidae

Altenaeum dawsoni (Jeffreys, 1864) (fig. 5)

Mysella dawsoni; Tebble, 1966: 7; De Boer & De Bruyne, 1991: 164, fig. 189.
Altenaeum nortoni Spaink, 1972: 143, figs 1-2; Backeljau et al., 1984: 206.

Material. – The species was found at station OYS-37, 54°09'N 4°20'E, 50 m, silt fraction 11%,1999 (2 specimens, preserved in the collection of the first author). The identification was based on De Boer & De Bruyne (1991: 164, fig. 189).

Distribution. – According to Poppe & Goto (1993: 88) the species ranges from the Arctic seas to the Mediterranean. For the North Sea there are only two records of living specimens, one west of Norway and one east of Scotland (Seaward 1982: fig. 591; 1990: 76). Both finds were made before 1950.

At the Dutch Wadden Isles three valves and two fragments have been found of (sub-) fossil specimens (De Boer & De Bruyne, 1991: 164). Further fossil material is known from the province of Zuid-Holland at Brielle (Spaink, 1972) and Ouddorp (De Bruyne et al., 1987). We did not find any older record of living specimens in the southern North Sea.

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