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Prosobranch and shelled opisthobranch molluscs from Store Ekkerøya, Varangerfjorden (northern Norway)

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Forty-one prosobranch and six shelled opisthobranch species were collected at Store Ekkerøya (70°05'N., 30°08'E.). Four of these are published for the first time from Varangerfjorden *(Helcion pellucidum, Lacuna crassior, Onoba semicostata* and *Retusa truncatula).* Remarks are given on *Littorina obtusata* s.l., *Littorina saxatilis* s.l., *Alvania mighelsi* and *Oenopota simplex.*

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INTRODUCTION

In August 1981 the authors visited Store Ekkerøya (70°05'N., 30°08'E.) in order to collect molluscs. As the material contains some interesting species and as the intertidal malacofauna of northern Norway is still relatively poorly known, it was felt useful to publish an account of the collected gastropods.

Store Ekkerøya is a small peninsula on the northern coast of the Varangerfjord, about 13 km east of Vadsø (Fig. 1). On its southern side, the peninsula is bordered by steep cliffs, which are a well-known breeding place for the Kittiwake *(Rissa tridactyla)* and the Black Guillemot *(Cepphus grylle)* (Janssens et al. 1982). Both sides of the narrow spit of land, connecting the peninsula with the mainland, consist of sandy beaches. Especially the northeastern beach (Fig. 2) is worth visiting, since here an extremely rich tide mark may be found, while the rocky shores bordering this beach lodge an interesting *Littorina* fauna. Around the peninsula, the fjord is rather shallow. The northeastern beach for instance, slopes to a depth of only 15 m.

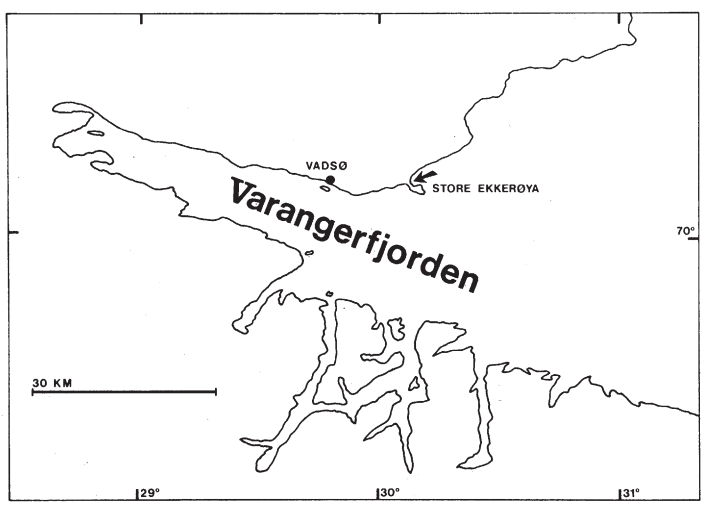

Fig. 1. Map of Varangerfjorden. The arrow indicates the northeastern beach at Store Ekkerøya.

MATERIAL AND METHODS

The material was collected in tide marks along the northeastern beach and on the rocky shores bordering this beach. Larger shells and specimens were taken by hand and about five kg shell grit was investigated under a magnifying glass (12x). In this way more than 7000 shells and specimens were obtained, containing 41 prosobranch and 6 shelled opisthobranch species.

In the systematic list the nomenclature is slightly modified after Abbott (1974), Thompson (1976) and Fretter & Graham (1976—1981). Each species is accompanied by two figures: the first denotes the number of living specimens, the second the number of shells. In order not to disturb this interesting biotope we did not collect large numbers of live animals.

Scissurella crispata Flemming, 1828 (—, 10), *Puncturella noachina* (L., 1771) (2, 74), *Helcion pellucidum* (L., 1758) (5, 11), *Acmaea testudinalis* (Müller, 1776) (1, 7), *Acmaea virginea* (Müller, 1776) (—, 44), *Lepeta caeca* (Müller, 1776) (1, 8), *Lepeta fulva* (Müller, 1776) (—, 7), *Margarites helicinus* (Phipps, 1774) (24, 1579), *Margarites groenlandicus* (Gmelin, 1791) (2, 27), *Margarites cinereus* (Couthouy, 1839) (—, 1), *«Solariella albula»* sensu G.O. Sars (1878, pl. 9 fig. 3) (1, 10), *Gibbula tumida* (Montagu, 1803) (—, 2), *Skenea peterseni* (Friele, 1876) (—, 52), *Moelleria costulata* (Møller, 1842) (—, 53), *Lacuna vincta* (Montagu, 1803) (16, 867), *Lacuna crassior* (Montagu, 1803) (—, 5), *Lacuna pallidula* (Da Costa, 1778) (22, 692), *Littorina littorea* (L., 1758) (1, 1), *Littorina saxatilis* agg. (27, 129), *Littorina obtusata* agg. (18, 674), *Onoba semicostata* (Montagu, 1803) (1, 11),*Onoba aculeus* (Gould, 1841) (3, 686), *Alvania mighelsi* (Stimpson, 1851) (—, 3), *Rissoa parva* (Da Costa, 1778) (—, 35), *Omalogyra atomus* (Philippi, 1841) (—, 50), *Skeneopsis planorbis* (Fabricius, 1780) (16, 1258), *Trichotropis borealis* Broderip & Sowerby, 1829 (—, 6), *Velutina velutina* (Müller, 1776) (1, 5), *Natica clausa* Broderip & Sowerby, 1829 (—, 9), *Amauropsis islandica* (Gmelin, 1791) (1, 9), *Epitonium greenlandicum* (Perry, 1811) (—, 1), *Nucella lapillus* (L., 1758) (2, 11), *Boreotrophon clathratus* (L., 1767) (1,

Fig. 2. View of the northeastern beach at Store Ekkerøya. Photo L. Janssens.

29), *Boreotrophon truncatus* Strøm, 1768 (—, 12), *Pyrene rosacea* (Gould, 1841) (—, 13), *Buccinum undatum* L., 1758 (2, 12), *Neptunea despecta* (L., 1758) (—, 6), *Oenopota turricula* (Montagu, 1803) (—, 1), *Oenopota pingelii* (Møller, 1842) (—, 1), *Oenopota simplex* (Middendorff, 1849) (1, 74), *Taranis moerchi* (Malm, 1871) (—, 2), *Odostomia unidentata* (Montagu, 1803) (—, 7), *Chrysallida eximia* (Jeffreys, 1849) (—, 8), *Retusa obtusa* (Montagu, 1803) (—, 12), *Retusa truncatula* (Bruguière, 1792) (—, 1), *Cylichna alba* (Brown, 1827) (—, 5) and *Limacina retroversa* (Flemming, 1823) (2, 25).

The bivalves will be discussed elsewhere. Besides many valves of the chiton *Tonicella rubra* (L., 1767), the grit contained a rich assemblage of foraminiferans and ostracods. Other faunal elements in the grit were: *Geodia* sp., Hydrozoa, *Spirorbis* sp., *Balanus* sp., Bryozoa, brachiopods and spines of sea urchins. The rocky shores contained a well-developed *Fucus-Laminaria* association, with both *Fucus* spp. and *Ascophyllum* present, and rockpools with *Corallina officinalis*.

All the material is kept at the «Laboratorium voor Algemene Dierkunde, Rijksuniversitair Centrum Antwerpen». Later it will be deposited in the collections of the «Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel (KBIN)».

REMARKS ON SOME SPECIES

Helcion pellucidum

Although this species has been reported from Øksfjord and Vardø (G.O. Sars 1878, Norman 1902, Odhner 1912), our finding may be the first published one from the Varangerfjord. According to Sneli (1970) the species is distributed from Morocco to the Kola peninsula.

Lacuna crassior

This uncommon species has a poorly known distribution. It has been reported from W. Greenland and Spitsbergen (Thorson 1944), the British Isles (Ankel 1936, McMillan 1973, Fretter & Graham 1980), Normandy (Ankel 1936) and Arctic Canada and Alaska (MacPherson 1971, Abbott 1974). In Norway *L. crassior* has earlier been collected at Lødingen (Hinnøya, Vesterålen) and Kamøyvær (Magerøya, W. Finnmark) (Hermans 1977).

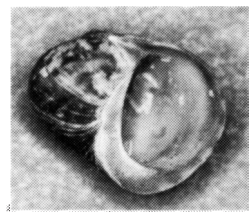

Fig. 3. *Littorina obtusata* sensu Sneli & Marion (1979) from Store Ekkerøya (Height x breadth: 6.2 x 7.3 mm). Photo J. Terryn.

Littorina obtusata agg.

The intra-and interspecific relationships within this species complex are still much debated (G.O. Sars 1878, Dautzenberg & Fischer 1914, Thorson 1941, Sacchi & Rastelli 1966, Sneli & Marion 1979 and Fretter & Graham 1980). We found at Store Ekkerøya *L. palliata* sensu G.O. Sars (1878) (Fig. 4) and *L. obtusata* sensu Hubendick & Warén (1976) and Sneli & Marion (1979) (Fig. 3). Of *L. palliata* the following remarkable forms were recorded (nomenclature after Dautzenberg & Fischer (1914): f. *elatior* G.O. Sars (Fig. 4), f. *coarctata* G.O. Sars (Fig. 5), f. *retusa* Lamarck and f. *contabulata* Dautzenberg & Fischer (Fig. 5).

The third species in the complex, *L. mariae* Sacchi & Rastelli, 1966, was not found among our material, although it has recently been reported in western Finnmark (Vader in litt.).

Littorina saxatilis agg.

The problem here is perhaps even more complex than in the foregoing species (James 1968, Sneli & Marion 1979, Fretter & Graham 1980, Smith 1981). Our material was not studied in detail, but nevertheless we could recognize *L. rudis groenlandica* (Menke) and *L. tenebrosa* Montagu, which both may be separate species (Wium-Andersen 1970, Fretter & Graham 1980).

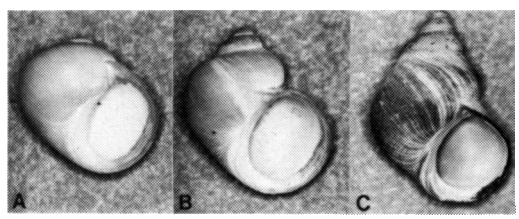

Fig. 4. Form variation in *Littorina palliata* sensu Hubendick & Warén (1976) from Store Ekkerøya. A: typical *L. palliata* (h x b: 9.7 x 10.3 mm). B: forma *elatior* (h x b: 12.4 x 10.5 mm). C: forma *elatior* transition to forma *coarctata* (h x b: 15.3 x 10.9 mm). Photo J. Terryn.

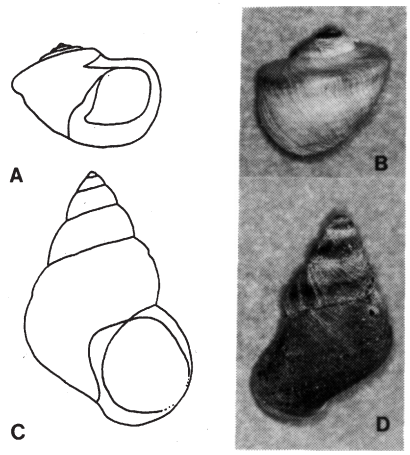

Fig. 5. Form variation in *Littorina palliata* sensu Hubendick & Warén (1976) from Store Ekkerøya. A, B: forma *contabulata* (h x b resp.: 9.7 x 12.7 and 9.5 x 9.7 mm). C, D: forma *coarctata;* although not visible on the figure, the specimen has a clear umbilicus (h x b: 15.6 x 10.0 mm). Photo J. Terryn.

Onoba semicostata

In Norway this species has been recorded northwards to Hammerfest (G.O. Sars 1878, Thorson 1941). According to Norman (1902) it is absent in East Finnmark, but Sneli (in litt.) states that it is common everywhere. Our sample may be the first published record from the Varangerfjord.

Alvania mighelsi

This species has for a long time been confused with *Cingula castanea* (Møller). Warén (1974), however, showed that previous Norwegian records of the latter species actually should be referred to *A. mighelsi.* It has been collected (mostly dead) in northern Norway at Vadsø, Langfjord and Bugøyfjord (G.O. Sars 1878, Norman 1902, Thorson 1941, Warén 1974). In W. Norway it has been found in Korsfjord (Warén 1974).

Oenopota simplex

This poorly known species has been confused with *Bela gigantea* Knipowitsch, 1901, *Bela violacea* Mighels & Adams, 1869 and *Pleurotoma shantaricum* Middendorff, 1849 (G.O. Sars 1878, Dautzenberg & Fischer 1912, Thorson 1944). The species (Fig. 6) is mentioned here because of its extremely restricted Norwegian distribution. As far as we know it has only been published from Vadsø (G.O. Sars 1878, Thorson 1941, 1944). Neither De Guerne (1886) nor Norman (1902) have found it elsewhere in the Varangerfjord. At Store Ekkerøya however, it is the most abundant carnivorous gastropod. Our largest shells measure (height x breadth): 18.2 x 9.3 — 16.2 x 8.4 — 16.2 x 8.0 — 16.1 x 8.9 — 15.5 x 8.3 — 15.5 x 8.2 — 15.4 x 8.2 — 15.3 x 8.0 — 15.1 x 7.9 — 14.9 x 7.8 mm. In contrast, the largest specimen from E. Greenland measures only 12.2 x 6.3 mm (Thorson 1944). Shells of *O. simplex* were further collected by us at Vadsø, Vardø and Finnvik (northeastern coast of the Varanger peninsula).

Retusa truncatula

This species occurs northwards to Øksfjord in W. Finnmark (G.O. Sars 1878, Odhner 1906). The single shell we found is slightly damaged, but there is no doubt on its identification. Whether the species actually lives around Store Ekkerøya remains uncertain.

SHORT NOTE ON THE GASTROPOD COMMUNITY AT STORE EKKERØYA

Most living specimens were collected near the rocky shores. *Acmaea testudinalis, Littorina littorea, L. saxatilis* s.l., *L. obtusata* s.l. and *Nucella lapillus* crawled on the rocks which were partly covered with *Balanus* and *Fucus.* Near the average low tide level we found attached to the fronds of *Laminaria, Helcion pellucidum, Margarites helicinus, Lacuna vincta, L. pallidula* and *Littorina obtusata* s.l. Between the *Laminaria* rootlets we found *Onoba* spp. Young *Lacuna pallidula* and egg-bearing *Skeneopsis planorbis* were quite abundant on *Gracilaria* in rockpools somewhat above the average low tide level.

The remaining live material was found washed ashore in tide marks. Some of these specimens live on rocks and stones below ELWS *(Puncturella noachina, Lepeta caeca),* while others crawl on *Laminaria* in the same zone

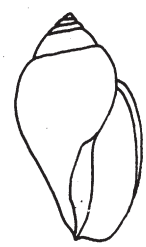

Fig. 6. *Oenopota simplex* from Store Ekkerøya (h x b: 15.3 x 8.0 mm).

(Margarites groenlandicus, «Solariella albula»). The carnivores like *Velutina velutina, Amauropsis islandica, Boreotrophon clathratus, Buccinum undatum* and *Oenopota simplex,* live in somewhat deeper water on clear sandy bottoms as indicated by the abundance of *Oenopota simplex, Skenea peterseni* and *Moelleria costulata.* This biotope may be unusual in the Varangerfjord where mud and stone bottoms seem to prevail (De Guerne 1883). Finally, *Limacina retroversa* is a pelagic gastropod, which probably reached Store Ekkerøya by coincidence as it is usually an inhabitant of open seas.

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