

Some interesting records of land molluscs in northern Norway

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Descriptions are given of some localities in northern Norway where the authors sampled land gastropods during a student excursion in summer 1981. Four records are discussed in the light of previous findings and special reference is made to the conclusions of Andersen (1982) on the habitats of terrestrial gastropods in Troms and Nordland counties. For *Vallonia pulchella* and *Clausilia bidentata* the records imply a range extension to the east, while *Pupilla muscorum* is confirmed for eastern Finnmark. The ecological data agree well with the observations of Andersen (1982).

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INTRODUCTION

In summer 1981 the authors took part in a student excursion through northern Norway during which land molluscs were collected in the counties of Finnmark and Troms (Fig. 1).

The publication of these records seems justified as, in the context of the European Invertebrate Survey, northern Norway is still a poorly investigated area. Since Andersen (1982) has already studied the terrestrial molluscs of Nordland and Troms in some depth, we will only report our findings from Finnmark. A record of *Arion distinctus* Mabile, 1868 from Tromsø will also be briefly discussed.

In the first part of this paper we will describe the collecting sites in Finnmark (Fig. 1). Afterwards some findings will be treated in detail and finally we will try to evaluate some of our records in the light of the work of Andersen (1982).

The material has been deposited in the collection of the first author and in the collections of the Naturhistoriska Museet Göteborg (Sweden).

DESCRIPTION OF THE SAMPLING SITES IN FINNMARK

1. Børselv (70°20'N, 25°30'E)

Molluscs were collected on the south west side of, and near the base of dolomite rocks (Skalvoll 1978) beside the E6, 3 km west of the intersec-

tion of the road to Indre Leirpollen on the east coast of Porsangerfjord. The vegetation was composed mainly of *Lycopodium* sp., *Gymnocarpium robertianum* (Hoffm.), *Juniperus communis* L., *Carex* spp., *Scirpus* spp., *Epipactis atropurpurea* Rafin., *Gymnadenia conopsea* R.Br., *Empetrum hermaphroditicum* Hagerup, *Vaccinium myrtillus* L., *Calluna vulgaris* (L.), *Pyrola major* L., *Pyrola rotundifolia* L. and *Ledum palustre* L. The molluscs were found under a large stone covered by moss and lichens. Species collected: *Pupilla muscorum* (L.), *Vallonia pulchella* (Müller), *Discus ruderatus* (Férussac), *Vitrina pellucida* (Müller), *Nesovitrea petronella* (Pfeiffer), *Euconulus fulvus* (Müller) and *Clausilia bidentata* (Ström).

2. Vadsø (70°05'N., 29°47'E.)

This town is situated on the north coast of the Varangerfjord. Land molluscs were collected from under wood and stones in a range of dunes on the island of Vadsøy, just in front of the town. The vegetation consisted mostly of *Botrychium lunaria* Sw., *Parnassia palustris* L., *Comarum palustre* L., *Rhinanthus minor* Ehrh., *Pinguicula vulgaris* L., *Matricaria inodora* L. and *Achillea millefolium* L. Species collected: *Pupilla muscorum* (L.), *Vitrina pellucida* (Müller) and *Deroceras agreste* (L.).

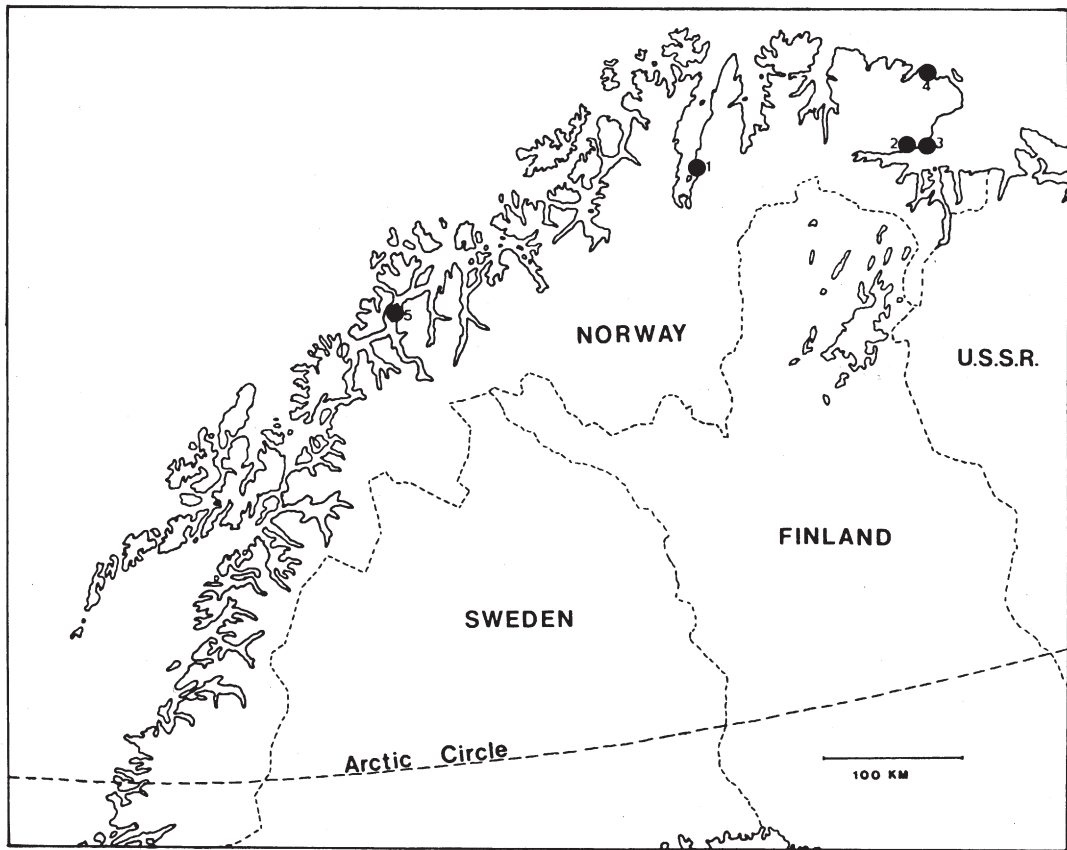


Fig. 1. Map of the collecting sites. The figures refer to the text. 1. Børselv. 2. Vadsø. 3. Ekkerøy. 4. Hamningberg. 5. Tromsø.

3. Ekkerøy (70°05'N., 30°08'E.)

A small peninsula on the north coast of the Varangerfjord. Here slugs were collected from under a piece of wood on grass land with *Urtica dioica* L., *Campanula rotundifolia* L. and *Achillea millefolium* L. The presence of the first mentioned species indicates a rather nitrogenous soil, probably due to large amounts of bird excrements. Only *Deroceras agreste* (L.) was found.

4. Road from Vardø to Hamningberg (70°30'N., 30°35'E.)

Molluscs were found near the small sandy road along the northeastern coast of the Varanger peninsula (Varangerhalvøya). On the seaward side of this road are rocky shores alternating with sandy beaches, while steep rock formations do-

minate the landward side. The soil here was covered with stones and, locally, ice. The vegetation is dominated by a great diversity of lichens such as *Cetraria islandica* (L.) Ach., *Cladonia portentosa* (Duf.) Zahlbr., *Stereocaulon* sp. and *Umbilicaria* sp. Species collected: *Arion subfuscus* (Drap.), *Vitrina pellucida* (Müller) and *Euconulus fulvus* (Müller).

REMARKS ON SOME SPECIES

Pupilla muscorum

All our specimens belong to the form with an entire aperture. Økland (1925) classifies this species within the «Norwegische Totalformen», i.e. those species that can be found all over Norway. Although Økland (1925) reports findings from Hornøy and Vardø in eastern Finnmark, this re-

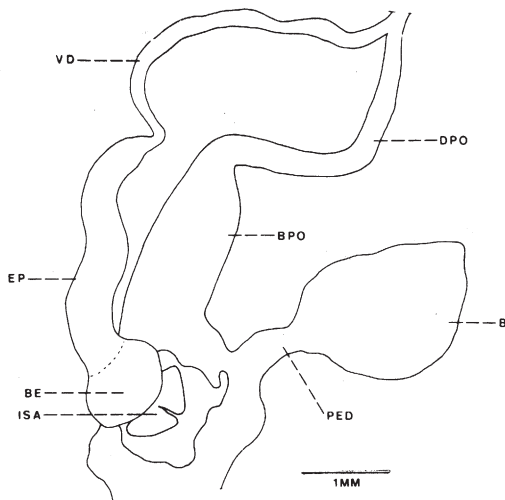


Fig. 2. Camera lucida drawing of the anterior part of the genitalia of *Arion distinctus*, Tromsø. A part of the atrium has been cut away to show the internal structure. B: bursa, BE: bulbus of the epiphallus, BPO: broad and firm portion of the oviduct, DPO: distal portion of the oviduct, EP: epiphallus, ISA: structure in the atrium at the termination of the epiphallus, PED: pedunculus and VD: vas deferens.

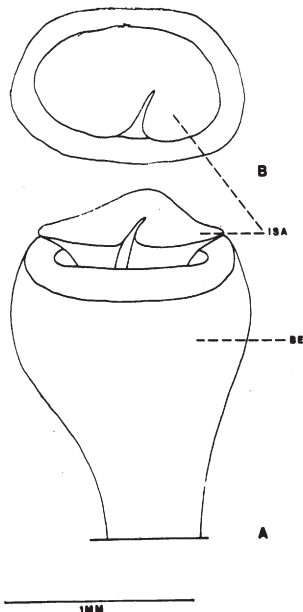


Fig. 3. *Arion distinctus*, Tromsø. Typical structure at the entrance of the epiphallus. A: lateral view (see also Fig. 2), B: seen from above.

gion is not indicated on the distribution map given by Kerney & Cameron (1981). Our record from Vadsø confirms those of Økland (1925).

Vallonia pulchella

Kerney & Cameron (1981) locate the northernmost limit of this species near 71°N, but their distribution map shows no records in Finnmark. Økland (1925) considers the species as a «Norwegische Totalform», although he admits that no records were known from Finnmark. The most northern locality he mentions is Karlsøy (70°N.) in Troms. The species has recently been found on the island of Loppa in western Finnmark (Vader 1979). Our record from Børselv is not only a second confirmation of the species' existence in Finnmark, but also extends its Norwegian distribution eastwards (Waldén in litt.).

Arion distinctus

Until a few years ago this species was considered synonymous with *Arion hortensis* Férussac, 1819. In 1977 Davies came to the conclusion that *A. hortensis* in Great Britain was composed of three forms of differing genitalia and spermatophores. In 1979 she gave these forms the status of species, viz. *A. hortensis* Férussac, 1819 s.s., *A. distinctus* Mabille, 1868 and *A. owenii* Davies, 1979 (Davies 1979).

The specimens from Tromsø were dissected and they showed genitalial features typical of *A. distinctus* (Figs. 2–3) viz. the structure in the form of a rather stiff plate folded round the termination of the epiphallus in the atrium, and an oviduct consisting of two parts: a dilated firm proximal part and a slender distal channel (Davies 1977, 1979, Backeljau 1981).

As expected Økland (1922, 1925) only mentions *A. hortensis* in a broad sense. We think that his material should be referred to as *A. distinctus* since his descriptions agree well with those of this species. Waldén (in litt.) confirmed this opinion, although *A. hortensis* s.l. has not yet been revised in Norway.

According to Økland (1922, 1925) the distribution of *A. hortensis* s.l. in Norway is restricted to 6 coastal localities in the south west of the country north to Kristiansund (63°N.). Kerney & Cameron (1981) also mention 63°N. as the northern limit in their description of the geographical range of *A. hortensis* s.l. Thus our records and those of Andersen (1982) of this species complex in Tromsø are quite remarkable when

compared with the literature mentioned above, Tromsø being more than 700 km north of the previously known distribution limit of the species complex. It is possible however that the species can turn up elsewhere, e.g. in greenhouses and gardens, if only looked for (Waldén in litt.).

Clausilia bidentata

Økland (1925) considers this species as a «Norwegische Semitotatform», which means that it can be found all over Norway, except in Finnmark and in the eastern part of southern Norway. The most northern locality he mentions is Reinøy (70°N.) in Troms. Kerney & Cameron (1981) also indicate 70°N. as northernmost limit and report no findings from Finnmark. However the species has recently been found on the island of Loppa in Finnmark (Vader 1979) and our record from Børselv is an extension of the distribution to the east (Waldén in litt.).

The two latter records imply that *C. bidentata* should be considered as a «Norwegische Totalform».

DISCUSSION

In general our records agree well with the conclusions of Andersen (1982) concerning the habitats of terrestrial molluscs in northern Norway. Indeed our specimens were mostly found in the same kinds of habitats as elsewhere in their distribution. Good examples are *Pupilla muscorum* and *Vallonia pulchella* which were collected in Finnmark from biotopes typical of these species (Kerney & Cameron 1981, Marquet 1982), viz. a rather dry and calcareous site (Børselv) and in dunes (Vadsø).

The record of *Clausilia bidentata* at Børselv illustrates a habitat shift of a quite hygrophilous species to a warmer and drier habitat in the extreme northeastern part of its distribution. The same kind of habitat shift was observed in *Vitrina pellucida*, a species which was collected in Finnmark at three sites (Hamningberg, Vadsø and Børselv). Andersen (1982) has studied the phenomenon of habitat shifts in more detail in Troms and Nordland.

It should be noted that a more intensive search at Børselv could reveal more interesting records, since this site seems to house a mixture of species with more or less different ecological requirements.

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