

## ***Vertigo moulinsiana* (Dupuy, 1849) (Gastropoda: Pulmonata) in Latvia**

Digna Pilāte\*

Latvian Museum of Natural History, K. Barona 4, Rīga LV-1715, Latvia

\*Corresponding author, E-mail: digna.pilate@dabasmuzejs.gov.lv

### **Abstract**

*Vertigo moulinsiana* (Dupuy, 1849) was recorded in a wet black alder forest (Cl. *Alnetea glutinosae*) in 1997 in the Forest Management District Aizkraukle. The locality is situated on a raised island of mineral soil in a raised bog. This is the first record of the species in Latvia.

**Key words:** Gastropoda, Latvia, Pulmonata, *Vertigo moulinsiana*.

### **Introduction**

*Vertigo moulinsiana* belongs to family *Vertiginidae*. The shell height is 2.2 - 2.7 mm and average width is 1.5 mm. The species prefers open habitats, and is characteristic in wet forests and marshlands, and calcareous fens. Most frequently it has been found on lake banks and in reed, sedge or *Glyceria* debris on the banks of rivers (Kerney et al. 1983; Pokryszko 1990). In Sweden, England and Scotland, the species occurs in wet forests including black alder swamps (Ehnström, Walden 1986; Killeen 2003). During the summer, the snails live on plant stems and leaves, preferably on *Typha*, *Iris*, *Glyceria*, *Carex* and *Phragmites* leaves at a height of 30 - 50 cm. Snails hibernate in plant litter where they can be found also in spring and autumn. Until now, the species has not been recorded in habitats managed by regular haymaking or grazing. The snails feed upon fungi covering the plants growing in wet habitats (Pokryszko 1990).

The distribution of the species is interpreted differently. One opinion is that it has a European and probably Holarctic distribution (Kerney et al. 1983). Other consider an Atlantic-Mediterranean distribution (Pokryszko 1990) or Northern European and Middle European distribution (Liharev, Rammelmeier 1952). The southern border of its distribution is not clear (Pokryszko 1990). To the North *V. moulinsiana* has been found in Lithuania and in South Sweden (Liharev, Rammelmeier 1952; Ehnström, Walden 1986; Pokryszko 1990). The species has not been recorded in Finland and Russian Karelia (Valovirta 2003). There are no data records from Estonia. However, in the collection of the Latvian Museum of Natural History, there are specimens of *V. moulinsiana* (LDM Z-5) collected in the Zaonezhje Region of Karelia at the end of July in 2003, where the author collected 21 specimens in a wet black alder forest on B. Lelikovskij Island of the Kizhi archipelago.

Species is protected in the European Union (EU Directive 1992). Particularly protected territories must be established in the sites with populations.

## Methods

The influence of forest management on terrestrial snails was studied in 1995 and 1997 on mineral soil islands in the Aizkraukle bog and also in three other sites in Latvia: Slītere, Līvberze and Mežole. The studies covered five forest habitat groups – pioneer phase of deciduous forests, pine forests, spruce forests, wet black alder forests and broadleaved forests.

*Vertigo moulinsiana* (Dupuy, 1849) is mentioned as a possible species of the fauna of snails in Latvia (Schlesch 1942; Sloka, Sloka 1957; Rudzīte 1999), but no records previously existed.

The species was collected in wet black alder forests (Cl. *Alnetea glutinosae*) in Aizkraukle bog at the end of July 1997. At first, the species was identified as *V. geyeri* and was published under this name (Pilāte 2000; Pilāte 2003). After rechecking the collected snails, it was recognised that the species was misidentified and that it actually was *V. moulinsiana*.

## Results and discussion

The two localities in black alder forests are situated on a bog island on an ecotone between raised bog and broadleaved-spruce forests. Groundwater flow with a high groundwater table is found in both habitats. The forests restored naturally after a clear-cut harvest around 1950th in one locality and in 1934 in another locality (blocks 175 and 174 in the Aizkraukle Forest Management District; Suško 1998). 21 species of vascular plants were found in the forest blocks, including *Typha*, *Iris*, *Glyceria*, *Carex* un *Phragmites* with a high diversity of *Carex* – 17 species (Suško 1998). These plants are preferred by *V. moulinsiana*.

*V. moulinsiana* was recorded in material collected by area sampling method (Dunger, Fiedler 1997). 22 land snail species were recorded in one locality where *V. moulinsiana* was dominant, 17 species – in another locality where *V. moulinsiana* was subdominant. The frequency of specimens was high in both localities. Two recorded species, *Clausilia dubia* (Draparnaud, 1805) and *Ruthenica filograna* (Rossmässler, 1836), are characteristic to calcareous habitats.

*V. moulinsiana*, probably, is really very rare, as it has not been found in other similar black alder forests in the Aizkraukle Forest Management District. The species has not been found also in other investigated sites (Slītere, Līvberze and Mežole) with black alder forests. Sampling time could be another reason for not finding the species. There is a low probability of finding *V. moulinsiana* if samples are collected in late spring or early summer. During this period the snails live on plants. Black alder forests are flooded in the early spring and it is difficult to sample plant litter. Probably, searches for the species should be started at the end of July.

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## References

- Dunger W., Fiedler H.I. 1997. *Methoden den Bodenbiologie*. G. Fischer, Jena. 539 S.
- Ehnström B., Waldén W.H. 1986. *Faunavård i Skogsbruket*. Del 2. Den lägre faunan. Skogsstyrelsen, Jönköping. 352 S.
- EU directive. 1992. Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Communities, 206: 750.
- Killeen I.J. 2003. A review of EUHSD Vertigo Species in England and Scotland (Gastropoda, Pulmonata: Vertiginidae). Proceedings of the Workshop on Conservation Biology of European Vertigo species. *Heldia* 5: 73–84.
- Kerney M.P., Cameron R.A.D., Jungbluth J.H. 1983. *Die Landschnecken Nord- und Mitteleuropas*. Paul Parey, Hamburg. 384 S.
- Liharev I.M., Rammelmeier E.S. 1952. *Land Snails of the Fauna of the USSR*. Akademia Nauk SSSR, Moskva, Leningrad. 511 p. (In Russian)
- Pilāte D. 2000. Ecological research of terrestrial snails in forests of Latvia. *Research of Nature* 1: 9–18. (in Latvian)
- Pilāte D. 2003. The habitat use of molluscs in the forests of Latvia. In: Heikkilä R., Lindholm T. (eds.) *Biodiversity and Conservation of Boreal Nature – Proceedings of the 10 years anniversary symposium of the Nature Reserve Friendship. The Finnish Environment* 485: 221–224.
- Pokryszko B.M. 1990. The Vertiginidae of Poland (Gastropoda: Pulmonata: Pupilloidea) – a systematic monograph. *Ann. Zool.* 43: 134–256.
- Rudzīte M. 1999. *Latvian Land Snails*. Gandrs, Rīga. 147 p. (in Latvian – Latvijas zemesgliemeži)
- Schlesch H. 1942. Die Land- und Süßwassermollusken Letlands mit Berücksichtigung der in den Nachbargebieten vorkommenden Arten. *Sonderabdruck aus dem Korrespondenzblatt des Naturforschers Vereins zu Riga* LXIV: 246–360.
- Sloka N., Sloka J. 1957. Mollusca – molluscs. In: *Identification Key to the Animals of the Latvian SSR*. 1. Rīga, LVI, pp. 732–775. (in Latvian – Mollusca – Gliemji. Latvijas PSR dzīvnieku noteicējs. 1)
- Suško U. 1998. *Natural Forests of Latvia. A Study on Biodiversity Structures, Dependent Species and Forest History*. WWF, Rīga. 187 p.
- Valovirta I. 2003. The habitat and status of *Vertigo angustior*, *V. genesii*, and *V. geyeri* in Finland and nearby Russian Karelia (Gastropoda, Pulmonata: Vertiginidae). Proceedings of the Workshop on Conservation Biology of European Vertigo species. *Heldia* 5: 85–94.

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Digne Pilāte\*

Latvijas Dabas muzejs, Kr. Barona 4, Rīga, LV-1715, Latvija

\*Korespondējošais autors, E-pasts: digna.pilate@dabasmuzejs.gov.lv

## **Kopsavilkums**

*Vertigo moulinsiana* (Dupuy, 1849) atrasta 1997 gadā slapjā melnalkšņu mežā (Cl. *Alnetea glutinosae*) Aizkraukles mežniecībā. Atradne lokalizēta augstā purva salā uz minerālās augsnes. Šis ir pirmais sugas dokumentējums Latvijā.