FIRST RECORD OF THE EUROPEAN LAND SNAIL
TROCHULUS STRIOLATATUS IN BRITISH COLUMBIA, CANADA
(PULMONATA: HYGROMIIDAE)

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Abstract: The European terrestrial snail Trochulus striolatus (C. Pfeiffer, 1828), found at one locality in the city of Revelstoke, is newly reported from British Columbia, Canada. This record appears to be the first time that this species has been found in western North America.

Trochulus striolatus (C. Pfeiffer, 1828) is one of two species of Trochulus, family Hygromiidae, that are introduced to North America. This genus is better known by the name Trichia, but a ruling by the ICZN (2004) has resulted in replacing Trichia Hartmann, 1840, with Trochulus Cheesman, 1876, so as to remove homonymy with Trichia de Haan, 1839 (Crustacea: Brachyura). In Europe Trochulus striolatus has an expansive range that includes the British Isles, northern France, the Netherlands, northern Switzerland, southern Germany, and extends eastward to Hungary and Slovakia (Kenney et al., 1983). Populations are discontinuous and subspecies are recognized by some authors (e.g. Falkner et al., 2002).

Both Trochulus striolatus and T. hispidus (Linnaeus, 1758) have long been known in North America, but until now only in eastern and central Canada and the northeast United States. In Canada, Trochulus striolatus is known from Quebec and Ontario, Nova Scotia and Newfoundland (Pilsbry, 1939; Brooks & Brooks, 1940, Dundee, 1974). In the U.S., Pilsbry (1939) recorded it from Massachusetts and Dundee (1974) from New York. The new record, the first from British Columbia, is also likely the first report of T. striolatus from western North America.

The following new record was found by chance during a brief stop along the Trans-Canada Highway in British Columbia in the autumn of 2007.

Canada: British Columbia: Columbia-Shuswap Regional District: Revelstoke: Big Eddy: Trans-Canada Highway (Hwy 1), rest area near W end of the Columbia River Bridge. 51°00' 16" N, 118°13' 29" W (WGS84 datum). Elevation ca 420 m. Leg. R. Forsyth and T. Forsyth, 17 October 2007 (Forsyth Collection, 07.183.881, 15 specimens).

The Big Eddy site is along the Columbia River, at a highway pullout in the City of Revelstoke. The land is low but probably not frequently flooded. Large black cottonwoods (Populus balsamifera ssp. trichocarpa) provide the tree cover and there is a well-developed understory of shrubs, including mountain-ash (Sorbus sp.). Among the terrestrial snails collected with T. striolatus, there were a mixture of native and introduced species: Allogona pychophora (Brown, 1870), Cochlicopa lubrica (Müller, 1774), Columella edentula (Draparnaud, 1805), Discus whitneyi (Newcomb, 1864), Nesovitrea binneyana (Morse, 1864), Oxychilus cellarius (Müller, 1774), Punctum randolphii (Dall, 1895), and Vitrina pellucida (Müller, 1774). Very young Arion, of an indeterminate species, were also observed. Due to time limitations, no other effort was made to search nearby localities for the species, but during an earlier visit to the same site in July 1998, Trochulus striolatus was not found. At that time only three species were collected (Cochlicopa lubrica, Discus whitneyi and Allogona pychophora), and it seems likely

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that this earlier collecting effort was less thorough or that the conditions for finding snails were not optimum. It could be possible that *Trochulus striolatus* was present but went undiscovered at that time.

In Britain this is a common species on waste ground, along roadsides, the edges of fields and woods, in quarries, under walls and in gardens, and living in semi-natural and old woods only in southern England (Kerney 1999). *Trochulus striolatus* is very common in southeastern Ontario in similar disturbed habitats; large quantities of shells are present in stream drift.

*Trochulus striolatus* (Figure 1) is unlikely to be confused with other, native or introduced snails in British Columbia. Among the species present at the Big Eddy locality, it is most similar to young of *Allogona pychophora*. Shells of juvenile *Allogona* differ in having a much narrower umbilicus and a thin lip without the internal basal rib, and the mantle has large dark blotches that can be seen through the shell. *Allogona* and other genera of the family Polygyridae, such as the medium-sized *Vespericola columbianus*, have a strongly flared or recurved aperture lip when adult. *T. striolatus* belongs to the speciose family Hygromiidae; there are no other hygromiids known to be introduced into British Columbia.

The shell is thin, translucent, heliciform, with a low conical spire; it is medium-sized, 11 mm wide, coarsely striate, and horn-brown with a pale band at the weakly angular periphery. The umbilicus is small, about 1/5 of the width of the shell. The lip of the aperture is slightly expanded basally and near the umbilicus. Behind the inner edge of the palatal lip there is a narrow rib that is strongest basally.

It is unclear what subspecies the snails from British Columbia may belong to.

The shell of *Trochulus striolatus* is similar to *T. hispidus* but always lacks periostracal hairs in adults; it is slightly larger and has a weak peripheral angulation marked by a faint, slightly more opaque, whitish band. There are other European species of *Trochulus*, but none of these are known to be introduced to North America.

With the addition of *Trochulus striolatus* to the list of terrestrial gastropods in British Columbia, there are now 14 introduced snails and 14 slugs recorded (Forsyth 1999, 2004; Forsyth et al. 2001 and unpublished). These represent slightly less than 30% of the total 96 species known to live in British Columbia.

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Figure 1. Apical, lateral and basal views of a shell of *Trochulus striolatus* from Big Eddy, Revelstoke, British Columbia; Forsyth collection, cat. no. 07.183.88  1. Width of shell: 11.3 mm.
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