

RE-IDENTIFICATION OF TERRESTRIAL SLUGS  
FROM SEABIRD NESTING BURROWS OFF THE  
WEST COAST OF VANCOUVER ISLAND

ROBERT G. FORSYTH<sup>1</sup>

Volunteer, Royal British Columbia Museum,  
675 Belleville Street, Victoria, British Columbia, Canada V8W 9W2  
E-mail: robert\_forsyth@telus.net

**Abstract:** Two species of terrestrial slugs were collected from driftwood and the nesting burrows of Leach's storm-petrels, *Oceanodroma leucorhoa* (Vieillot, 1818), on a small island off the west coast of Vancouver Island in the late 1960s. The species were identified and published as *Ariolimax columbianus* (Gould, 1851) and *Deroceras reticulatum* (Müller, 1774). However, based on external morphology and anatomy of preserved material and remarks on the pigmentation of the living animal, the record is re-identified as *Prophysaon foliolatum* (Gould, 1851). Although incorrectly determined, the original observations of *P. foliolatum* from storm-petrel burrows are noteworthy because of the unusual slug-bird association and habitat.

In 1967 a preliminary biological survey was made at Cleland Island, Clayoquot Sound, off the west central coast of Vancouver Island, British Columbia (ca. 49°10'N, 126°05'W). The survey's emphasis was on bird banding and seabird breeding populations, but non-avian fauna were observed and collected at the same time, including the discovery of terrestrial slugs in the nesting burrows of Leach's storm-petrels, *Oceanodroma leucorhoa* (Vieillot, 1818). Two species of slugs were encountered and originally identified as *Ariolimax columbianus* (Gould, 1851) and *Deroceras reticulatum* (Müller, 1774) (Campbell & Stirling 1968).

Contained in the Invertebrate Collection of the Royal British Columbia Museum (Victoria) are specimens of Cleland Island slugs collected by Campbell. The accompanying label clearly indicates that these specimens were from storm-petrel burrows. The lot (RCM 990-0815-001), consisting of 6 specimens, was labeled *Ariolimax columbianus* but contained a mixture of two species: *Ariolimax columbianus* (3 specimens) and a *Prophysaon* species (3 specimens), the latter re-cataloged as RBCM 990-0815-004. No specimens of *Deroceras reticulatum* from Cleland Island were found. I suspect that this species was not present

on Cleland Island and that *Prophysaon* was misidentified. Campbell acknowledges that the identification was likely wrong (personal communication, 9 July 2000).

The moderately contracted specimens of *Prophysaon* measure 22 mm, 30 mm, and 32 mm in length. The smallest of the three specimens lacks its tail, but otherwise the constriction at the site of self-amputation of the tail is evident. Pigmentation of the skin has mostly faded, but in one specimen (22 mm) there are 2 lateral "bands" on the mantle formed by an irregular series of dark speckles. A rather broad, pale dorsal stripe on the tail is evident in two specimens (22 mm and 32 mm). Where present, the portion of the tail posterior to the constriction is slightly paler than the body anterior to the constriction — a change in pigmentation at the constriction is evident in living examples of *P. foliolatum*. The body "reticulations" appear rather coarse but scarcely pigmented on the preserved specimens.

I dissected one specimen (32 mm). A very long epiphallus, and its abruptly cylindrical anterior portion, indicates the subgenus *Prophysaon* sensu stricto. The relative length and curved form of the cylindrical

---

<sup>1</sup>Mailing address: 2574 Graham Street, Victoria, British Columbia, Canada V8T 3Y7

section of the epiphallus suggests *P. foliolatum*, rather than *P. andersoni* (J. G. Cooper, 1872). The remark by Campbell & Stirling (1968) that "*Deroceras reticulatum*" was yellow further supports re-identification of these as *P. foliolatum*.

While *Deroceras reticulatum* is a particularly widespread, common introduced European species in British Columbia, it remains rather closely associated with humans, and its presence on Cleland Island — ca. 13 km northeast of Tofino, off the west coast of Vancouver Island — would therefore seem unlikely.

Pilsbry (1948) did not record *Prophysaon foliolatum* from the province, and it seems that the Cleland Island record of the species is likely the first from British Columbia. Cameron (1986) found the species from several localities in southwestern British Columbia, but it is now more generally known from many places along the British Columbia coast (unpublished data).

There are no trees on Cleland Island, and most of the island is bare rock outcroppings. Slugs were observed and collected near the approximate center of the island in the main petrel colony. The area has scattered driftwood throughout this area, presumably deposited throughout the island by winter storms. Campbell & Stirling (1968) noted a number of plant species in the storm-petrel colony: Douglas' aster, *Aster subspicatus* Nees; Cooley's hedge-nettle, *Stachys cooleyae* Heller; dunegrass, *Elymus mollis* Trin.; small-flowered alumroot, *Heuchera micrantha* Dougl.; and cow-parsnip, *Heracleum lanatum* Michx. Campbell et al. (1990:204, fig. 198) have published a photograph of the site. There are few published details of the microhabitat of *Prophysaon foliolatum*. Branson (1977)

associated this species with skunk cabbage, *Lysichiton americanum* Hultén & St. John. On Vancouver Island, *P. foliolatum* was observed in humid forests on skunk cabbage, devil's club [*Oplopanax horridus* (J. E. Smith) Miq.], other vegetation, logs and the surface of the ground (unpublished data).

Campbell & Stirling (1968) speculated that the slugs' presence in the burrows of storm-petrels may cause bird deaths. They noted up to 13 slugs (both *Ariolimax columbianus* and *Prophysaon foliolatum*) living in a single burrow and suggested that slug mucus may make flight impossible for an inflicted bird.

Re-identification of the slugs of Cleland Island adds an unusual, additional habitat and bird-slug association for *P. foliolatum*.

#### LITERATURE CITED

- BRANSON, B. A.  
1977. Freshwater and terrestrial Mollusca of the Olympic Peninsula, Washington. *The Veliger* 19: 310-330.
- CAMERON, R. A. D.  
1986. Environment and diversities of forest snail faunas from coastal British Columbia. *Malacologia* 27: 341-355.
- CAMPBELL, R. W. & D. STIRLING.  
1968. Notes on the natural history of Cleland Island, British Columbia, with emphasis on the breeding bird fauna. Report of the Provincial Museum, 1967: hh25-hh43.
- CAMPBELL, R. W., N. K. DAWE, I. McTAGGART-COWAN, J. M. COOPER, G. W. KAISER, M. C. E. McNALL.  
1990. The birds of British Columbia. Volume 1, Nonpasserines, introduction, loons through waterfowl. Royal British Columbia Museum, Victoria / Canadian Wildlife Service, Environment Canada, Ottawa. xvii + 514 pages.
- PILSBRY, H. A.  
1948. Land Mollusca of North America (north of Mexico). The Academy of Natural Sciences of Philadelphia, Monograph 3, 2(2): i-xlvii, 521-1113.