



## REDESCRIPTION OF *DEROCERAS LIBANOTICUM* (POLLONERA, 1909) (MOLLUSCA: PULMONATA: AGRIOLIMACIDAE)

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**ABSTRACT:** The status of *Deroceras libanoticum* as a good species was questioned. A rediscovery of the species on Mount Hermon, Israel, made it possible to verify its description and clarify the doubts regarding its status.

**KEY WORDS:** *Deroceras libanoticum*, Mollusca, Gastropoda, Agriolimacidae, redescription, Israel, Lebanon

### INTRODUCTION

In 1909 POLLONERA described *Agriolimax libanoticus* and presented a figure of its copulatory organs (Fig. 5). The fate of the types is unknown; they probably no longer exist. When describing his new species, POLLONERA pointed out its similarity with *D. berytensis* (Bourguignat, 1852). WIKTOR (2000), based only on POLLONERA's (1909) description and figures, also drew attention to the similarity between the descriptions of the two taxa, but could not clarify the matter completely. Several similar slugs were described from that part of the world, but unclear descriptions and the absence of types made it impossible to establish

their true identity so far (WIKTOR 1994, 2000). According to our knowledge nobody found the slug since the 19th century (POLLONERA's material, though the description is dated 1909, was collected then). A recent find of two specimens of *D. libanoticum* at a locality on Mount Hermon (Arabic: Jebel esh-Sheikh) made it possible to confirm that their appearance agrees completely with POLLONERA's (1909) description, and enabled us to point out the differences between this species and *D. berytensis*. Thus the doubts regarding its status seem to have been clarified.

### REDESCRIPTION

#### *Deroceras libanoticum* (Pollonera, 1909)

*Agriolimax libanoticus* POLLONERA 1909: 6, figs 9–10. Original localities: Shtora e M.te Ermon nel Libano (Festa) (=Shtora and Mount Hermon in Lebanon). The types probably do not exist anymore.

*Agriolimax libanoticus*: GERMAIN 1921: 77.

*Deroceras (Deroceras) libanoticum*: WIKTOR 2000: 467, figs 376–377 (diagrammatic, after POLLONERA 1909).

**Material examined:** 2 specimens from Israel, Mount Hermon, Newe Ativ, 990 m a.s.l., UTM Grid Zone 36: 754/683, leg. U. BAR-ZE'EV, 16.03.2004, Museum of Natural History, Wrocław University (Poland).

**Diagnosis.** Slug similar to *Deroceras berytensis* (Bourguignat, 1852) but smaller, with a poorly constricted penis of different shape, single, unforked penial gland, and a relatively smaller stimulator termi-

nating with a “tongue”. Hitherto known only from Shtora between the Lebanon and Anti-Lebanon Mountains and Mount Hermon. The latter mountain is currently shared by Israel, Lebanon and Syria.

**External appearance** (Fig. 1). Size (alcohol-preserved specimens): body length 25 and 22 mm, mantle length 9 and 8 mm, respectively. Coloration (alcohol-preserved slugs): dirty creamy, without spots. Mantle irregularly blackened in its anterior part; the whole dorsal side slightly darker; head, neck and tentacles blackish; sole uniformly cream-coloured. Mucus colour unknown.

**Genitalia** (Figs 2, 3, 4): Glandula hermaphroditica relatively large, narrow and elongate, very dark pigmented; glandula albuminalis, ductus hermaphroditicus and spermoviductus with no distinctive characters. Vas deferens thin, opening to posterior penis

wall slightly asymmetrically but close to the middle. Musculus retractor not forked, inserted near the junction of the vas deferens and the penis. The penis has an irregular shape, resembling a cone with its top directed anteriorly; constriction in the mid part of the penis indistinct; posterior part of the penis widened, forming two convexities of different shape and size; the larger convexity carries a single penial gland. The penial gland has the form of an elongated, single (!) process covered with glandular papillae. The posterior part of the penis and base of the penial gland are pigmented with black. Inside the penis there is a small, completely flat, tongue-like stimulator (!). The spermatheca has a long truncus and large ovate container.

**Intestine:** The terminal part of the alimentary canal with a shallow, pocket-like caecum (Fig. 5).

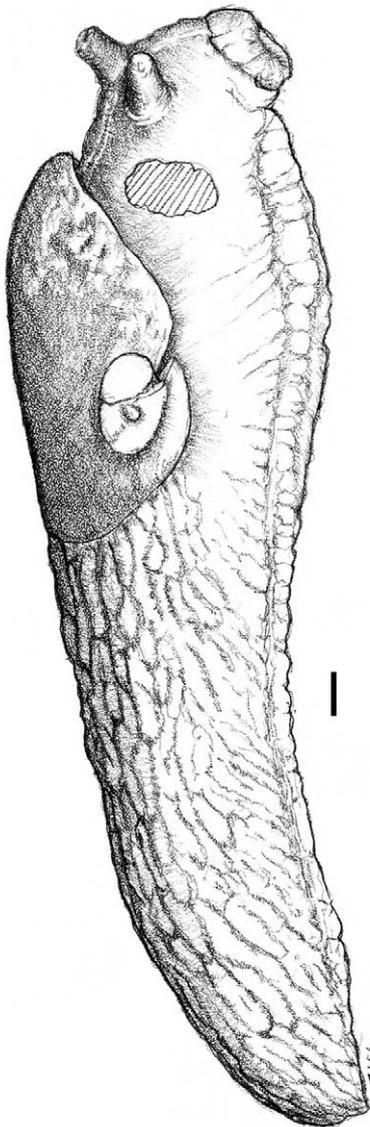


Fig. 1. *Deroceras libanoticum* (Pollonera, 1909). Specimen from Neve Ativ on Mount Hermon, leg. U. BAR ZE'EV, 16.03.2004. Scale bar 1 mm

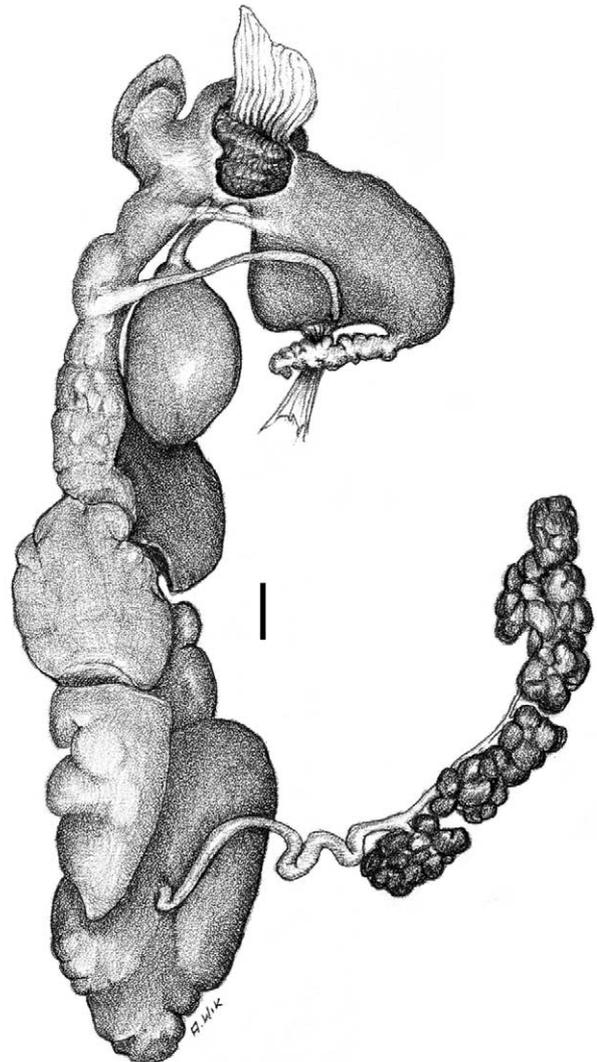


Fig. 2. Reproductive system of *Deroceras libanoticum* (Pollonera, 1909), specimen shown in Fig. 1. Scale bar 1 mm

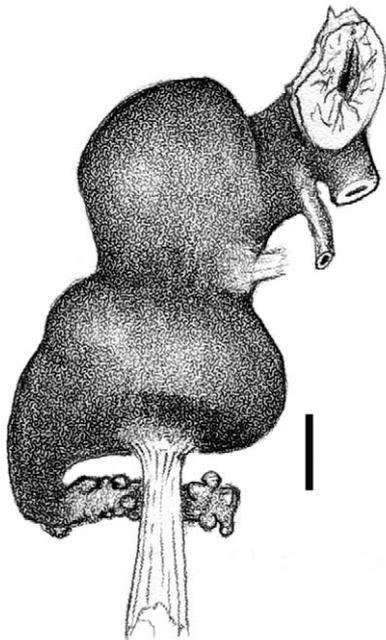


Fig. 3. Penis of *Deroceras libanoticum* (Pollonera, 1909) viewed from the side opposite to that shown in Fig. 2. Scale bar 1 mm



Fig. 4. Penis of *Deroceras libanoticum* (Pollonera, 1909), from POLLONERA (1909)

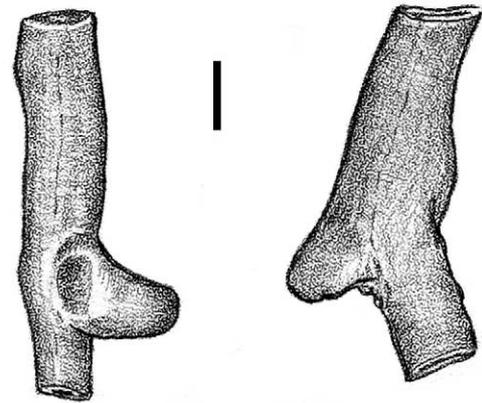


Fig. 5. *Deroceras libanoticum* (Pollonera, 1909). Terminal part of intestine (rectum) with a blind pocket (coecum) in specimens from Figs 1–3 (left), and the other specimen (right). Scale bar 1 mm

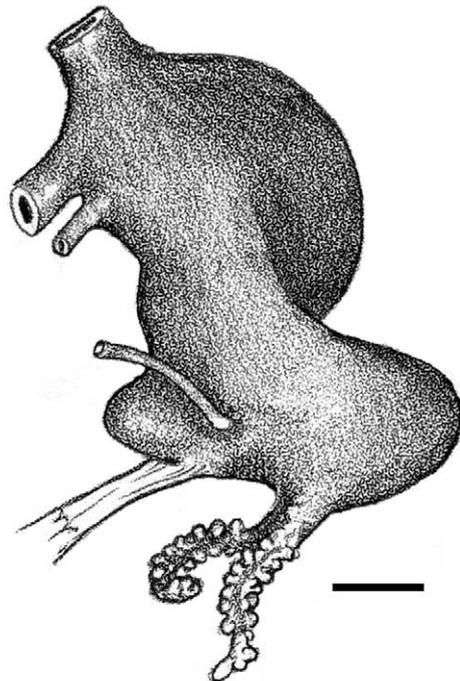


Fig. 6. Penis of *Deroceras berytensis* (Bourguignat, 1852), specimen from a garden in Brumana near Beirut, Lebanon, leg. A. RIEDEL, 22.03.1961. Scale bar 1 mm

## REMARKS

The slug is very similar to *Deroceras berytensis* (Bourguignat 1852), but smaller. According to POLLONERA (1909) his specimens were 12–13 mm long. Our slugs are larger (ca. 25 mm) but clearly smaller than *D. berytensis* (!), which can reach 32 mm in length (WIKTOR 2000). Other differences between the two species involve the appearance of the penis and the terminal part of the alimentary canal. The penis of *D. berytensis* is of a different shape (Fig. 6, and WIKTOR

1994, 2000), with a wider anterior part, and is more elongated. The penial gland in numerous specimens, also those from the vicinity of Beirut (type locality), is forked (!). Another distinctive character is a much bigger, wider and fan-like stimulator (!) in *D. berytensis* (cf. WIKTOR 2000). The localities of the two species are situated very close together, however the slugs differ clearly.



Nevertheless the situation remains complicated due to the fact that, like POLLONERA (1909), we had only two specimens of *D. libanoticum* available for study. On the other hand, in the case of *D. berytensis* we had at our disposal numerous specimens both from the vicinity of Beirut and from other areas e.g. Cyprus, Turkey (WIKTOR 1994, 2000) and Israel (unpublished). An additional complication is the existence in the literature of several unclear descriptions of slugs from that area, which were described as new species (cf. WIKTOR 2000). These taxa include not

only *Limax phoeniciaca* Bourguignat, 1852, *Agriolimax* (s. str.) *pentheri* Babor, 1905, *Agriolimax damascensis* Germain, 1911, *Agriolimax pallaryi* Pollonera (in Germain, 1911), but also *Agriolimax cyprius* Simroth, 1906 from Cyprus, and *Agriolimax steindachneri* Wagner, 1931 from Turkey (cf. WIKTOR 2000). It has to be added that WIKTOR (2000) placed in the synonymy of *D. berytensis* both *Agriolimax* (*Agriolimax*) *jordanicus* Wagner, 1940 and *Deroceras grossui* Reischütz, 1975.

## CONCLUSION

In all probability, *Deroceras libanoticum* (Pollonera, 1909) is a distinct species different from *D. berytensis* in spite of the doubts expressed recently by WIKTOR (2000).

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