Re-description of Gyraulus homsensis (Dautzenberg, 1894)
from Lebanon (Gastropoda: Planorbidae) with an identification key of the Gyraulus spp. of the Near East

Peter GLOER1 and Aref DIA2

1. Biodiversity Research Laboratory, Schulstr. 3, D-25491 Hetlingen, Germany, E-mail: gloeer@malaco.de
2. National Council for Scientific Research, POBox:11-8281, Riad el Solh, Beirut 1107226, Lebanon, E-mail: arefdia@ul.edu.lb

*Corresponding author, P. Gloer, E-mail: gloeer@malaco.de

Received: 21. August 2012 / Accepted: 17. January 2013 / Available online: 14. February 2013 / Printed: xxxxxx 2013

Abstract. We recorded the presence of Gyraulus homsensis (Dautzenberg, 1894) in Lebanon. We compared this species with the known Gyraulus spp. from Lebanon and surrounding regions, and showed that this species is distinct from the other Gyraulus spp. known so far. We have improved the knowledge on the biodiversity in Lebanon as this species has never been mentioned from Lebanon since the original description.

Key words: Gyraulus homsensis, re-description, Lebanon.

The known Gyraulus spp. (Mollusca: Gastropoda: Planorbidae) of Lebanon are not well studied (Meier-Brook 1983, Gloer & Böhneck 2007). Previously, Gyraulus spp. have been described as belonging to the genus Planorbis, and the only Planorbis sp. which is not re-investigated is Planorbis libanicus Westerlund, 1899. Westerlund (1899: 170-171) described it as a large species with a diameter of 14 mm and a shell height of 5 mm, with 5.5 – 6 whorls. The size of this shell is typical of other Planorbis. Anatomically species of the genus Planorbis can be distinguished by the slim phallosome which is as slim as the vas deferens, while it is in Gyraulus of the same width as the praeptum.

In the transition area between Asia and Africa, the following Gyraulus spp. have been found: from Mesopotamia the species G. euphraticus (Mousson, 1874) and G. huwayzahensis Gloer & Naser, 2007, from Anatolia the species G. argeicus (Strunary 1904, redescribed by Gloer & Georgiev 2012) and G. pamphylicus Gloer & Rähle, 2009, from Egypt G. ehrenbergi (Beck, 1837), from Syria G. lebaniacus (Bourguignat, 1852) and G. homsensis (Dautzenberg, 1894), and from Lebanon G. piscinarum Bourguignon, 1852 and G. bekaensis Gloer & Böhneck, 2007. Up to now, only G. piscinarum and G. bekaensis have been found in Lebanon (Gloer & Böhneck 2007).

The Gyraulus spp. can be distinguished by the shells combined with the prostate diverticules (Meier-Brook 1983).

In nature conservation, redescriptions of species are important because we can only protect species we know. For example Gyraulus stroemi (Westerlund, 1881) is a species which has been neglected for a long time by Western Europeans (Kennard & Woodward 1926, Meier-Brook 1983) and had been synonymized with G. acronius (A. Ferussac, 1807) by these authors until Gloer & Vinański (2009) redescribed it. Since then the curator of the Natural History Museum Göteborg (Sweden) could identify many samples in the Museum’s collection as Gyraulus stroemi and as a result the distribution of this species in Sweden and Norway is better known today (von Proschwitz 2011, and pers. comm.).

The intention of this paper is (i) to improve the knowledge on the biodiversity of Lebanon, (ii) to re-describe Gyraulus homsensis, and by to providing an identification key of the Gyraulus spp. of the Near East.

Altogether 20 river systems were surveyed (springs, brooks, rivers, ponds and lakes) and 200 sampling sites studied in Lebanon (Fig. 1).

The snails were collected from the banks of the waters with a Surber sampler and a kick net. The samples were stored in ethanol (75%) for later analysis. The dissections and measurements of the genital organs and the shells were carried out using a stereo microscope (Zeiss, Germany). The photographs were made with a digital camera system (Leica R8).

Genus Gyraulus Charpentier, 1837

Type species: Planorbis albus O.F. Müller, 1774

Gyraulus homsensis (Dautzenberg, 1894) (Fig. 2-3)

Material examined: 14 ex. in ethanol, Ammiq springs and pond, 850 asl., 33°43’ N, 35°47’ E, 06.05.2004 A. Dia leg. The material is deposited in coll. Dia, 2 ex. coll. Gloer.

Locus typicus: Lake Homs (Fig. 1).
Figure 1. The sampling sites of *Gyraulus homsensis*. 1: type locality, 2-4: listed sampling sites by Dautzenberg, 1894), 5: recent sampling site.

Figure 2. *Gyraulus homsensis*. (1): the shell, (2): the soft body, (3): reproductive organs. bc = bursa copulatrix, pht = phyllotheca, prd = prostate diverticules, prp = preputium, vd = vas deferens.

Figure 3. Faksimile of the original description of *Gyraulus homsensis*. 
Re-description of *Gyraulus homsensis*

**Figure 4.** The *Gyraulus* species of the Near East. 1: *G. pamphylicus* (holotype), 2: *G. hebraicus* (paralectotype), 3: *G. euphraticus* (syntype), 4: *G. argaeicus* (topotype), 5: *G. ehrenbergi* (topotype), 6: *G. huwaizahensis* (holotype), 7: *G. piscinarum* (paralectotype), 8: *G. bekaensis* (holotype), 9: *G. homsensis*.

**Re-description:** The shell is horn-coloured and dull. The first whorls of the upper side are depressed, the umbilicus is broad and regularly deepened. The 4 whorls are convex, of which the last one is deflected. The diameter of the shell is 5.0 - 7.0 mm, and the height of the last whorl is 1.1 - 1.2 mm.

**Anatomy:** The mantle is whitish with no characteristic patterns. The phallotheca is longer than the preputium, the vas deferens is widened at the proximal end. The prostate gland bears 20-22 diverticules. The bursa copulatrix is club shaped.

**Associated species:** *Gyraulus bekaensis*, *Valvata saulcyi*, *Pseudobithynia hamicensis*, *P. kathrini*.

**Remark:** Dautzenberg described *G. homsensis* to be of a size of max. 5 mm in diameter with a shell height of 1 mm (Fig. 3). A. Dia also found specimens with a diameter of 7 mm, however all characteristics described and depicted by Dautzenberg correspond to the features of the re-described species.

**Identification key of the *Gyraulus* spp. of the Near East**

Because from now on the anatomy of all *Gyraulus* spp. which have been described from the Near East is known, we can provide an identification key for these species (Fig. 4).

1. Body whorl angled or canted 2  
1’. Body whorl rounded 4
2. Height of the last whorl 1.4-1.5 mm, diameter 5.1-5.7 mm 3  
3. Last whorl not prominent, prostate with 9-18 diverticules 3’  
3’. Last whorl prominent, prostate with 16-18 diverticules 4
4. Shell’s max. diameter 5 mm 5  
4’. Shell larger than 5 mm 8
5. Height of the last whorl 1.4-1.5 mm, diameter 5.1-5.7 mm *G. bekaensis* 6

5’. Height of the last whorl 1.0-1.2 mm 7
6. Last whorl not prominent, prostate with 9-18 diverticules 3  
6’. Height of the last whorl 1.0-1.2 mm, prostate diverticules 20-22, last whorl deflected *G. homsensis* 8

7. Diameter 5 mm, height of last whorl 1.2 mm, prostate diverticules 11-15 3  
7’. Diameter 5 mm, height of last whorl 1.0 mm, prostate diverticules 14-19 *G. hebraicus* 4
8. Diameter 5-7 mm, height 1.0-1.2 mm, prostate diverticules 20-22, last whorl deflected 8’

8’. Diameter 7 mm, height 2.2 mm, prostate diverticules 18-22 5

*Gyraulus piscinarum* and *G. euphraticus* are widely distributed species: *G. piscinarum* from Lebanon to the Black Sea coast (Meier-Brook 1983, Göler & Bölönek 2007) and *G. euphraticus* from Mesopotamia eastwards to Nepal (unpublished data). All the other *Gyraulus* spp. under discussion, however, they appear to be regionally restricted in their distribution.
Acknowledgement. We would like to express our thanks to Dr. David Walker and an anonymous reviewer who checked the English.

References


