

## *Gyraulus pamphylicus* n. sp. – a new species from Turkey (Mollusca: Gastropoda: Planorbidae)

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### > Abstract

In 1986 W. Rähle collected a *Gyraulus* sp. in Turkey, region of Antalya, which is unknown so far. We compared this species with those that are known from the Near East, which had been studied by MEIER-BROOK (1984), as well as by GLÖER & BÖSSNECK (2007) and GLÖER & NASER (2007). This hitherto unknown species is described here as *Gyraulus pamphylicus* n. sp.

### > Kurzfassung

*Gyraulus pamphylicus* n. sp. – eine neue Art aus der Türkei (Mollusca: Gastropoda: Planorbidae). – 1986 sammelte W. Rähle einen *Gyraulus* sp. in der Türkei, in der Region Antalya, der bisher unbekannt ist. Wir verglichen ihn mit bekannten Arten des Nahen Ostens, die bereits von MEIER-BROOK (1984), sowie von GLÖER & BÖSSNECK (2007) und GLÖER & NASER (2007) untersucht wurden. Die unbekannte Art wird hier als *Gyraulus pamphylicus* n. sp. beschrieben.

### > Key words

*Gyraulus*, *Gyraulus pamphylicus* n. sp., Turkey.

## Introduction

According to BILGIN (1980), only two *Gyraulus* species are known from Turkey: *Gyraulus albus* (O. F. Müller, 1774) and *G. laevis* (Alder, 1838). In 1984 MEIER-BROOK added *G. piscinarum*, which has also been mentioned by GLÖER & BÖSSNECK (2007) from Turkey. YILDIRIM et al. (2006) listed in addition *G. ehrenbergi* (Beck, 1837), *G. euphraticus* (Mousson, 1874), *G. parvus* (Say, 1817), *G. crista* (Linnaeus, 1758), and *G. hebraicus* (Bourguignat, 1852) from Turkey.

*Gyraulus argaeicus* (Sturany, 1904), described from Turkey (Soisaly), has not been mentioned ever after its original description in the literature. From neighbouring countries some more species are known; from Syria: *G. homsensis* (Dautzenberg, 1894), from the Lebanon *G. bekaensis* Glöer & Bößneck, 2007, and from the Iraq *G. huwaizahensis* Glöer & Naser, 2007. BANK (2004) listed *G. albus*, *G. laevis*, and *G. crista* from Greece, and ANGELOV (2000) mentioned *G. albus*, *G. laevis*, *G. crista*, as well as *G. piscinarum* from Bulgaria.

One sample, collected by W. Rähle in 1986, revealed a new *Gyraulus*, which we describe here as *Gyraulus pamphylicus* n. sp.

## Material and methods

The snails were collected with a sieve, and the samples were preserved in 75% ethanol. The dissections and measurements of the genital organs and the shells were carried out by means of a Zeiss stereo microscope with an eyepiece-micrometer; the photographs were made with a Leica R8 camera system with a digital adapter. The type material is stored in the Natural History Museum of Stuttgart (SMNS).

**Tab. 1.** Distinguishing characteristics of the *Gyraulus* spp. of the Near East. \*The keel of *G. homsensis* is not visible on the original drawing but mentioned in the original description.

Taxon	max. diameter D [mm]	height of last whorl h [mm]	ratio D : h	keel	no. of whorls	last whorl prominent	umbilicus	no. of prostate diverticles
<i>G. pamphylicus</i> , Turkey	7.0	1.0–1.2	7.0–5.8	yes	4	yes	narrow	16–18
<i>G. argaeicus</i> , Turkey	7.0	2.2	3.2	slight	4	yes	wide	?
<i>G. hebraicus</i> , Syria	5.0	1.2	4.2	no	4	no	narrow	11–15
<i>G. homsensis</i> , Syria	5	1	5.0	slight*	4.5	yes	wide	?
<i>G. piscinarum</i> , Lebanon	4.4	1.1–1.2	4.0–3.7	no	3.5	yes	wide	12–16
<i>G. bekaensis</i> , Lebanon	5.7	1.4–1.5	4.1–3.8	yes	3.5	yes	narrow	18
<i>G. ehrenbergi</i> , Egypt	4.5	1.0	4.5	no	3.5	yes	narrow	14–19
<i>G. huwaizahensis</i> , Iraq	3.0–3.5	1.0	3.0–3.5	no	3.75	yes	narrow	9
<i>G. euphraticus</i> , Iraq	7.0	1.0	7.0	slight	4.5	no	narrow	9–18



**Fig. 1.** The sampling site (red dot) of *Gyraulus pamphylicus* n. sp.

## Results

As the specimens have been put in an unrelaxed state into ethanol, the prostate is contracted, and in Fig. 2.4 not all prostate diverticles are visible.

## Genus *Gyraulus* Charpentier, 1837

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

**Remark:** *Gyraulus* species are left coiled, but the under side is the functional upper side of the snail. In the following description we always refer to the functional sides.

## *Gyraulus pamphylicus* n. sp.

**Material examined:** 25 ex. from loc. typ.

**Holotype:** Shell width 5.7 mm, shell height = 1.1 mm, SMNS ZI - 0070352 (in ethanol).

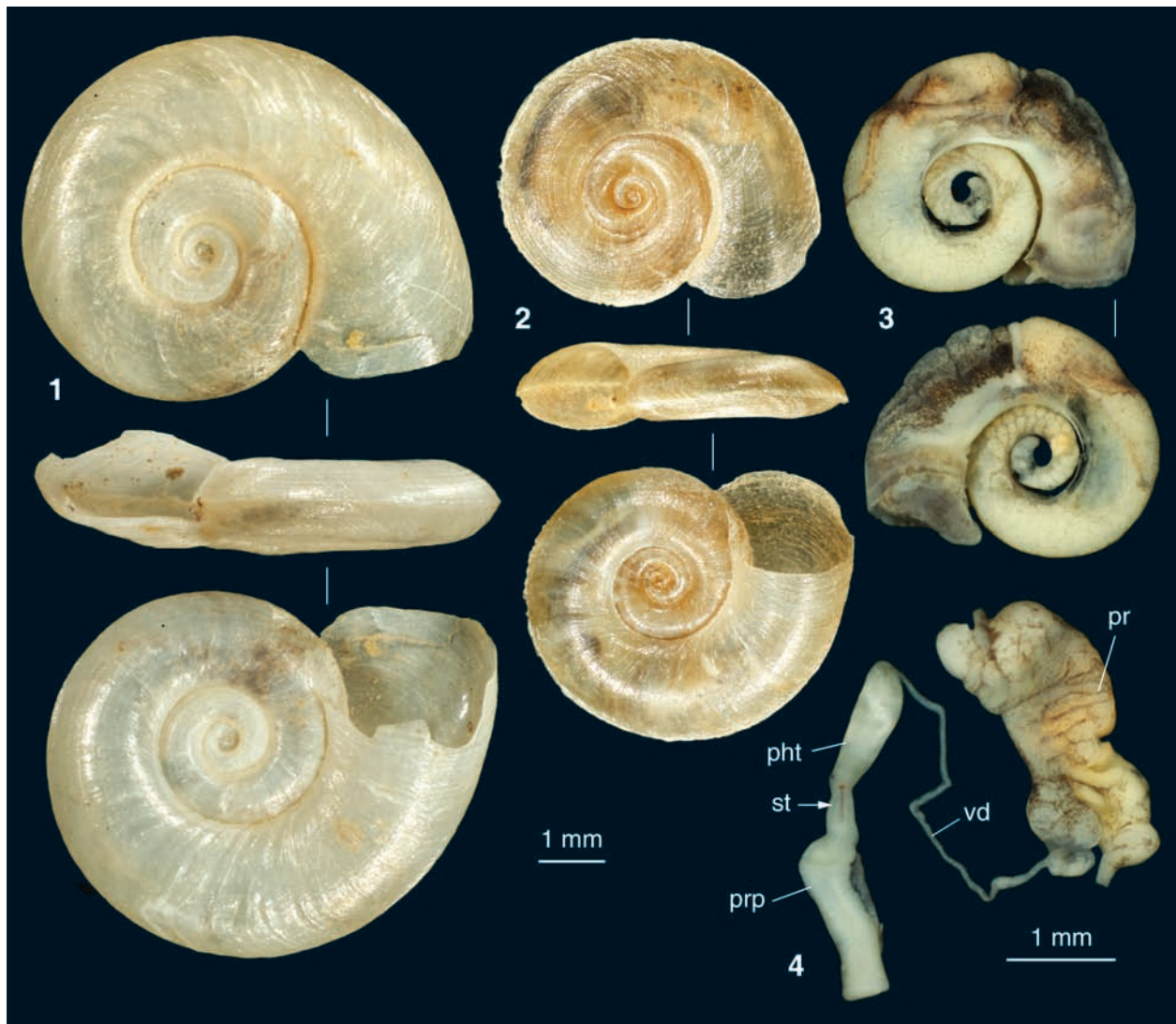
**Paratypes:** 19 ex. SMNS ZI - 0070353, 6 ex. coll. Glöer.

**Locus typicus:** Karstic waters in the neighbourhood of the small cave Öküzini, about 30 km NNW of Antalya, and 900 m northeast of the important archaeological site Karain, at the very northwestern edge of the extensive Antalya travertine plain, 300 m above sea-level (37°08' N longitude and 30°20' E latitude; UTM TG80); Sept./Oct. 1986, W. Rähle leg.

**Habitat:** Near Öküzini, at the foot of the Toros Mountains, productive karst springs emerge. Besides a main stream, in which *Theodoxus altenai* Schütt, 1965, can be found, these springs provide small sun-exposed pools and ditches with clear, very slow-running water, and a rich vegetation of submerged macrophytes, where *Gyraulus pamphylicus* n. sp. occurs. The animals live preferably on water plants, in company with the Caenogastropoda taxa *Graecoanatolica pamphylica* (Schütt, 1964), *Islamia anatolica* Radoman, 1973, *Pyrgorientalia zilchi* (Schütt, 1964) and *Bithynia pseudemmericia* Schütt, 1964.

**Etymology:** Named after the antique name of the region where the species lives.

**Description:** The light-corneous shell is silky to glossy and transparent with fine growth lines. The flattened shell consists of four whorls, which are regularly and rapidly increasing with a clear visible to deep suture. The last whorl is angled with small periostracal fringes at the keel and with up to eight lines at the upper and



**Fig. 2.** *Gyraulus pamphylicus* n. sp. 1–2: shell, 3: mantle pigmentation, 4: copulatory organs; **pht** = phallotheca, **pr** = prostata, **prp** = praeputium, **st** = stylet, **vd** = vas deferens.

undersides of the whorls. These fringes partly reveal a lattice structure on the surface, similar to *G. albus*. The last whorl is not deflected. The first whorls are immersed on both sides. The shell is of medium-size, 5.0–7.0 mm in diameter and 1.0–1.2 mm in height.

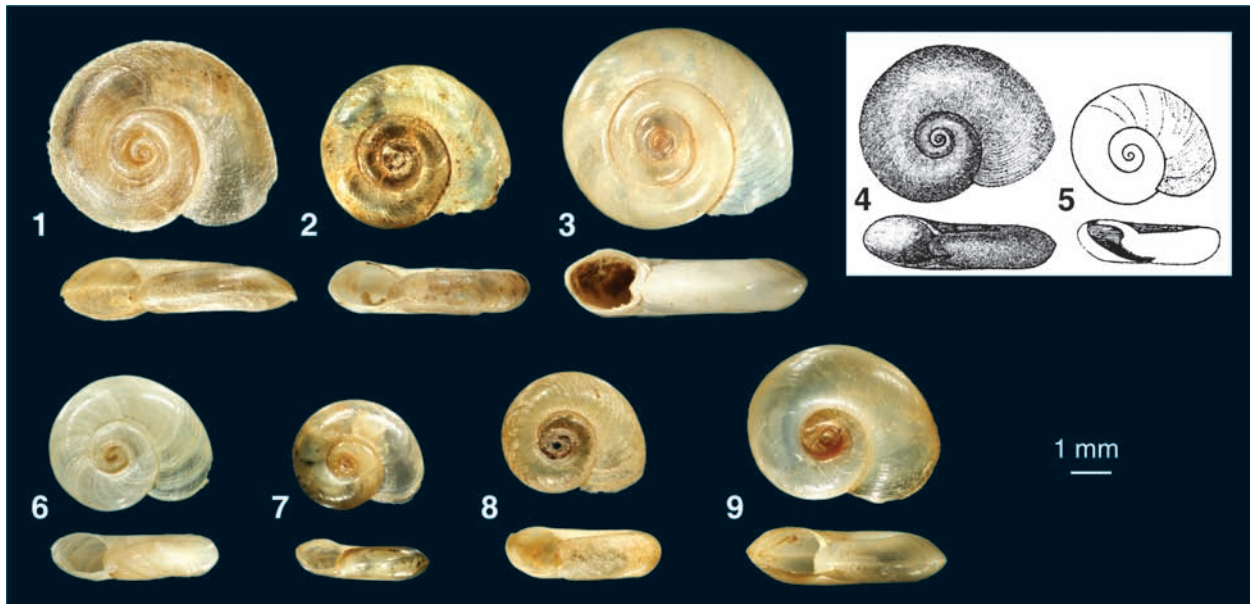
**Animal:** The animal is light grey with a diffuse mantle pigmentation. The prostate gland bears 16–18 long diverticles. The phallotheca is as long as the praeputium (fig. 2.4). The stylet is long (fig. 2.4). The kidney margin is undulated.

## Discussion

In order to identify the *Gyraulus* sp. that had been collected by W. Rähle, we had to compare this species with the those *Gyraulus* spp. of this region that

had previously been known. The differences between the *G. pamphylicus* and such other *Gyraulus* spp. as live in Central Europe and are mentioned in the literature: *G. albus*, *G. laevis*, *G. parvus*, and *G. crista* are, obvious, as the former are much smaller or are not keeled.

The only *Gyraulus* sp. known from Turkey which has a prominent body whorl and a shell that is only slightly keeled, is *Gyraulus argaeicus* (loc. typ.: Soisaly, region of Kayseri), the shell of which is twice as high as *G. pamphylicus* n. sp. But the original description and drawing are, concerning the shell height, contrary, because the depicted shell is only one half of height of the originally given measurements. The anatomy of *G. argaeicus* is unknown, so all we can do is to compare the shells under considering of the original description and the drawing given by STURANY (1905: 12, fig. 9, here: fig. 3.4). It was not possible for us to study the type material of *G. argaeicus* because the Natu-



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

ral History Museum Vienna does not lend syntypes out by the way of putting it in the mail, but the curator (Mag. Anita Eschner) studied the specimen that Sturany depicted in 1905. The measurements made by her revealed that Sturany's drawing is wrong, but his measurements are correct.

The number of prostate diverticles is not in every case a suitable distinguishing feature (see tab. 1) to discriminate *G. pamphylicus* from all other species mentioned above, because there are some overlaps, however, it is possible to separate it by means of the shell features. The species depicted in Fig. 3, which have a prominent body whorl like *G. pamphylicus*, are smaller in diameter, or the ratio of shell width to the height of the last whorl is different from *G. pamphylicus*.

The kidney margin of *G. pamphylicus* is undulated, the stylet is long (Fig. 2.4), and so are the prostate diverticles. According to MEIER-BROOK (1984), this species should belong to the subgenus *Torquis*. On the other hand, the kidney might have contracted, caused by ethanol, and so it might be that the kidney margin *in vivo* is straight, and in this case not all anatomical features would be appropriate to identify the subgenus group to which the new *Gyraulus* belongs.

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