

**New and little-known Clausiliidae (Gastropoda Pulmonata)  
from eastern Turkey**

M. SZEKERES

Alföldi u. 16, H-6725 Szeged, Hungary

*Cristataria colbeauiana inversa* n. ssp. and *Roseniella nemethi* n. sp. are introduced as new taxa from eastern Turkey and their systematic position is discussed. The genital morphology of *Pontophaedusella ofensis* Nordsieck is presented, with comments on its relevance to the phylogenetic status of this clausiliid of the *Serrulina* group.

Key words: Gastropoda, Pulmonata, Clausiliidae, *Cristataria*, *Roseniella*, taxonomy, Turkey.

In the past couple of years our knowledge about the Clausiliidae fauna of Turkey has increased significantly. Since the publication of a comprehensive overview by Bank & Menkhorst (1994), more than 45 new species taxa have been described and considerable efforts have been made to improve our understanding of the phylogenetic relationships and biogeographical significance of Turkish Clausiliidae. This paper is a contribution to this ongoing work by providing the description of new taxa which were collected during a field trip made by Mr. L. Németh and myself in 1996.

Alopiinae

***Cristataria colbeauiana inversa* n. ssp. (fig. 1)**

Material. — Limestone cliffs at 370 m alt. in a gorge 1 km S. of Harbiye (S. of Antakya), BA41. The holotype is in the collection of the Hungarian Natural History Museum (Budapest); paratypes (471) are in the collections of the Hungarian Natural History Museum (2), the Nationaal Natuurhistorisch Museum, Leiden (NNM 57265/2), the Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main (SMF 311774/2), and those of L. Németh and the author.

Diagnosis. — A sinistral subspecies of *Cristataria colbeauiana* (L. Pfeiffer, 1861) with a more prominent sculpture and the lunellar region positioned relatively close to the aperture. Differs from *Cristataria intersita* Németh & Szekeres, 1995, by its larger, darker and more conspicuously sculptured shell, and the broadly curved lamella subcolumellaris.

Description. — The sinistral shell has 10½-12 whorls and is tumid, with a dark violet-brown colour. The whorls are opaque, finely but regularly costate, and separated by a whitish, papillate suture. At the neck, the last whorl forms a broad ridge, which runs parallel with the peristome. The shape of the neck is further modified by a basal crest and a less conspicuous dorsal one. Shell dimensions: 19.2-23.6 x 4.3-5.0 mm.

The aperture is wide, with a light-brown, thickened margin, which stands apart from the adjacent part of the last whorl. The lamella superior is short, low, often slightly S-shaped. The lamella spiralis starts at its inner end and extends to the lateral side. The lamella inferior runs relatively high. The lamella subcolumellaris forms a broad curve at its lower end. The plica principalis starts dorsally and ends near the peristome. The



Figs. 1-2. Eastern Turkish Clausiliidae shells (x 3). 1, *Cristataria colbeauiana inversa* n. ssp., holotype; 2, *Roseniella nemethi* n. sp., holotype.

hyperbolic lunella is situated dorsally or slightly shifted towards the aperture, so that its lower part is often visible in front view. In continuation of the lower, widened end of the lunella, a rudimentary front part of the plica basalis is often present. The clausilial blade is strongly curved, elongated, with moderately pointed apex.

Notes. — This new *Cristataria* is a member of the group of *C. delesserti* (Bourguignat, 1853), outlined by Nordsieck (1971). Its conchological features, as well as its occurrence just 8 km south of Antakya, attest to its close relationship with *C. colbeauiana*, which is the only known member of the genus with a dextral shell. Thus the new subspecies can be regarded as a link with the sinistral representatives of the *C. delesserti* group, most of which are distributed in Lebanon and Syria. However, at least one more species of that group, the recently described *C. intersita*, reaches the Mediterranean coast of Turkey near Samandağ, only about 20 km southwest of Harbiye. This form can be easily distinguished from *C. c. inversa* by its smaller, more slender, horn-coloured shell, the smooth surface, and the less pronounced arc of the lamella subcolumellaris.

Etymology. — The epithet *inversa* refers to the coiling, which is opposite to that of the nominate subspecies.

#### Mentissoideinae

##### **Roseniella nemethi** n. sp. (fig. 2)

Material. — Volcanic cliffs at 700 m alt. in a gorge 7 km E. of Ardanuç, along the

road to the Yanlıçam pass, KL55. The holotype is in the collection of the Hungarian Natural History Museum (Budapest), paratypes (91) are in the collections of the Hungarian Natural History Museum (1), the Nationaal Natuurhistorisch Museum, Leiden (NNM 57266/2), the Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main (SMF 311775/2), and those of L. Németh and the author.

**Diagnosis.** — The shell is smaller and more clearly striate than that of *Roseniella sobrievskii* (Lindholm, 1913), without a white sutural band; basal fold missing or rudimentary at most.

**Description.** — The elongated, chestnut-brown shell consists of 14½ -16½ whorls. Its surface is almost smooth, with a fine, irregular sculpture which changes to fine, regular ribs over the ultimate whorl. The suture is inconspicuous and rather shallow. The neck is costate, with a strong crest at its basis. The peristome is oval, thin, with a narrow brown rim. The specimens measure 22.0-26.1 x 3.6-3.9 mm.

The lamella superior is long and often reaches beyond the outer end of the spiralis. The lamella spiralis emerges gradually and continues to the lateral side. The outer end of the weak lamella inferior is situated high in the aperture. It is either visible in a perpendicular view or hidden by a widening of the peristome at the columellar side. The lamella subcolumellaris, invisible from the outside, runs along the basal crest. The plica principalis runs from behind the peristome to the dorsolateral region; the dorsal, straight lunella is usually somewhat separated from it. At its broadest top end a reduced upper palatal fold is often recognizable. The basal fold is either absent or represented only by a very weak subcaustralis, which is attached to the basal part of the lunella. The clausilial blade is narrow, with parallel sides and a rounded apex.

**Notes.** — This new species was collected at a site which was published (Neubert, 1994) as the locus typicus of *Armenica disjuncta acuta* Neubert, 1994. We found the latter clausiliid in the same gorge, 5 km east of Ardanuç at an altitude of 550 m, living exclusively on limestone cliffs. By contrast, *Roseniella nemethi* lives on volcanic rocks which dominate the upper section of the valley. Thus the distribution area of this species is separated from that of *R. sobrievskii*, occurring on limestone west of Ardanuç, by the range of *A. d. acuta*, and is correlated with a change in the geological conditions. The occurrence of *R. nemethi* on volcanic rocks raises the question whether it might be only an ecological variant of *R. sobrievskii*, determined by the lime-deficient biotope. The relatively small and thin shell seems to support this view, but *R. nemethi* differs from *R. sobrievskii* in several other shell characters, including those of the sculpture and the clausilial apparatus. This, in combination with the fact that the new form could not be found on the adjacent limestone cliffs, strongly suggests that it should be regarded as a separate species occupying a different ecological niche.

**Etymology.** — The new species is named after Mr. László Németh, who has made a significant contribution to the study of the Turkish Clausiliidae fauna.

#### Phaedusinae

##### *Pontophaedusella ofensis* Nordsieck, 1994

This species has been described on the basis of only three specimens. As only empty shells were available, the anatomy could not be studied (Nordsieck, 1994). Recently we have collected a live specimen of this subterranean species at the locus typicus, 2 km SW. of Of, from cavities among humus-covered andesite rocks at a depth of about 20 cm. This specimen provided an opportunity to carry out anatomical studies on this narrowly endemic species.

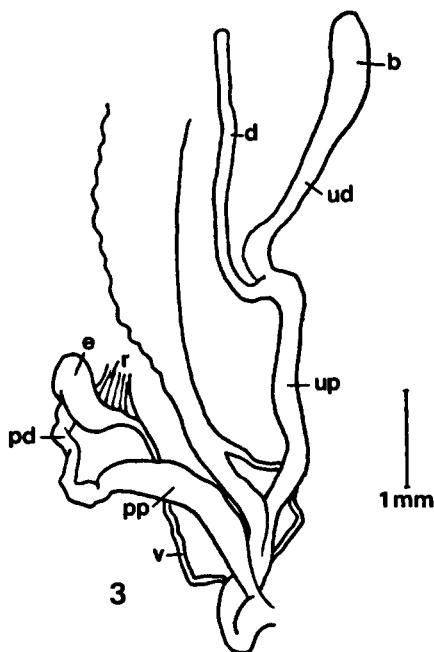


Fig. 3. Genital morphology of *Pontophaedusella ofensis* Nordsieck, 1994, from the type locality. Abbreviations: b, bursa of the bursa copulatrix; d, diverticulum of the bursa copulatrix; e, epiphallus; pd, distal part of the penis; pp, proximal part of the penis; r, retractor muscle; ud, distal part of the pedunculus; up, proximal part of the pedunculus; v, vas deferens.

Extant members of the group of *Serrulina* Mousson, 1873, represent characteristic Tertiary relicts showing a remarkable diversity (including four endemic genera: *Nothoserrulina* Németh & Szekeres, 1995, *Pontophaedusa* Lindholm, 1924, *Pontophaedusella* Nordsieck, 1994, and *Truncatophaedusa* Majoros, Németh & Szili-Kovács, 1994) along the extremely temperate southeastern coast of the Black Sea. Clarification of the phylogenetic relationships between the various genera is hindered by the scarcity of data concerning their genital structures. In this respect anatomical data concerning *Pontophaedusella* seem to be especially interesting because on the basis of its shell features this genus is considered closely related to *Laeviphaedusa* Likharev & Steklov, 1965, and *Microphaedusa* Nordsieck, 1978, endemic genera of northern Iran (Nordsieck, 1978, 1994).

The genital morphology of *Pontophaedusella ofensis* is shown in fig. 3. The male part is characterized by a penis composed of a proximal and a distal part of the same length, the former being wider than the latter. The epiphallus is short, the musculus retractor penis is broadly attached to it, inserting near the beginning of the vas deferens. The pedunculus is provided with a large lumen; the diverticulum reaches as far as the bursa. The proximal part of the pedunculus is longer than the distal part. The genital features show the greatest resemblance to those of the shell-morphologically similar *Pontophaedusa funiculum*, which has a very similar structure of the proximal part of the penis, the

epiphallus and the retractor penis. *Pontophaedusella*, however, possesses a more elongated distal part of the penis and a relatively shorter diverticulum. The latter feature distinguishes this genus from the other genera within the *Serrulina* group, except for *Caspiophaedusa* Lindholm, 1924. *Pontophaedusella* seems to be closely related to *Pontophaedusa*, whereas both genera may be phylogenetically linked to *Laeviphaedusa* and *Microphaedusa*, which are assumed to be close to *Pontophaedusella* on the basis of their shell characteristics.

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