Földtani Közlöny 136/2, 399–406. (2006) Budapest

Contributions to the knowledge of the Triviidae. XVII. A new Middle Miocene (Badenian) Trivia species (Mollusca: Gastropoda) from Borsodbóta (Hungary)

Új Trivia-faj (csiga) a borsodbótai középső-miocén (badeni) korú rétegekből

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(2 tábla)

Keywords: Mollusca, Gastropoda, Triviidae, Middle Miocene, Central Parathetys, Hungary
Tárgyszavak: Mollusca, Gastropoda, Triviidae, középső-miocén, Középső-Parathetys, Magyarország

Összefoglalás

Az észak-magyarországi Borsodbóta község területén fellelhető középső-miocén képződmények gazdag faunáját számos kutató vizsgálta az elmúlt évtizedekben (KUTASSY 1928; CSEPREGHY-MEZNERICS 1969a, 1969b, 1970).

A „bótai törpe-fauna" összehasonlítva a Középső-Parathetys hasonló korú többi lelőhelyével egyedülállóan gazdag Trivia-félékben – mind a fajok száma, mind a fajokon belüli egyedszám alapján. Az elmúlt évek során a „királdi útbevágás" még hozzáférhető szakaszán előkerült nagyszámú ismert *Trivia*-féle között egy eddig ismeretlen faj számos példányát sikerült begyűjteni, amelyet jelen cikkünkben *Trivia eszterae* sp. nov. néven tárgyalunk és írunk le.

Abstract

A new Middle Miocene (Badenian) *Trivia* species of the Central Paratethys from Borsodbóta, Hungary is described. Comparisons are made with similar species from the Early Miocene of France, Badenian deposits of the Central Paratethys of Austria and Romania, and from the early Middle Miocene (Langhian) of Poland.

Introduction

Classification of the European Triviidae of the Miocene have not yet been revised. Most species are characterized by a dorsal sulcus or at least by a dorsal depression that effects the ribs. Their shell morphology is more or less similar to *Niveria nix* (SCHILDER 1922) – the type species of the genus *Niveria* JOUSSEAUME, 1884 (syn. *Sulcotrivia* SCHILDER 1933) – and those species are, therefore, assigned to that genus (FEHSE 2002). On the other hand there are not many species without any dorsal depression and those that are in this category resemble *Trivia monacha* (DA COSTA 1778) – the type species of the genus *Trivia* BRODERIP 1837. The species of the European Miocene that are assigned to the genus *Trivia* are *T. antiquosphaera* SACCO 1894, *T. burdigalensis* (D'ORBIGNY 1852), *T. densecostata* SCHILDER 1929, *T. dertonensis* (MICHELOTTI 1847), *T. grateloupi* SCHILDER 1941 (*T. vivesi* DOLIN 1998 is a junior

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synonym), *T. nana* SCHILDER 1941, *T. westphalica* SCHILDER 1929 and *T. zimmermanni* KOCH 1862). Almost all species are described from the French or Italian Miocene but there is not one from the Central Paratethyan Miocene except *Trivia selmae* BOETTGER 1901. More recent species demonstrate that many taxa have a wide range of distribution; for example, *T. monacha*: is known only from the British Islands, North Sea, the Netherlands, France, Spain, Portugal, northern West Africa, Canary Isles. to Western Mediterranean Sea. However, others are more restricted, with *T. lathyrus* (DE BLAINVILLE 1826) being known only from the northern and western parts of the Mediterranean Sea. Investigations indicate that similar conditions should be observable in Miocene species. Some species, such as *Niveria dimidiatoaffinis* (SACCO 1894) are found in the French and Italian Middle and Late Miocene and also in the Badenian of Romania, Austria, Hungary and Poland. Recently, one of the authors (ZV) discovered *Trivia* specimens from the Badenian of Borsodbóta, Hungary. Similar shells have never been found in Hungary and Western Europe (COSSMANN & PEYROT 1909–1935; CSEPREGHY-MEZNERICS 1954, 1969a, 1969b, 1970; GLIBERT 1952; STRAUSZ 1954, 1966). These specimens are characterized by a distinct dorsal hump that is usually found in recent species of the genus *Trivia*. The combination of the dorsal elevation with other shell features distinguish the Borsodbóta specimens from other Miocene taxa. Therefore, this species is described here as: *Trivia eszterae* sp. nov.

Abbreviations

CS – collection Franz Alfred SCHILDER, deposited in ZMB.
DFB – collection Dirk FEHSE, Berlin, Germany.
GIH – Geological Institute of Hungary.
MNHN – Muséum National D'Histoire Naturelle, Paris, France.
THH – collection Tamás Hirmetzl, Fót, Hungary.
ZMB – Zool. Museum für Naturkunde, Humboldt University, Berlin, Germany.
ZVH – collection Zoltán Vicián, Budapest, Hungary.
JGS – collection Jozef Grego, Banská Bystrica, Slovakia
ct – columellar teeth
lt – labral teeth
rr – dorsal ribs (compare FEHSE & LANDAU 2003)

Superfamily Trivioidea TROSCHEL 1863
Family Triviidae TROSCHEL 1863
Subfamily Triviinae TROSCHEL 1863
Genus: Trivia BRODERIP 1837

Type species: *Cypraea europaea* MONTAGU 1808 [= *Cypraea monacha* DA COSTA 1778] by original designation. Recent, Britain.

Trivia eszterae sp. nov.
Pl. 1, figs 1–3, pl. 2, fig. 1.

Holotype: Pl. 1, fig. 1 (GIH, M. 06. 24)
Paratype 1: Pl. 1, fig. 2 (GIH, M. 06. 25)

Type locality: Borsodbóta, "Királdi-útbevágás", county Borsod-Abaúj-Zemplén, Hungary.
Type stratum: Early Badenian, Middle Miocene. (CSEPREGHY-MEZNERICS 1969a, b, 1970)
Derivatio nominis: Named after the junior author's daughter, Ms. Eszter Vicián.

Shell formula: [8 (77–64) 20:19:20].

We have used the shell formula proposed by SCHILDER (1935: p. 327). This formula is derived from measurements taken from all available fully mature and normally formed specimens. It consists of the following elements: [L (W-H) LE:CE:RR]. [#] denotes that the teeth are partly absent or not countable for whatever reason. L: average length in mm, W: average width/length ratio in %, H: average height/ length ratio in %, LE: normalized number of labral teeth, CE: normalized number of columellar teeth, RR: normalized number of dorsal ribs. The normalized number of teeth – in relation to a shell of 10 mm length – is calculated as follows: T = 7 + [(c-7)*v (10/L)] T: normalized number of teeth or ribs, c: teeth or ribs counted, L: length.

Description:

The shell small sized, solid and ovate. Its spire is slightly elevated and covered by callus. Its body whorl sub-triangular, inflated and rounded, and represents about 90% of total height, both its terminals are towards posterior but only slightly. The tips of the terminals are slightly indented. The dorsum is highly elevated, with a hump mid-dorsally and without any sulcus or depression. Its ventrum is slightly convex with somewhat recurved terminals. Its aperture is narrow, somewhat semi-circular, and its widens slightly at the fossular section. Its labrum is roundly callused, narrow, curved, keeled towards its inner margin. The outer labral margin acutely shouldered. Labrum bears on its inner margin with 17–19 fine denticles. The denticles continue as fine folds onto the labrum, becoming broader onto the dorsum and ventrum, and then narrowing onto the columella and the fossula. Siphonal and anal canals follow the shell profile. The columella is concave, broad and it tapers steeply inwards. The parietal lip roundly callused and bears 16–19 fine ribs. The fossula is broadly concave, and it is not clearly delimited from the rest of the columella.The inner fossular and the columellar edge denticulated, covered by the labrum.

Variations

The development of the dorsal hump varies slightly. In some specimens is a callosity visible on the mid-dorsum. Some shells are somewhat more slender than others. The size varies between 6 and 10 mm. The dorsal ribs are sometimes broader than in other specimens.

Material and measurements

Total number of 14 specimens were examined in detail. This materials were collected by the junior author and Dr. Tamás Hirmetzl at Borsodbóta village during the years 2003 and 2005.

Holotype: L = 7.4 mm, W = 5.7 mm, D = 4.6 mm, ct 18, lt 19, rr 18 (GIH, M . 06. 24)
Paratype 1: L = 6.9 mm, W = 5.5 mm, D = 4.5 mm, ct 16, lt 17, rr – (GIH, M . 06. 25)
Paratype 2: L = 8.1 mm, W = 6.3 mm, D = 5.3 mm, ct 19 , lt 19, rr 20 (coll. DFB, No. 8482A)
Paratype 3: L = 8.4 mm, W = 6.5 mm, D = 5.4 mm, ct 18, lt 19, rr 18 (coll. DFB, No. 8482B)
Paratype 4: L = 8.1 mm, W = 6.2 mm, D = 5.3 mm, ct 18, lt 18, rr 20 (coll. ZVH, No. 201)
Paratype 5: L = 7.5 mm, W = 5.9 mm, D = 4.9 mm, ct 17, lt 17, rr 18 (coll. ZVH, No. 202)
Paratype 6: L = 9.5 mm, W = 7.3 mm, D = 6.0 mm, ct 19, lt 18, rr – (coll. ZVH, No. 203)
Paratype 7: L = 7.1 mm, W = 5.5 mm, D = 4.4 mm, ct 17, lt 19, rr 18 (coll. ZVH, No. 204)
Paratype 8: L = 8.1 mm, W = 6.3 mm, D = 5.3 mm, ct 17, lt 18, rr 18 (coll. THH, No. 0001/1)
Paratype 9: L = 8.0 mm, W = 6.2 mm, D = 5.2 mm, ct 17, lt 19, rr 18 (coll. JGS, unregistered)
Paratype 10: L = 7.7 mm, W = 6.0 mm, D = 5.0 mm, ct 18, lt 19, rr 18 (coll.THH, No.0001/2)
Paratype 11: L = 7.4 mm, W = 5.6 mm, D = 4.5 mm, ct 18, lt 19, rr 18 (coll. ZVH, No. 207)
Paratype 12: L = 7.5 mm, W = 5.8 mm, D = 4.7 mm, ct 17, lt 19, rr 18 (coll. ZVH, No. 208)
Paratype 13: L = 6.5 mm, W = 5.1 mm, D = 4.4 mm, ct 16, lt 17, rr 16 (coll. ZVH, No. 209)

Discussion:

Among the European Miocene species of the genus *Trivia* two groups can be distinguished by the shell outline. The first group has a somewhat circular outline whereas the second group has a more elliptical outline. The first group consists of *T. grateloupi*, (Pl. 2, figs 2, 4) *T. eszterae* sp. nov. (Pl. 1, fig 1–3; Pl. 2, fig 1) and *T. zimmermanni*. The second group includes *T. antiquosphaera, T. burdigalensis, T. densecostata, T. dertonensis, T. nana and T. westphalica*. This demonstrates that the new species is immediately be distinguished from the species of the second group by the shell outline only. However, *T. antiquosphaera* differs from *T. eszterae* sp. nov. by the convex ventrum, the obscured posterior terminal and the roundly elevated dorsum without a hump. *Trivia burdigalensis* has more numerous, close-set ribs that are slightly depressed mid-dorsally. In a similar way *T. densecostata* and *T. westphalica* differ from *T. eszterae* sp. nov. in this way and also by their very elongated shells. *Trivia dertonensis* is distinguished from the new species by its regularly elevated dorsum that lacks a hump and by a slight dorsal depression. *Trivia nana* has broad labrum with a less developed outer labral margin, more numerous, very close-set ribs on the dorsal centre; it is is easily distinguishable from *T. eszterae* sp. nov.

In the North Sea Basin existed *T. zimmermanni* that has a circular outline with obscured terminal projections and a very broad and thickened labrum. The aperture is very narrow and is centrally placed on the ventrum. All these features distinguish *T. zimmermanni* from the new taxon.

DOLIN (1998: p. 107, text figs. 11, 12) described *Trivia vivesi* (Pl. 2, fig 3) from the Aquitanian, Early Miocene of Meilhan (= St. Martin d'Onet), SW France without discussing *T. grateloupi* SCHILDER 1941. He only wrote, "... s'apparente à *T. (T.) grateloupi* ..." ["... related to *T. (T.) grateloupi* ..."]. In reality the holotype of *T. vivesi* is almost identical with the type of *T. grateloupi*. There are no features that would justify distinguishing both on either specific or sub-specific levels. Therefore, *T. vivesi* is a junior synonym of the latter. *Trivia grateloupi* is very similar to *T. eszterae* sp. nov. but can be distinguished by its less numerous broader ribs (14–16 in *grateloupi* vs. 16–20 in *eszterae*), lower number of labral denticles (14–16 in *grateloupi* vs. 17–19 in *eszterae*), a more centrally placed aperture, lesser developed terminal projections and the lack of a distinct dorsal hump.

Acknowledgements

We are very grateful to Dr. József KÓKAY for his help with information about the geology of locality involved in the research and his valuable suggestions which helped to improve the manuscript. We thank very much Dr. Johannes MAYER, Austria for his useful comments about the manuscript.

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Kézirat beérkezett: 2006. 03. 20.

Explanation of Plates

Plate 1

1. *Trivia eszterae* nov. sp. Holotype, (GIH, M . 06. 24), ×5, early Badenian, Middle Miocene, Borsodbóta, county Borsod-Abaúj-Zemplén, Hungary.

2. *Trivia eszterae* nov. sp. Paratype 1, (GIH, M . 06. 25), ×5, early Badenian, Middle Miocene, Borsodbóta, county Borsod-Abaúj-Zemplén, Hungary.

3. *Trivia eszterae* nov. sp. Paratype 4, coll. ZVH, No. 201, ×5, early Badenian, Middle Miocene, Borsodbóta, county Borsod-Abaúj-Zemplén, Hungary.

Plate 2

1. *Trivia eszterae* nov. sp. Paratype 5, coll. ZVH, No. 202, ×5, early Badenian, Middle Miocene, Borsodbóta, county Borsod-Abaúj-Zemplén, Hungary.

2. *Trivia grateloupi* SCHILDER, 1941 Holotype, CS, No. 3630, ´5 (L = 6.0 mm), "faluns de Touraine", Middle Miocene, "Touraine", France.

3. *Trivia vivesi* DOLIN, 1998 Holotype, MNHN (L = 10.0 mm), ×5, Aquitanian, Early Miocene, Meilhan (= St. Martin d'Onet), dép. Landes, France.

4. *Trivia* cf. *grateloupi* SCHILDER, 1941, coll. DFB, No. 5447-1 (L = 11.8 mm), ×5, Aquitanian, Early Miocene, Meilhan (= St. Martin d'Onet), dép. Landes, France.

Plate I

Plate II