MIDDLE MIOCENE FORAMINIFERA FROM ROMANIA: ORDER BULIMINIDA, PART II

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Abstract: This second paper on the order Buliminida is dedicated to the description and figuration of some species belonging to the superfamilies Turrilinacea (partly), Fursenkoinacea, Delosinacea, Pleurostomellacea, and Stilostomellacea. The specimens described in this paper come from the same locations as those described in the first paper on the Buliminida, that is outcrops and drillings from the south-western border of the Pannonian Basin, and outcrops from the northern and north-western part of the Transylvanian Basin.

Key words: Buliminida, Middle Miocene, Romania

SYSTEMATIC DESCRIPTIONS

Family UVIGERINIDAE HAECKEL, 1894
Subfamily Uvigerininae HAECKEL, 1894
Genus Uvigerina D'ORBIGNY, 1826

Uvigerina acuminata (pl. 7, fig. 1, 2)
Uvigerina acuminata HOSIUS, 1895, p. 167 (new name for U. aculeata Hosius, 1883, non d'Orbigny), p. 108, pl. 2, fig. 9; von Daniels, 1986, p. 92, pl. 5, fig. 1-8.
Remarks: The species was described from the Miocen (Reinbeckian) from Northern Germany. In the Carpathian area it occurs in the Middle Miocene deposits. Cicha et al. (1986) assign to this species a very large group of uvigerinas with variable morphology, including here morphotypes described as U. barbatula Macfadyen, U. uniseriata Jedlitschka and U. grilli Schmid.

Uvigerina asperula (pl. 7, fig. 3, 4)
Uvigerina asperula CZJZEK, 1847, p. 146, pl. 13, figs. 14, 15.
Remarks: Cushman & Edwards (1939, p. 36) suspected the two species described by Czjzek as U. asperula and U. orbignyana Czjzek, (1847, p. 146, pl. 13, figs.16, 17) were “varieties” of the species Uvigerina aculeata d’Orbigny. Papp & Turnovsky (1953, p. 127) consider U. asperula and U. orbignyana as synonymous and mentioned them as U. aculeata orbignyana Czjzek. Verhoeve (1970, p. 32) considers the two species as synonyms, representing a couple microsphaeric (U. asperula) and megalosphaeric (U. orbignyana). Another similar species, suspected to be a junior synonym is Uvigerina pudica Luczkovska (1955, p. 150, pl. 8, fig. 17), described from the same stratigraphic level as Czjzek’s species.
Range: Wielician.
Remarks. In our material there were recorded microspheric specimens (with acuminated apex) like in the type illustration and megalospheric specimens with rounded/blunt apex.

Uvigerina bellicostata LUCZKOWSKA, 1955 (pl. 7, fig. 5)
Uvigerina bellicostata LUCZKOWSKA, 1955, p. 150, pl. 8, figs 10-13: Popescu, 1979, p34, pl. 21, fig. 5.; Rögl, in Cicha et al., 1998, p. 133, pl. 51, figs. 9, 10.
Remarks. This species is typical for Upper Badenian (Kossovian) from Carpathian Area. It is characterized by high acuminated, non-continuous costae ornamentation. The species U. costatoides Papp & Schmid (1978) is suspected (Rögl, in Cicha et al., 1998, p. 133) to be a junior synonym.

Uvigerina lapugyensis n.sp. (pl. 7, figs. 6-8)
Diagnosis: Test free, elongated; early chambers triserially arranged, becoming pseudouniserial alternate in the adult; wall calcareous, finely perforated; chambers inflated, increasing gradually in size in the young stage; surface pustulated in the early stage, ornamented with longitudinal serrate, curved costae or small spines (in the initial part); aperture at the end of a short neck, larger at the base, surrounded by an everted lip; small rounded pores.
Holotype: Coll. LPB.IV, 11697; paratypes, Coll. LPB.IV, 11698
Type locality: Valea Cosului section, Lăpușiu de Sus (Hunedoara district, Bega Basin).
Age: Upper Langhian (Candorbulina universa/Globoturborotalita druryi Zone).
Remarks: This species is close to U. pygmoïdes Papp & Turnovsky differing only in ornamentation (serrate costae and pustulated intercostal surface). Papp & Schmid (1978, pl. 11, figs. 13, 14) figured a similar specimen as a transition from U. venusta to U. romaniaca.

Uvigerina macrocarinata PAPP & TURNOVSKY, 1953 (pl. 7, fig. 9, 10)
Uvigerina macrocarinata PAPP & TURNOVSKY, 1953, p. 123, pl. 5B, figs. 1-3; Papp, 1963, p. 249, pl. 4, figs. 6-10; Papp & Schmid, 1976, p. 280, pl. 9, figs. 1-4, pl. 11, figs. 2-4; Rögl, in Cicha et al., 1998, pl. 134, pl. 51, figs. 3, 4.
Remarks: Typical specimens occur in the Lower Lagenide Zone, characterized by its heavy costate
ornamentation and relatively shorter neck. The species is closely related to *U. acuminata*; between the two species there is a continuous series of morphotypes as the one between *U. acuminata* and *U. uniseriata*. Stratigraphically, the occurrence of typical specimens of *U. macrocarinata* is immediately above *U. uniseriata*.

*Uvigerina perornata* PISHVANOVA, 1960  
(7, pl. 11) *Uvigerina perornata* PISHVANOVA, 1960 (in Subbotina et al., 1960), p. 195, pl. 7, fig. 11; Pishvanova, 1972, p. 267, pl. 21, fig. 9.

Remarks: Rare, strong costae, sometimes curved, which do not pass on the next chamber. The short neck is set in a depression. This is a typical species for Upper Badenian from Paratethys.

*U. perornata* is close to *U. bellicostata* Luczkowska, differing in thick and less elevated costae and to *U. macrocarinata*, from which differs in less heavy costae, which do not cross the sutures.

*Uvigerina? pygmoïdes* PAPP & TURNOVSKY, 1953  
(7, pl. 12) *Uvigerina pygmoïdes* PAPP & TURNOVSKY, 1953, p. 131, pl. 5/c, fig. 4; Papp & Schmid, 1978, p. 282, pl. 10, figs. 1-3; Cicha et al., 1986, p. 172, pl. 19, figs. 1-5.

Remarks: Test large and stout, chambers inflated, sutures deep, surface smooth, pores rounded, short and broad neck and strongly folded apertural inner tooth plate attached to margins of previous foramen (like in *Neouvigerina*) are the main features of this species. In our opinion, the species must be assigned to *Neouvigerina*.

Range: In Paratethys was mentioned from the Lower Badenian. Our illustrated material is coming from Lâpuigu de Sus and Coștei (Banat) from the Upper Langhian (N 9 Zone). The best conserved specimens were found in samples collected in Valea Cipkes, Notelec, Cluj district.

*Uvigerina romaniaca* PAPP & SCHMID, 1978  
(7, fig. 13, 14) *Uvigerina romaniaca* PAPP & SCHMID, 1978, p. 283, pl. 11, figs. 15-17.

Remarks. This species was described from the Central Paratethys by Luczkowska (1955, p. 116, pl. 8, fig. 9) and Popescu (1979) as *U. hispidocostata* Cushman & Todd. The test is small and delicate; test has a fusiform shape; surface pustulated ornamented with fine tuberculate costae in younger stages, pustulate hispide in the adult; aperture at the end of a long, slender, pustulated neck.

Range: Upper Badenian (Kossovian). The holotype is coming from Valea Morilor section (Colibași, western Oltenia).

*Uvigerina striatissima* PERCONIG, 1955  
(7, figs. 15, 16) *Uvigerina striatissima* PERCONIG, 1955, p. 177, pl. 3, figs. 1-4; Borsetti et al., 1986, p. 208, pl. 7, fig. 2.

Test large and stout; chambers inflated, triserial throughout; periphery lobate; sutures distinct, depressed; surface ornamented with numerous, low costae which cross the sutures; wall calcareous with numerous rounded irregularly distributed pores; aperture at the end of a neck, set into a depression.

Remarks: This species is similar with *U. laviculata* Coryell & Rivero (a possible junior synonym, see Boersma, 1984, p. 92). Another similar species is *U. longistriata* Perconig, 1955 from which differs in more numerous and lower costae. In Paratethys similar specimens were mentioned as *U. semiornata semiornata* (Cicha et al. 1986, pl. 8, only fig. 1).

Range: Middle Miocene to Pliocene. In Paratethys, specimens assigned to *U. striatissima* were recorded only in the Lower Badenian.

*Uvigerina uniseriata* JEDLITSCHKA, 1932  

Remarks. Typical specimens of *U. uniseriata* were recorded only in the Lower Moravian deposits (Lower Badenian), belonging, biostratigraphically to Zone N8. Thus, this morphotype seems to be restricted to a short interval. In Vienna Basin, *U. uniseriata*, mentioned by Papp (1963) as *U. uniserialis*, err. cit.) was recorded in Laaer Series (Papp, 1953, p. 249, pl. 4, figs. 1-5).

The species is close to *Uvigerina uniserialis* LeRoy (1944) described from Miocene deposits of Central Sumatra. This last species seems to be a junior synonym.

*Uvigerina urnula* d’ ORBIGNY, 1846  
(7, figs. 18-20) *Uvigerina urnula* d’Orbigny, 1846, p. 189, pl. 11, figs. 21, 22; Cushman & Edwards, 1939, p. 34, pl. 8, figs. 19-26; Verhoeve, 1970, p. 33, pl. 2, fig. 14, pl. 3, figs. 1, 2; Haunold, 1995, p. 72, pl. 1, fig. 1-10;

Remarks. This species has a highly variable shape of the test and ornamentation. It is difficult to distinguish species as *U. urnula* d’Orb., *U. brunensis* Karrer, *U. cochlearis* Karrer or *U. semiornata karreri* Papp & Turnovsky. Cushman &
Edwards (1939) as first revisers of the species consider *urnula* as central species and *semiornata* as a variety. Verhoeve (1970) considers *urnula* and *semiornata* are synonyms. Papp & Schmid (1985) and von Daniels (1986) include *U. urnula* in the synonymy of *U. semiornata*. Haunold (1995) includes species *semiornata*, *grilli*, *karreri*, *brunensis*, *cochlearis* and *aculeata* in the synonymy of *urnula*. They differ only in the sizes and ornamentation of the test.

Range: *U. urnula* is a common species in the Badenian deposits from Romania.

Subfamily Angulogerininae GALLOWAY, 1927
Genus Angulogerina CUSHMAN, 1927

*Angulogerina angulosa* (WILLIAMSON), 1858
(pl. 8, fig. 1-3, 6)

*Angulogerina angulosa* (Williamson). Hottinger, Halicz & Reiss, 1993, p. 100, pl. 126, figs. 1-7; Rögl, in Cicha et al., 1998, p. 80, pl. 54, figs. 3-6.

Test small, elongate, triangular in transverse section; chambers arranged triserially in the initial part then with tendency to become uniserial; suture depressed; surface ornamented with longitudinal costae; aperture terminal, ovate.

Common species in pelitic distal shelf deposits in Badenian. The illustrated material was recorded from Valea Gemini section, Coștea, Timiș district.

*Angulogerina alticarinata n. sp.*
(pl. 8, figs. 4, 5, 7-9, 12, 13)

Test small to medium, short, triangular in transverse section; chambers arranged triserial throughout; suture depressed, covered by thin, high, serrate, irregular costae; the angle of the test carinate; aperture terminal, rounded to ovate at the end of a large, truncate cone. No observations on the inner structure of the tooth plate.

Remarks. Similar specimen was assigned by Poignant & Pujol (1976, pl. 8, fig. 9) to *Trifarina hyramensis anfracta* Todd.

Our illustrated specimens (deposited in Coll. LPB.IV, 11701) were recorded from Moravian (Langhian) deposits in Valea Coșului section, Lăpușiu de Sus, Hunedoara district.

Family Reusselidae LOEBLICH & TAPPAN, 1961
Genus Fijiella LOEBLICH & TAPPAN, 1961
Fijiella cribrocostata n.sp.
(pl. 9, figs. 3-6)

Test free, large, pyramidal, triserial, triangular in transversal section; acute edges, spine; the chambers grow gradually, triangular in apical view; sutures limbate, curved, bordered by larger pores compared with those on the test surface; aperture slightly depressed, and primary aperture an elongated slit, inneriomarginal; in adult stage multiple circular openings, bordered by high hyaline lips.

Remarks: In the specimens whose last chamber was removed the apertural face has prominent costae, disposed parallel to the primary aperture from the base of the last chamber.

Holotype: Col. LPB.IV, 11702, figured in pl. 9, fig. 6; paratypes: Coll. LPB.IV, 11703.

The name of the species comes from the aspect of the apertural face (cribrated and/or costated).

Type locality: Coștea, Valea Gemini section.
Age: Upper Moravian (Upper Langhian), Zone Candorbulina universa/ Globoturborotalita druryi.

**Genus Parareussella** n.g.
Test prismatic, triserial, triangular in transverse section; chambers grow rapidly in the early stage, then constantly, with parallel margins in the adult; sutures slightly depressed, distinct, oblique; wall calcareous, perforated, with large pores near the keeled margins and sutures; aperture terminal, ovate, bordered by a thin lip; inner folded tooth plate connecting the aperture with the previous one.

Type species: *Parareussella prismatica* n.sp.
Remarks: Differs from *Fijiella* and *Reussella* by its prismatic form, parallel margins and the shape of the aperture.

*Parareussella prismatica* n.sp.
(pl. 9, figs. 12-14)
Test small, triangular, prismatic, with keeled margins, sometimes toothed; early chambers grow rapidly, and then constantly; early part acuminated to microspheric specimens, rounded to the microspheric ones; wall calcareous; sutures slightly depressed, distinct, slightly curved and oblique, limbate and depressed; surface smooth, perforated with large pores near the sutures and keel; aperture terminal, ovate, near the base of the apertural face, bordered by a thin lip; inner folded tooth plate connecting the aperture with the previous one.

Holotype: Coll. LPB.IV, 11704, figured in pl. 9, fig. 12.
Type locality: Coștei, Valea Gemini section.
Age: Upper Moravian (Upper Langhian) (Zone N 9, Candorbulina universa/ Globoturborotalita druryi).

**Genus Reussella** GALLOWAY, 1933
*Reussella spinulosa* (REUSS), 1850
*Verneuilina spinulosa* REUSS, 1850, p. 374, pl. 47, fig. 12; Karrer, 1868, p. 126.
*Reussella spinulosa* (Reuss). Cushman, 1945, p. 33, fig. 8, 9.

Common species in the Langhian deposits from Lăpușiu de sus and Coștei and very rare in Buitur (upper Kossovian). In Paratethys occurs only in Badenian deposits.

*Reussella pulchra* CUSHMAN, 1945
(pl. 9, fig. 8-11)

The holotype was described from the Baden Tegel, Vienna; Cushman mentioned this species at Nussdorf (Austria), Coștei, Buitur (Romania), Dingden (Germany). Very similar specimens occur in the Miocene and Pliocene from Australia and Philippines.

Superfamily **FURSENKOWNACEA**, LOEBLICH & TAPPAN, 1961
Family **Fursenkoinidae**, LOEBLICH & TAPPAN, 1961

**Genus Fursenkoina**, LOEBLICH & TAPPAN, 1961

Fursenkoina schreibersiana CZJEK, 1847
(pl. 9, fig. 7)
Virgulina schreibersiana CZJEK, 1847, p. 147, pl. 13, figs. 18-21; Cushman, 1937, p. 18, pl. 2, figs. 11-20
This species occurs sporadically in our material collected from the Middle and Upper Badenian.

Genus **Sigmavirgulina**, LOEBLICH & TAPPAN, 1961

*Sigmavirgulina tortuosa* (BRADY), 1881
(pl. 9, fig. 15, 16)
*Bolivina tortuosa* BRADY, 1884, p. 420, pl. 52, figs. 31, 32; Cushman, 1937, p. 133, pl. 17, figs. 11-19.
Remarks. Sigmavolino initial chamber, twisted test and “granular wall texture”, are the most important features in separating this species from genus *Bolivina*.

In Romania occurs in Moravian and Wielician deposits from north-western Transylvania and Banat. Well preserved specimens were recorded from Valea Gemini section, Coștei, Timiș district.

Family **VIRGULINELLIDAE**, LOEBLICH & TAPPAN, 1961

**Genus Virgulinella** CUSHMAN, 1932

Virgulinella pertusa (REUSS), 1860
(pl. 10, fig. 1, 2)
Virgulina pertusa REUSS, 1860, pl. 362, pl. 2, fig. 16 (fide Ellis & Messina, 1940 et seq.).
Virgulinella (Virgulinella) pertusa Reuss. Cushman, 1937, p. 31, pl. 5, figs. 6-9.
Remarks: This taxon occurs very rarely in our material. There were some records in pelitic material. There were some records in pelitic deposits from the Upper Langhian from the eastern border of the Pannonian realm.

Our specimens differ from the typical *V. pertusa* having some affinity with *V. fragilis* Grindell & Collen described from New Zealand (see Loeblich & Tappan, 1988, p. 153, pl. 579, figs. 16-19).

Range: Lower and Middle Badenian (Langhian-early Serravallian).

Superfamily **DELOSINACEA**, PARR, 1950
Family **Baggatellidae** N.K.BYKOVA
Subfam. **Baggatellinae** BYKOVA, 1959

**Baggatella** vs. **Caucasina**

**Baggatella** Howe, 1939 was treated by Popescu & Iva (1971) as senior synonym of **Caucasina** Khalilov (1951). In their opinion the type species of **Bagatella**, **B. inconspicua** Howe, 1939, represents in fact only the initial stage of a specimen. Initial stage of some “**Caucasina**” can be assigned to this genus. In the Carpathians there were found two short stratigraphic intervals rich in **Baggatella**: in the Upper Oligocene (Chattian) and in the Middle Miocene (Kossovian). Here, in the same sample with **Baggatella** coexist numerous
specimens of “Caucasina” in different ontogenetic stages.

Genus Baggatella HOWE, 1989
Baggatella elongata (d’Orbigny), 1826
(pl. 10, fig. 14)

Bulimina elongata d’Orbigny, 1826, An. Sci. Nat., 7, p. 269, no. 9 (fide Ellis & Messina); d’Orbigny, 1846, p. 187, pl. 11, figs. 19, 20; Luczkowska, 1955, p. 110, pl. 7, fig. 8.

Baggatella elongata (d’Orb.). Popescu, 1979, p. 32, pl. 19, figs. 4-6, pl. 21, fig. 2.

Range: Miocene. In Romania is frequent in Kossosovia deposits and rare in lower Miocene from Transylvania (Chechiş Formation, Burdigalian) and Lower Badenian (Langhian).

Baggatella gutschulica (LIVENTHAL), 1953
(pl. 10, figs. 3-7)

Baggatella gutschulica LIVENTHAL, 1953, p. 181, pl. 7, figs. 11-20.

Caucasina schischkinskya Venglinski, 1958 (non Samoilova) p. 135, pl. 29, figs. 6-9.

Caucasina laolovi Venglinski, 1962, p. 109, pl. 17, fig. 4.


The species is frequent in the Badenian deposits from Paratethys, especially in its upper part (Kossovian). In Romania occurs in Subcarpathians and on the eastern border of the Pannonian Depression.

Baggatella lappa (CUSHMAN & PARKER), 1937
(pl. 10, fig. 13)

Bulimina elongata d’Orbigny var. lappa CUSHMAN & PARKER, 1937, p. 51, pl. 7, fig. 8; Marks, 1951, p. 57, pl. 7, fig. 14; Verhoeve, 1970, p. 32, pl. 2, fig. 7.

The species is common in the normal marine Middle Miocene pelitic facies from north-western Transylvania, eastern border of the Pannonian Depression and Subcarpathians. Differs of B. elongata in bluntly, coarsely pustulate, rounded base.

Baggatella subulata (CUSHMAN & PARKER), 1937
(pl. 10, figs. 8-11)

Bulimina elongata d’Orbigny var. subulata CUSHMAN & PARKER, 1937., p. 51, pl. 7, fig. 6, 7; Marks, 1951, p. 57, pl. 7, fig. 13; Verhoeve 1970, p. 32, pl. 2, fig. 8; Rogl, in Cicha et al., 1998, p. 87, pl. 46, figs. 15-19.

In this species, the “discorbine” stage is followed by globular chambers, with constant sizes, arranged in a high spire with a reduced (3) number per whorl. Its base is provided with short, stout, spines. In some specimens referred to this species (pl. 10, figs. 12, 15-17), the post “discorbine” stage is followed by more globular chambers increasing in size as added, sutures more depressed and a zigzag disposition of the columellar tooth plates.

Superfam. PLEUROSTOMELLACEA REUSS, 1860
Fam. Pleurostomellidae REUSS, 1860

Subfam. Pleurostomellinae REUSS, 1860
Genus Delphinoideal lappiscus POPESCU, 1992
Delphinoideal rostrata POPESCU, 1992
(pl. 11, figs. 11-15)

Delphinoideal rostrata POPESCU, 1992, p. 46, pl. 1, figs. 1-9; pl. 2, figs. 1-6.

Test small, ovoidal; chambers arranged pseudouniserial, alternating in orientation by 180°, every new chamber enveloping the rest of the test; aperture slit-like curved along the rostrum and two slit-like openings near the base of the rostrum; wall calcareous; inner hemitube extending between successive apertures.

Remarks: This very rare species was recorded from Middle Badenian deposits. Usually, there are megalospheric specimens made up of 2, 3, and very rarely of 4 or more chambers. It was recorded one microspheric specimen which differs from the megalospheric ones by the dimension of the initial chamber, more chambers (8-9), and fusiform shape (acuminated initial part).

Paratypes: Coll. LPB.IV, 11705.

Genus Nodosarella RZEHAK, 1895

Remarks: Nodosarella was restricted by Cushman (1959) to the species having a short biserial stage; Loeblich & Tappan (1964) demonstrated that the type species is uniserial throughout; thus, the genera Ellipsonodosaria Silvestri, 1900 and Lingulonodosaria Silvestri, 1900 become junior synonyms.

Nodosarella rotundata (d’Orbigny), 1846
(pl. 11, fig. 16, 17)

Lingulina rotundata d’Orbigny, 1846, p. 61, pl. 2, figs. 48-51; Karrer, 1866, p. 166.

Test uniserial; chambers inflated separated by deep horizontal sutures; wall calcareous, finely perforated; aperture terminal, slit-like, bordered by a faint lip, sometimes slightly asymmetrical.

Remarks: the lectotype of this species was selected and designated by Loeblich & Tappan (1964, p. C730, fig. 594/10) from d’Orbigny’s collection in Paris.

Range: Upper Langhian.

Genus Pleurostomella REUSS, 1860
Pleurostomella alternans SCHWAGER, 1866
(pl. 11, figs. 1, 2)

Pleurostomella alternans SCHWAGER, 1866, p. 238, pl. 6, figs. 79, 80; Rogl, in Cicha et al., 1998, p. 118, pl. 55, figs. 10-12.

Very rare species in Lower Badenian. Some specimens were recorded from Lâpugiu de Sus and Costești and very rare in north-western Transylvania (Popești, near Cluă).
The name wants to suggest the evolution of the shape during ontogenetic development.

Remarks. This species is close to *Pleurostomella parviapertura* Kennett, (1967, New Zealand Jour. Geology Geophysics, 10/4, p. 1007, 1008, text-figs. 25, 26, fide Ellis & Messina), described from Miocene deposits of New Zealand and also found in Argentina in Middle Miocene (Boltkovskoy, 1981, p. 406, pl. 6, figs. 3, 4). Our species differs of *P. parviapertura* in the presence of a lobate suture line and larger aperture.

**Superfamily. STILOSTOMELLACEA FINLAY, 1947**

**Fam. Stilostomellidae FINLAY, 1947**

**Genus Orthomorpha STAINFORTH, 1952**

**Orthomorpha columella** (KARRER), 1877

(pl. 11, figs. 6, 18-20)

*Nodosaria columella* KARRER, 1877, p. 379, pl. 16, fig. 21.

Remarks: In the marine Middle Miocene deposits from Romania the following species were recorded: *O. columella* (Karrer), *O. jeditichskai* (Thalmann) and *O. challengeriana* (Thalmann) (see Popescu, 1975, p. 58, 59).

The differences between the mentioned species are not very important. Thus, *O. challengeriana* has inflated chambers, slightly elliptical and with longitudinal costae, less pronounced, unlike *O. columella* which has the chambers slightly elongated, subrectangular. *O. jeditichskai* has a test with a similar shape as *O. challengeriana*, but differs from this one by the fact that the test ornamentation is hardly visible or missing.

A very close species (senior synonym?) to Karrer’s species is *Orthomorpha perversa* (Schwager) in: Schwager, 1866, p. 212, pl. 4, fig. 29.

**Genus Stilostomella GUPPY, 1894**

**Stilostomella adolphina** (d’Orbigny), 1846

(pl. 12, figs. 1, 2)

*Dentalina adolphina* d’ORBIGNY, 1846, p.50, pl. 2, fig. 18-20

**Stilostomella adolphina** (d’Orb.). Rogl in: Cicha et al., 1998, p. 128, pl. 56, fig. 6

Common species in the Lower and Middle Miocene in Carpathians area.

**Stilostomella subspinosa** NEUGEBOREN, 1856

(pl. 12, figs. 3-7)

*Dentalina subspinosa* Neugeboren, 1856, p. 88, pl.4, figs. 8, a & b.

Test uniserial, slender, curved; chambers globular, slightly elongate in the adult; surface rough, covered by axial-elongated pores each of them containing, near the base of chamber, a pseudo-spine; aperture terminal, rounded, at the end of a long, slender neck, provided with apertural tooth.

Remarks. A close species is *Dentalina scripta* d’Orbigny (1846, p.51, pl. 2, figs. 8-11). As the lectotype (see Papp & Schmid, 1985, p.31, pl. 15, figs. 8-11) was designated a broken specimen accompanied by a short description. Differs of *S. subspinosa* in having elliptical, elongated chambers and circular pores.

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