BENTHIC CALCAREOUS FORAMINIFERA FROM THE LOWER CRETACEOUS DEPOSITS – SOUTHERN DOBROGEA – ROMANIA
II - Spirillinida and Rotaliida (Placentulinae)

Theodor NEAGU¹ & Pamfil CÎRNARU¹

Abstract: The very rich and well-preserved material made possible a detailed study of morphology and taxonomy of some Early Cretaceous genera from Spirillinids and Rotaliids. The paper describe the following taxa:
- from Suborder Involutinina: Planispirillina dobrogiaca n.sp.;
- from Suborder Spirillinina: Spirillina polygyra Günbel, S. tenuissima Gümbel, S. italic acid Massari, Turrisspirillina conoidea (Paalzow), T. marginotruncata n.sp., T. subconica Tappan, T. sp. n.sp., Patellina subcretacea Cushman & Alexander, and
- from Order Rotaliida (Placentulinae): Patelinella hebetis n.sp., P. concinna n.sp., P. rumana Neagu, Pseudopatelinella scythica n.sp. Also from the same family is described the new genus Rumanolina confounded by the previous authors with Trocholina or Patellina. To this new genus belongs the following species: R. elevata (Paalzow), R. feifeli (Paalzow), R. sieboldi (Lutze), R. turris n.sp. and R. turriculata (Dieni et Massari).

Keywords: Early Cretaceous, Spirillinida and Rotaliida, Calcareous foraminifera, South Dobrogea, Romania.

INTRODUCTION

In the suite of Lower Cretaceous carbonate deposits from Southern Dobrogea prevailing are the zoogenous limestones with many types of petrographic structures. Subordinate to these are thin intercalations with an argillaceous character, which are extremely rich in foraminifera and ostracods. Among the calcareous foraminifera there are abundant miliolids followed by trocholinids. With a reduced frequency are the nodosariids and rotaliids. The Planctonicis are totally absent. Agglutinated foraminifera from the southern Dobrogea region have been described previously (Neagu, 1997, 1999, and 2000).

In the outcrop from the right bank of the Lake Vederosa - Alimanu (Text-Figure1) the soft yellowish-white argillaceous intercalation’s contain brachiopods (Loriliothyris russilensis) and a lumachelle with plates and radiolos of Cidaroides (Cidaris pusulosa, Cidaris muralata). In the intercalations with Loriliothyris, the foraminiferal fauna is represented, by large numbers of trocholinids (Neotrocholina burgeri burgeri, N. burgeri molesta, N. valdensis), together with Charentia evoluta, Haplophragmium aequalis, and rare Lenticulina, Marginulina and Tristix polygonais.

SYSTEMATIC PALEONTOLOGY

- We follow the suprageneric foraminiferal classification proposed by Loeblich and Tappan in 1992.
- The type specimens of all taxa are housed in the collections of the Laboratory of Paleontology, University of Bucharest to which the catalogue numbers are apply.
- Conventions employed in the descriptions are as follows: L.P.B. = Laboratory of Paleontology, Bucharest; IV = Foraminiferal – Romania.

Class FORAMINIFERA J.J. Lee, 1990
Ord. SPIRILLINIDA Gorbatch & Mantzurova, 1980
Subord. INVOLUTININA Hohenegger & Piller, 1977
Family PLANISPIRILLINIDAE Piller, 1978
Genus Planispirillina Bermudez, 1952
Planispirillina dobrogiaca n. sp.
Plate 2, Figures 33-48; Plate 5, Figures 40-41

¹ Laboratory of Paleontology, Bd. N. Bălcescu 1, 70111, Bucharest, ROMANIA, e-mail: thneagu@geo.edu.ro; pamfile@geo.edu.ro
Derivation of name: from Dobrogea, the historical name of the territory between the Black Sea and Danube River.

Type level: Valanginian

Type locality: Alimanu, right bank of Lake Vederoasa (lamachelle with cidaroids fragments).

Description: Test discoidal, with a secondary tubular chamber, very weakly trochosipirally coiled; all the whorls (9-12) are visible on the spiral side. The umbilical side is filled up, by ornamentation represented by nodular radial structures, which hide the whorls of the tubular chamber; only the last whorl of the tubular chamber is visible on the peripheral area of the umbilical side. Aperture corresponds to the open end of the tubular chamber.

Dimensions: (figured specimens) holotype diameter 0.39mm; thickness 0.09mm; paratypes diameter 0.36 – 0.40mm; thickness 0.09 – 0.17mm

Remarks: The species differs from Spirillina italica Dieni & Massari, because the ornamentation is developed only on the umbilical side and not on both sides as in the S.italica. From P. granulosa Mityanina 1957, (fide Loeblich & Tappan, 1964, Figure 475/9) it differs by the umbilical ornamentation and the weakly convex aspect of the spiral side. Because of weakly trochosipiral aspect of the spiral side our material is close to Turrispirillina but differs by the umbilical ornamentation.

Stratigraphical distribution: Valanginian

Suborder SPIRILLININA Hohenegger & Piller, 1075
Family SPIRILLINIDAE Reuss & Fritsch, 1861
Genus Spirillina Ehrengberg, 1843

Spirillina polygryata Gumbel, 1862
Plate 1, Figures 4-9
Spirillina polygryata GUMBEL, 1862, p. 214, Plate 6, Figure 11a-c; BIELECKA, 1960, p.86, Plate 8, Figure 66-67; REIGRAF & LUTERBACHER, 1989, p.1028, Plate 2, Figures 36-38; Plate 3, Figure 1-2
non Spirillina polygryata GUMBEL; SIEBOLD & SIEBOLD, 1960, p.124, Plate 5, Figure f-h

Dimensions: (figured specimens) diameter 0.31 – 0.36mm; thickness 0.07 – 0.09mm

Remarks: Contrary to Gumbel’s figure from 1862, in which this species clearly has a planispiral test, Siebold & Siebold (1955) restudying Gumbel’s originals, gave a new
interpretation, totally different from Gümbl's one, but similar to the form that Paalzow described as Spirillina conoidea (1917).

Describing the new genus Turrisspirillina, Cushman (1927) selected S. conoidea Paalzow as the type species. Loeblich & Tappan (1987) consider Turrisspirillina as a valid genus, with S. conoidea as the type species.

**Type specimens:** L.P.B.IV. 11394

**Occurrence:** Alimanu, right bank of Lake Vederoasa, (lumachelle with cairoids fragments).

**Stratigraphical distribution:** Valanginian

**Spirillina tenuissima** Gümbl, 1862

Plate 2, Figures 1-3

Spirillina tenuissima Gümbl 1862, p.214, Plate 4, Figure 12; Siebold & Siebold, 1955, p.125, Text-Figure 5n; 1960, p.374

**Dimensions:** (Figured specimens) diameter 0.19mm; thickness 0.02mm

**Remarks:** Siebold & Siebold (1955) using the Gümbl's original, certified the matter of fact, that the original shell of this species is calcitic and not agglutinated as many subsequent authors considered, and described it as Ammodiscus tenuissimus.

**Type specimens:** L.P.B.IV.11400

**Occurrence:** Alimanu, right bank of Lake Vederoasa (lumachelle with cairoids fragments)

**Stratigraphical distribution:** Valanginian.

**Spirillina italica** Dieni & Massari, 1966

Plate 1, Figures 1-3

Spirillina italica Dieni & Massari, 1966, p.166, Plate 7, Figure 19-21; Neagu, 1975, p.107, Plate 79, Figure 2-7; Arnaud-Vanneau, 1980, p.748, Plate 7, Figure 1-5, Plate 15, Figure 10-12.

**Dimensions:** (Figured specimen) diameter 0.31mm; thickness 0.07mm

**Remarks:** Ours specimens, from the Upper Barremian, corresponds to the character of the original species.

**Type specimens:** L.P.B.IV.11401

**Occurrence:** Ostrov, southern bank of Lake Ostrov

**Stratigraphical distribution:** Upper Barremian

Genus Turrisspirillina Cushman, 1927

**Turrisspirillina conoidea** (Paalzow, 1917)

Plate 1, Figure 10-30, Plate 2, Figure 6-14, Plate 5, Figure 38-39

Spirillina conoidea Paalzow, 1917, p.217, Plate 41, Figure 8

Spirillina polygyrata Gümbl, - Siebold & Siebold, 1960, p.124, Plate 5, Figures f-h.

**Dimensions:** (figured specimens) diameter 0.19mm; height 0.09 - 0.14mm

**Remarks:** Ours material corresponds very well to Paalzow species selected by Cushman as type species for the genus Turrisspirillina.

**Type specimens:** L.P.B.IV. 11402

**Occurrence:** Alimanu, right bank of Lake Vederoasa (lumachelle with cairoids fragments)

**Stratigraphical distribution:** Valanginian

**Turrisspirillina marginitruncata** n.sp.

Plate 5, Figures 7-13

**Derivation of name:** latin margina = to make a brim; truncatus-a-um = truncate, to cut off.

**Type level:** Valanginian

**Type locality:** Medgidia, Kretzulescu's Valley

**Type species:** holotype L.P.B.IV.11403; paratypes L.P.B.IV.11404 - 11405

**Description:** Test conical, extremely obtuse and trochosiral, deeply concave on the umbilical side. On the smooth spiral side all the whorls (8-16) are visible. On large specimens (probably microsphaerical), the early part of the test (first 4-5 whorls) are depressed (concave). This species is characterized by the truncate aspect of the external border of the test, getting a wheel-like aspect in latero-oral view. Aperture a simple opening at the end of the tubular second chamber.

**Dimensions:** (figured specimens) holotype diameter 1.24mm; thickness 0.21mm; height 0.34mm; paratypes diameter 0.60 - 1.65mm; height 0.21 - 0.55mm.

**Remarks:** By its truncate peripheral aspect of the test, this species is very well delimited.

**Occurrence:** Medgidia - Kretzulescu's Valley, Cernavodă Pod, right bank of the Danube River

**Stratigraphical distribution:** Valanginian

**Turrisspirillina subconica** Tappan, 1943

Plate I, Figure 31-32

Turrisspirillina subconica Tappan, 1943, p.510, Plate 82, Figure 2-3. - Arnaud-Vanneau, 1980, p.712, Plate 7, Figure 10-11, Plate 15, Figure 18-21.

**Dimensions:** (figured specimens) diameter 0.29mm; height 0.07mm

**Remarks:** Specimens from the Upper Barremian of the Ostrov area correspond very well to Tappan's species, described by A. Arnaud-Vanneau (1980).

**Type specimens:** L.P.B.IV. 11407

**Occurrence:** Upper Barremian, Ostrov - southern bank of Lake Bugiec.

**Stratigraphical distribution:** Barremian-Lower Aptian.

**Turrisspirillina** sp. n.sp.

Plate 2, Figure 4-5

**Description:** Small test with the secondary tubular chamber trochosiral coiled not in a conical shape, but in a particularly ogival...
aspect. Sutures of the whorls have a weakly crenellate aspect because the umbilical face of the tubular chamber has an undulate aspect; deep umbilicus. Aperture corresponds to the end of the tubular secondary chamber.

**Dimensions:** (figured specimen) diameter 0.17mm; height 0.21mm

**Remarks:** Because we have no more than 5 specimens, we consider that there is insufficient material to describe a new species.

**Type specimens:** L.P.B.IV. 11406

**Occurrence:** Alimanu, right bank of Lake Vederoaasa (lumachelle with cidaroids fragments)

**Stratigraphical distribution:** Valanginian

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Family PATELLINIDAE Rhumbler, 1906
Subfamily PATELLININAE Rhurnbler, 1906
Genus *Patalina* Williamson, 1858

**Patalina subcretacea** Cushman & Alexander, 1930
- Plate 3, Figures 32-34

**Patalina subcretacea** Cushman & Alexander – Tappan, 1943, p.31; Plate 82, Figure 4.
- Sztejn, 1957, p. 8o; Plate 10, Figure 92.
- Neagu, 1972, p. 215; Plate 8, Figure 20; 1975, p. 109; Plate 82, Figure 1 – 16; Plate 85, Figure 26 – 29. -Arnaud-Vanneau, 1980, p. 773; Plate 7, Figure 14 - 17; Plate 15, Figure 25 – 26.

**Dimensions:** (figured specimen) diameter = 0.53mm; height = 0.17mm

**Type specimens:** L.P.B.IV. 11408

**Occurrence:** Ostrov - southern bank of Lake Bugac

**Stratigraphical distribution:** Upper Barremian

Order ROTALIIDA Lankester, 1885
Superfamily DISCORBACEA Ehrenberg, 1838
Family PLACENTULINIDAE Kasimirova, Poroshina & Geodokchian, 1980
Subfamily ASH BROOKINIAE Loeblich & Tappan, 1948
Genus *Patalina* Cushman, 1928

**Patalina hebetis** n. sp.
- Plate 1, Figures 33-52; Plate 5, Figures 35-37

**Derivation of name:** (Latin) *hebetis* = obtuse (referring to an angle greater than 90 degrees). After the test shape.

**Type level:** Valanginian.

**Type locality:** Alimanu, right bank of Lake Vederoaasa (lumachelle with plates and radiols of Cidaroids).

**Type specimens:** holotype L.P.B.IV. 11409, paratypes: L.P.B.IV.11410

**Description:** Test conical-obtuse, with an early stage weakly trochosphiral with 3 - 4 chambers per whorl, followed by a biserial-textularial stage. Rapidly growing chambers give the test a conical-obtuse aspect. The last whorls chambers on the umbilical side have an inflated and smooth aspect and leave a depressed umbilicus. Aperture an arcuate umbilical hook-like slit; apertural face smooth.

**Dimensions:** (figured specimens); holotype: large diameter 0.34mm, small diameter 0.31mm; height 0.29mm; paratype: large diameter 0.34 – 0.43mm; small diameter 0.19 – 0.26mm; height 0.22 – 0.19mm.

**Remarks:** This species differs from *P. rumana* (NEAGU, 1975), by the globular aspect of the umbilical side and a fairly conical-obtuse shape of the test.

**Stratigraphical distribution:** Valanginian.

*Patalina concinna* n. sp.
- Plate 2, Figures 15-30; Plate 5, Figures 32-34

**Derivation of the name:** (Latin) *concinnus-a-um* = fine, beautiful, harmonious, after the general shape of the test

**Type level:** Valanginian.

**Type locality:** Alimanu, right bank of Lake Vederoaasa (lumachelle with plates and radiols of Cidaroids).

**Type specimens:** Holotype L.P.B.IV. 11411, paratype L.P.B.IV.11412.

**Description:** Test high-acute conical, higher than broad; early stage low trochosphiral with 3-4 chambers per whorl followed by a biserial (textularial) stage. Chambers grow gradually in dimensions; weakly depressed or smooth sutures. Umbilical side weakly inflated (never flat), concave with a rounded external border. Umbilical aperture as a low arcuate and hook-like slit with an apertural lip. Umbilical face presents feebly radial striae.

**Dimensions:** (figured specimens) holotype: large diameter 0.36mm; small diameter 0.34mm; height 0.60mm; paratype: large diameter 0.24 – 0.39mm; small diameter 0.19 – 0.29mm; height 0.29 – 0.62mm.

**Remarks:** This species differs from *P. cristinae* Bielecka, 1960, by its smooth test. The species is homeomorphic with *Rumanolina elevata* (Paalzow) because of its conical-acute outline of the test, but the textularial chamber disposition and the smooth aspect makes it clearly different.

**Stratigraphical distribution:** Valanginian.

*Patalina rumana* (NEAGU, 1975)
- Plate 1, Figures 43 – 45

*Pseudopatalina rumana* Neagu 1975, p.107; Plate 81, Figures 11–29; Plate 84, Figures 1-5; Plate 85, Figures 22-23; Plate 97, Figures 8-12.

**Dimensions:** (figured specimens) large diameter 0.39mm; small diameter 0.24mm; height 0.17mm
Remarks: *P. rumana* differs from *P. hebetis* by the low-conical aspect of the test and the flat aspect of the umbilical side.

**Type specimens:** L.P.B.IV. 11413

**Occurrence:** Ostrov, southern bank of Lake Bugac

**Genus** *Pseudopatelinella* TAKAYANAGI, 1960

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**Pseudopatelinella scythica** n. sp.

**Plate 5, Figures 1-12**

**Derivation of the Name:** latin *scythicus-a-um* - scythic derived from *Scythys-a = Scyth*, ancient inhabitants of Southern Dobrogea.

**Type level:** Valanginian

**Type locality:** Alimanu, right bank of Lake Vederoaasa (lumachelle with plates and radiols of Cidaroids)

**Type specimens:** Holotype L.P.B.IV. 11414, paratype L.P.B.IV. 11415

**Description:** Conical-obtuse test with biserial helicospiral coiled chambers. Sutures arculate and weakly depressed. On the umbilical side, the last two chambers are weakly inflated with a central depressed umbilicus. Aperture an interio-margin hook-like slit; umbilical face completely smooth.

**Dimensions:** (figured specimens) holotype large diameter 0.34mm; small diameter 0.26mm; height 0.39mm; paratype large diameter 0.29 – 0.34mm; small diameter 0.24 – 0.29mm; height 0.21 – 0.31mm.

**Remarks:** This species is homeomorphic with *Patelinella hebetis*, but differs by its trochospiral-biserial chamber arrangement.

**Stratigraphical distribution:** Valanginian.

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**Genus RUMANOLINA** Neagu n. gen.

**Type species:** *Trocholina elevata* Paalzow, 1932 = Rumanolina elevata (Paalzow, 1932)

**Description:** Test conical to highly acute. Early stage is planispiral coiled or very obtuse trochospiral with 2-4 chambers per whorl. The early stage is followed by an irregularly biserial or trochospirally biserial (not textularoid) stage. Acute to flap-like keels is developed along the arched sutures. Chambers without any internal secondary septula. The last two chambers visible on the umbilical side are flat or concave, with an acute periphery and externally keeled board. Umbilical surface is ornamented by radial striae associated with small tubercles; interiomarginal umbilical aperture with a weakly thickened lip has a hook-like aspect; wall of the test present a typical calcitic breach after the rhomboidal crystal is perforated by moderate-size pore.

**Remarks:** Because of the calcitic spar-cleavage of the test and the umbilical ornamentation this genus was confused by Siebold & Siebold (1960) with *Paalzowella* Cushman, 1933. The authors did not take in consideration the trochospiral-biserial disposition of the chambers, the structure of the umbilical side and the absence of secondary internal septula.

Later, Dieni & Massari (1965), using the material offered by Lutze (*P. feifeli, P. sieboldi*), attempted to demonstrate that the genus *Paalzowella* Cushman 1933 is a junior synonym of *Patellina* Williamson. Unfortunately, these authors made the same mistake as that of Siebold & Siebold instead in fact their figure shows clearly the irregularly biserial arrangement of the chambers (trochospiral-biserial coiling). They did not take in consideration the early stage of the test and the total absence of inner septula (typically for *Patellina*). Loeblich & Tappan (1988) cleared up the confusion showing the validity of Cushman's *Paalzowella* with the type species *P. turbinata* (Gümbel) ort and its junior synonym *Trocholina scalaris* Paalzow 1932.

Because of high abundance and excellent preservation of our material from the Valanginian at Alimanu in Southern Dobrogea, even the macrospheical specimens make it possible to clear up this problem. From *Paalzowella, Rumanolina* n.gen. differs by the early planispiral chambers and by the irregularly biserial disposition of the adult (last) chambers. The total absence on the inner secondary elements of the chambers this genus is very well delimited from *Patellina* and *Paalzowella* to which it is homeomorphic (in the external outline).

**Stratigraphical distribution:** Kimmeridgian - Upper Barremian

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**Rumanolina elevata** (Paalzow, 1932)

**Plate 3, Figures 13-17; Plate 4, Figures 25-38; Plate 5, Figures 23-30**

**Trocholina elevata** Paalzow, 1932, p.140, Plate 11, Figure 4

**Paalzowella feifeli elevata** (Paalzow); - SIEBOLD & SIEBOLD, 1960, p.379, Text-Figure 8, Plate 7 Figure 3; NEAGU, 1972, p.112, Plate 3, Figure 12-17.

**Dimensions:** (figured specimens) large diameter 0.31 – 0.43mm; small diameter 0.29 – 0.39mm; height 0.48 – 0.58mm

**Remarks:** The conical-acute shape of the test very clearly distinguishes this species. Macrosphereic specimens have an early robust-planispiral stage; the test has a laterally flattened shape.

**Type species:** L.P.B.IV.11416

**Occurrence:** Alimanu, right bank of Lake Vederoaasa (Lumachelle with plates and radiols of Cidaroids)
Stratigraphical distribution: Valanginian.

**Rumanolina feifeli** (PAALZOW, 1932)
Plate 1, Figures 52-53; Plate 3, Figures 30-31;
Plate 5, Figure 22
*Trocholina feifeli* Paalzow, 1932 p.140, Plate 11, Figures 6-7
*Paalzowellia feifeli feifeli* (Paalzow). -SIEBOLD & SIEBOLD, 1960, p.378, Text-Figure 8 (l, p, q), Plate 7, Figure 2.
*Patellina feifeli feifeli* (Paalzow). -Dieni & Massari, 1965, p.115, Text-Figure 1a-b.
Dimensions: (figured specimens) large diameter 0.36 – 0.53mm; small diameter 0.31 – 0.46mm; height 0.26 – 0.29mm
Remarks: The conical expanded aspect of the test and the large winged sutural keels make easy to recognize this species.
*Type specimens:* L.P.B.IV.11417
Occurrence: Alimanu, right bank of Lake Vederoasa (lumachelle with plates and radioloi of Cidaroids)

**Rumanolina sieboldi** (Lutze, 1960)
Plate 3, Figures 25-29; Plate 4, Figures 31-43;
Plate 5, Figures 18-25
*Paalzowellia feifeli sieboldi* Lutze, 1960, p.486, Plate 33, Figure 12, Text-Figure 19 (20-34)
*Patellina feifeli sieboldi* (Lutze). -Dieni & Massari 1965, p.114, Text-Figure 1a-b
Dimensions: (figured specimens) larger diameter 0.26 – 0.31mm; small diameter 0.26 – 0.31mm; height 0.26 – 0.31mm
Remarks: The conical-robust aspect of the test very well defines this species. (By the conical-robust aspect of the test this species is very well delimited.)
*Type species:* L.P.B.IV. 11418
Occurrence: Alimanu, right bank of Lake Vederoasa (Lumachelle with plates and radioloi of Cidaroids).

**Stratigraphical distribution:** Valanginian.

**Rumanolina turriculata** (Dieni & Massari, 1965)
Plate 3, Figure 1-12
*Patellina turriculata* Dieni & Massari, 1966, p.174, Plate 8, Figure 15-16. -Arnaud-Vanneau, 1980, p.774, Plate 7, Figure 18-19; Plate 15, Figure 21-23.
Dimensions: (figured specimens) Diameter 0.29 – 0.31mm, height 0.21 – 0.26mm
Remarks: This species differs from *R. feifeli* and *R. sieboldi* by its low conical robust test, small sutural keels and mostly tuberculated umbilical side.
*Type specimens:* L.P.B.IV. 11421
Occurrence: Ostrov, Southern bank of Lake Bugac

**Stratigraphical distribution:** Upper Barremian

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PLATES

Plate I
Figures 1-3 *Spirillina italic* (DIENI & MASSARI), 1966. Upper Barremian, Ostrov, southern bank of the Lake Bugeac, L.P.B.IV.11401
Figures 4-9 *Spirillina polygyrata* GÜMBEL, 1862. Valanginian, Alimanu, right bank of the Lake Vederoaça, L.P.B.IV.11399
Figures 10-30 *Turrispirillina conoidea* (PAALZOW), 1917. Valanginian, Alimanu, right bank of the Lake Vederoaça, L.P.B.IV.11402
Figures 31-32 *Turrispirillina subconica* TAPPAN, 1943. Upper Barremian, Ostrov, southern bank of the Lake Bugeac, L.P.B.IV.11407
Figures 43-45 *Patelinella rumana* (NEAGU), 1975. Upper Barremian, Ostrov, southern bank of the Lake Bugeac, L.P.B.IV.11413
Figures 52-53 *Rumanolina feifeli* (PAALZOW), 1932. Valanginian, Alimanu, right bank of the Lake Vederoaça, L.P.B.IV.11417

L.P.B. = Laboratory of Paleontology, Bucharest, IV = Foraminiferal – Romania.
* All figures are camera lucida drawings by Theodor NEAGU.

Plate II
Figures 1-3 *Spirillina tenuissima* GÜMBEL, 1862. Valanginian, Alimanu, right bank of the Lake Vederoaça, L.P.B.IV.11400
Figures 4-5 *Turrispirillina* sp., n.sp. Valanginian, Alimanu right bank of the Lake Vederoaça, L.P.B.IV.11406
Figures 6-14 *Turrispirillina conoidea* (PAALZOW), 1917. Valanginian, Alimanu, right bank of the Lake Vederoaça, L.P.B.IV.11402
Figures 15-30 *Patelinella concina* n.sp. Valanginian, Alimanu, right bank of the Lake Vederoaça, holotype Figures 29-30, L.P.B.IV.11411; paratypes Figures 11-28, L.P.B.IV.11412
Figures 31-32 *Rumanolina turris* n.g., n.sp. (macrospheical specimen), Valanginian, Alimanu, right bank of the Lake Vederoaça, paratype L.P.B.IV.11420
Figures 33-48 *Planispirillina dobrogica* n.sp. Valanginian, Alimanu, right bank of the Lake Vederoaça, holotype Figure 39-40, L.P.B.IV.11397; paratypes Figures 33-38, L.P.B.IV.11398

L.P.B. = Laboratory of Paleontology, Bucharest, IV = Foraminiferal – Romania.
* All figures are camera lucida drawings by Theodor NEAGU.

Plate III
Figures 1-12 *Rumanolina turriculata* (DIENI & MASSARI), 1966. Upper Barremian, Ostrov, southern bank of the Lake Bugeac, L.P.B.IV.11421
Figures 13-17 *Rumanolina elevata* (PAALZOW), 1932. (macrospheical specimens), Valanginian, right bank of the Lake Vederoaça, L.P.B.IV.11416
Figures 18-20 *Rumanolina turris* n.g., n.sp. (macrospheical specimen). Valanginian, right bank of the Lake Vederoaça, paratypes L.P.B.IV.11420
Figures 23-31 *Rumanolina feifeli* (PAALZOW), 1932. Valanginian, right bank of the Lake Vederoaça, L.P.B.IV.11417
Figures 32-34 *Patelinella subcretacea* CUSHMAN & ALEXANDER, 1930. Upper Barremian. ISPH drillings Oltna –Bala I, -36m, L.P.B.IV.11408

L.P.B. = Laboratory of Paleontology, Bucharest, IV = Foraminiferal – Romania.
* All figures are camera lucida drawings by Theodor NEAGU.
Plate IV
Figures 1-23 Rumanolina turris n.g., n.sp. Valanginian, Alimanu, right bank of the Lake Vederoasa, holotype Figures 20-21, L.P.B.IV.11419, paratypes Figures 1-19, 22-23, L.P.B.IV.11420

Figures 24-38 Rumanolina elevata (PAALZOW), 1932. Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV.11416


L.P.B. = Laboratory of Paleontology, Bucharest, IV = Foraminiferal – Romania.
* All figures are camera lucida drawings by Theodor NEAGU.

Plate V
Figures 1-12 Pseudopatelinella scythica n.sp. Valanginian, Alimanu, right bank of the lake Vederoasa; holotype Figures 1-3, L.P.B.IV.11414; paratypes Figures 4-12, L.P.B.IV.11415

Figures 13-17 Turrispirillina marginotruncata n.sp. Holotype Figures 13-14, Valanginian, Medgidia, Kretzulescu’s Valley, L.P.B.IV.11403, paratypes Figures 15-17, Valanginian, Cernavodă Pod, right bank of the Danube River, L.P.B.IV.11404

Figures 18-21 Rumanolina sieboldi (LUTZE), 1960. Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV.11418

Figure 22 Rumanolina feifeli (PAALZOW), 1932. Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV.11417

Figures 23-30 Rumanolina elevata (PAALZOW), 1932. Valanginian, Alimanu, right bank of the Lake Vederoasa; (Figures 29-30 macroosphereric specimens), L.P.B.IV.11416

Figure 31 Rumanolina turris n.sp. Paratype, Valanginian, Alimanu right bank of the Lake Vederoasa, L.P.B.IV.11420

Figures 32-34 Patelinella concina n.sp. Paratypes, Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV. 11412

Figures 35-37 Patelinella hebetis n.sp. Paratypes, Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV.11410

Figures 38-39 Turrispirillina conoidea (PAALZOW), 1917. Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV 11409

Figures 40-41 Planispirillina dobrogiaea n.sp. Paratype, Valanginian, Alimanu, right bank of the Lake Vederoasa, L.P.B.IV. 11398

L.P.B. = Laboratory of Paleontology, Bucharest, IV = Foraminiferal – Romania.
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