

BARREMITITES, NEW GENUS OF THE FAMILY EODESMOCERATIDAE WRIGHT,
1955 (AMMONITINA)
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Abstract: The genus proposed here, *Barremitites* (type species: *Haploceras strettostoma* UHLIG, 1883), is different from the genus *Barremites* (to which its representatives were assigned) by the presence of a spiral depression in the upper third of the flanks (instead of a periumbilical depression), by falcoid constrictions, by short crescent-shaped ribs developed exclusively in the spiral depression area behind the constrictions, in all growth stages and by the suture line, displaying a large and very dissymmetric first lateral lobe. Beside the type species of the genus, other three new species: *Barremitites panae* n. sp., *B. neagui* n. sp. and *B. transitorius* n. sp. are described and figured.

Key words: Barremian-Lower Aptian Ammonites, Eodsmoceratidae, new genus, new species.

In a previous paper (Avram, 1978), it was emphasized the need of a revision of the genus *Barremites* KILIAN, 1915, preferable by French paleontologists, who control its type specimens and the topotype material. Now, after about 20 years of waiting, I have to develop the subject.

Ammonites difficilis d'ORBIGNY, 1841, the type species of the genus, was incompletely defined, lacking the suture line. Subsequent illustrations of the sutures were done either without any figuration of the specimens which offered them (Sarasin, 1897; Chaput in Kilian, 1920), or attributed to the loss in the meantime (and thus, impossible to be verified) d'Orbigny's type (Roman, 1938). Nevertheless, *Barremites difficilis* was accepted as figured by the last author (re-figured here in Pl.I, Figs.1a-c): discoid compressed shell with its narrow umbilicus bounded by angular shoulders, with the inner half of the whorl-sides descending slowly toward the umbilical margin (so called "peri-umbilical depression" by Breskovski, 1977) and with their outer half convergent toward the venter, and exhibiting rare, sigmoid ribs corresponding to sigmoid constrictions on the cast; suture line displaying a relatively short median lobe, a relatively narrow and dissymmetric first lateral one and descending auxiliaries.

Various morphotypes of the group were presented in the literature as distinct species or subspecies, such as *Barremites hemiptychus* KILIAN, *B. difficilis dimboviciorensis* BRESKOVSKI, etc. In fact, the differences between these "taxa" seem to be mainly due to the individual variability or to the kind of preservation: the pyritised ammonites of Svinita (SW Romania, near the Danube) of this group, although wider umbilicate and wider whorled than the typical *B. difficilis*, display the suture line (Pl. I, Figs 4c and 5c) similar to that figured by Roman (1938) and the whorl section almost identical to those of *B. difficilis dimboviciorensis* and *B. hemiptychus*; owing to the preservation as pyritised casts, they exhibit only the constrictions. Taking into consideration all these facts, the only way to define them before the revision of the whole group is that followed by Delanoy (1992) who described them as *Barremites* gr. *difficilis* (d'ORBIGNY). Beside the morphotypes mentioned, the genus *Barremites* includes as clearly distinct species (with similar suture lines, but different by morphology and ornamentation): *B. waageni* (SIMIONESCU), *B. subdifficilis* (KARAKASCH), possibly

(?) *B. muierensis* BRESKOVSKI and also, some unnamed ones. By comparison, the group of *Haploceras strettostoma* UHLIG, 1883, is different from typical *Barremites* by the whorls deprived of any peri-umbilical side depression, by sides subparallel in their inner half and displaying a spiral depression in their upper third, by the falcoid constrictions, seen on the shell surface, and also by the exclusively very short, crescent-shaped ribs, bounding the constrictions adapically, in the spiral depression area only; the suture line is very different, too, because of the wide and very dissymmetric first lateral lobe. These features are proper not only to "*Barremites*" *strettostoma*, but also to some other species, all grouped here in a new genus, related to *Barremites*, for which the name *Barremitites* could emphasize this relationship.

Genus *Barremitites* n. g.

Type species: *Haploceras strettostoma* (UHLIG); Upper Barremian and lowermost Aptian, Svinita.

Generic characters: discoid-compressed, with narrow umbilicus, angular umbilical shoulder, flat-subparallel sides in their inner half and convergent-depressed in their outer half (=spiral depression); falcoid constrictions, bounded adapically in the depression area by short, crescent-shaped ribs, somewhere with irregular crescent-shaped ribblets in between; suture line with wide and very dissymmetric first lateral lobe.

Age: Upper Barremian-Lower Aptian.

***Barremitites strettostoma* (UHLIG)**

Plate II, figs. 1a-b, 2a-c, 3, 4a-c, 5a-c, 6a-b, 7

1978 *Barremites* ? *strettostoma* (UHLIG), Avram, p.19, pl.III, figs.1-2, 3 (refigured lectotype), 4-6, text-Fig. 5 (Cum. Syn.)

An almost complete description of the species was made in 1978. The lectotype, selected by Breskovski, 1966 (=Uhlig, 1883, pl.XVII, Figs.3a-b, here figured in Pl.II, Figs. 1a-b) is a small nucleus deprived of any clear constrictions, but obviously continued with the stage figured here in the Pl.II, Figs. 3 and 4a-c; it is characterised by rare shallow constrictions, rising from a diameter of about 20-25 mm, and by the half-moon ribs disposed by one behind

the constrictions. The other syntype, figured by Tietze (1872), and also by Uhlig (1883), etc., re-figured here in Plate II, Figs. 2a-c, is rather different from the lectotype by its early rising and stronger falcoid constrictions, with falcoid ribblets in between, on the sides. This latter, also including the specimens figured in Pl. II, Figs. 5 and 6, is considered here as a different subspecies than the typical one, named *B. strettostoma tietzei* (devoted to E. Tietze, the author who published the first example of this subspecies).

Measurements:

Barremites strettostoma s. str.

Site	Diameter	U	H	W	W/H
Lectotype	23mm	3.5(0.15)	12.6(0.55)	5.7(0.25)	0.45
IG P 18882-E	23.5	3.4(0.14)	12.3(0.52)	6.3(0.26)	0.51
IG P 18881-Vd	26.3	4 (0.15)	13.6(0.51)	6.6(0.25)	0.49
IG P 18880-L	30.6	4.9(0.16)	16.2(0.53)	7.9(0.26)	0.49
" - 2+40	41	5.3(0.13)	22.3(0.53)	11.3(0.27)	0.55
" - O-R	47	6.2(0.13)	25.5(0.54)	11.5(0.25)	0.45
Pl. II, fig. 4 - O	49.3	6.8(0.15)	26 (0.53)	12.3(0.25)	0.47

Barremites strettostoma tietzei

	D	U	H	W	W/H
Holotype	45.5	7 (0.15)	24 (0.52)	11.2(0.25)	0.47
2+40	(56)	9 (0.16)	29.3(0.53)	14.5(0.26)	0.49
Pl. II, Fig. 5-2+40	31.3	4.9(0.15)	17 (0.52)	7.8(0.24)	0.46
Tietze's specimen	26.8	4.3(0.16)	14 (0.52)	6.5(0.24)	0.46

Remarks: The whole type material of the species, preserved in the Sammlung der geologischen Bundesanstalt, Wien, comes from Svinița. Numerous pyritised topotypes, larger in size than the types, and also some large individuals (up to a diameter of about 20 mm) permitted a more complete description (Avram, 1978) and a more accurate establishment of the range of the species. It is to emphasize the presence of only half-moon short ribs behind the constrictions up to the largest size; on this ground the species could be identified even when its individuals are crushed (Pl. II, Fig. 7).

The same features – a very narrow umbilicus, with angular margin, falcoid constrictions bounded adapically by crescent-shaped ribs and no other ornamentation – are offered by the examples in d'Orbigny's collection preserved as type material of *Ammonites difficilis* in the Museum of Natural Sciences in Paris (figured here in Pl. I, Figs. 2, 3); they seem to belong to *Barremites strettostoma* rather than to d'Orbigny's species.

Occurrence in Romania: *Barremites strettostoma* is common in Svinița in the whole Upper Barremian (in the beds with *Ancyloceras vandenheckii*) and in the *Forbesi* Zone of the Lower Aptian.

Barremites panae n. sp.

Plate III, Figs. 1a-d, 2a-d

Holotypus: the fragmentary specimen in Pl. III, Figs. 1a-d (Avram's collection, IG P 18888).

Derivatio nominis: from the name of the great paleontologist, Professor Ioana Pană (University of Bucharest).

Locus typicus: the pass on the left side of the Vodiniciki valley, at Svinița.

Stratum typicum: lower half of the Upper Barremian (below the beds with *Imerites*).

Material: four individuals (two of them assembled in Pl. III, Figs. 1a+2), all gathered in the same fossiliferous site as the holotype (IG P 18889).

Description. The holotype preserves a third of the last whorl of the phragmocone. It is discoid, exhibits a relatively wide umbilicus and high-trapezoid whorl section with high, sloped and concave umbilical wall, angular umbilical margin, gently convex sides in their lower (inner) half, then convergent, slightly concave towards the tabulate venter; it is covered by 5 prorsiradiate constrictions, slightly retroverse at mid-flanks. In the spiral depression area, some of the constrictions display a more prominent adapical margin than the adoral one, like vague ribs.

The paratype is a pyritised nucleus, with the same whorl section, shape of the constrictions and suture line as the holotype. Its first constriction rises near the ventral margin at about 14 mm diameter, and the last ones (on the mature end of the preserved shell) are deeper at the umbilical margin and in the spiral depression area, where the last of them is bounded adapically by a vague rib.

Measurements:

holotype

(Pl. III, Fig. 1): (35)mm 6.3(0.18) 18.2(0.52) 10.3(0.29) 0.56

paratype

(Pl. III, Fig. 2): 27 5.1(0.18) 13.9(0.50) 7.9(0.28) 0.57

assembled

(1a + 2) : 44 8.9(0.20) 21.7(0.50) 12 (0.28)

0.57

non-figured

specimen : 35 6.3(0.18) 17.5(0.50) 10.3(0.29) 0.58

Variability. One of the non-figured specimens displays slightly expressed ribblets between the constrictions.

Occurrence: as for the holotype.

Barremites neagui n. sp.

Pl. III, Figs. 3a-d

Holotypus: the figured specimen (Avram's collection, IG P 18890).

Derivatio nominis: species devoted to Professor Theodor Neagu from the Bucharest University,

Corresponding Member of the Romanian Academy of Sciences and great paleontologist.

Locus typicus: the highway on the left bank of the Danube, at some 150 m downstream the Vodiniciki valley (site L+O).

Stratum typicum: Upper Barremian (bed not specified, below the beds with *Imerites*).

Material: 2 specimens, of which the second was gathered in the area of the village Svinița (site F) (IG P 18891).

Specific characters: discoid, with narrow umbilicus; vertical umbilical wall, rounded-angular umbilical margin; very compressed, subtrapezoidal whorl section, with a well developed spiral depression and with subtabulate venter; the ornamentation consists of five prorsiradiate and almost straight constrictions on a complete whorl, gently concave in the spiral depression area; the suture line is typical of *Barremites* type.

Measurements (of the holotype):

28 mm 46 (0.16) 14.5(0.51) 8.4(0.30) 0.58

Remarks: except for the wider whorls, the specimens described are comparable to *Barremites strettostoma* by their shell proportions, but the peculiar shape of the constrictions is very distinctive, as an argument for distinguishing them as a new species, even the mature stage can not be established yet.

Occurrence: the same as for the holotype.

***Barremites ? transitorius* n. sp.**

Plate III, Figs.4a-d, 5a-c

Holotypus: the pyritised specimen figured in Pl.III, Figs.4a-d (Avram's collection, IG P18892).

Derivatio nominis: transitional between the genera *Barremites* and *Barremittes*.

Locus typiscus: Svinița, the pass along the left side of the Vodiniciki valley (VS).

Stratum typicum: Upper Barremian, below the beds with *Imerites*.

Material: three pyritised nuclei, two of which (the holotype and another) coming from the same bed, and the third from the cutting of the Orșova-Svinița highway, 175 m south-east of the bridge over the Vodiniciki valley (site 2+40) (IG P 18893).

Description. The holotype preserves only the phragmocone, displaying relatively narrow umbilicus, with an almost vertical umbilical wall, with angular margin and sub-trapezoidal whorl section, having almost subparallel (slightly divergent) inner half of the sides and outer half gently concave, convergent toward the venter. The only ornamentation consists of constrictions, rising shallow and rare at 17 mm diameter, then progressively deeper and denser, so that the last half a whorl exhibits 6 of them; they are generally prorsiradiate, with a backward flexure at mid-sides. The suture line with the first lateral lobe narrower than in the typical representatives of the genus.

Measurements:

holotype 36 mm 6.7(0.19) 7.8(0.50) 10.5(0.29) 0.59
Pl.III, Fig.2 30 5.7(0.19) 14.5(0.48) 8.5(0.28) 0.58

Variability: the umbilical wall of the paratype is not so very steep as in the holotype and the venter is more evidently tabulate.

Remarks. The lateral view of the shell is comparable to that of *Barremites* ex gr. *difficilis* mentioned above, figured in Pl. I, Figs. 4a-c, and to "*Desmoceras*" *Falloti* KILIAN (= *D. charrierianus* in Fallot, 1894, pl.IX, Figs. 1a-c). It stands apart from the former of these species by its spiral depression of the sides and by the larger first lateral lobe, and from the latter by its much larger umbilicus and by the significantly different suture line (which, in the latter, displays trifid, almost symmetrical first lateral lobe).

Occurrence: Upper Barremian, below the beds with *Imerites*.

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Caption of Plates

Plate 24. I

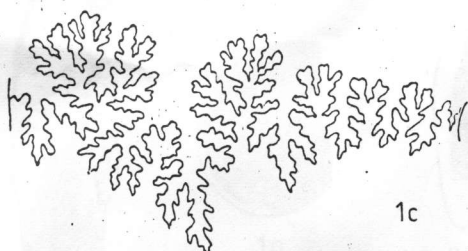
- Figs. 1a-c *Barremites difficilis* (d'ORBIGNY), x 2/3; type and suture line as figured by Roman (1938).
Figs. 2a-b, 3 *Barremites* ? sp., x 1. The best preserved specimens still existing in d'Orbigny's collections at the Museum of Natural Sciences, Paris: 2, labelled as lectotype of *Barremites difficilis*; 3, the best preserved syntype except the "lectotype". None of them preserves the suture line. (Plaster casts housed in the Geological Institute of Romania repository, no.IG P18894, 18895).
Figs. 4a-c, 5a-c *Barremites* ex gr. *difficilis* (d'ORBIGNY), x 1. Pyritised individual of Svinița, proving similar sutures to that figured by Roman (1938): 4b, whorl section at the diameter of 47.5 mm; 4c, suture line at the diameter of 41 mm; 5b, whorl section at the diameter of 47,3 mm; 5c, suture line at the diameter of 38.8 mm. Both specimens gathered from the Upper Barremian, in the Danube left bank, some 235 m downstream the Vodiniciki valley mouth (sites 2+100= IG P 18878 and O-P= IG P 18879, respectively).

Plate 24.II

- Figs. 1a-b, 3, 4a-c *Barremitites strettostoma strettostoma* (UHLIG): 1, lectotype, Tietze's coll., from Svinița, housed in Sammlung der geologischen Bundesanstalt, Wien (1a, x 1; 1b, x 3 to be observed its whorl section); 3 and 4 (IG P 18880, x 1), Upper Barremian, left bank of the Danube some 170-200 m downstream the Vodiniciki valley mouth (sites 2+40 and O, respectively): 4b, whorl section at the diameter of 49 mm, 4c, suture line at the diameter of 26 mm.
Figs. 2a-c, 5a-c, 6a-b *Barremitites strettostoma tietzei* n. ssp. 2, x 1, Tietze's specimen (1872, pl. IX, Fig.5; = Uhlig, 1883, Pl. XVII, Fig.4) from Svinița, housed in Sammlung der geologischen Bundesanstalt, Wien (2c, its suture line at the diameter of 25 mm); 5, topotype (IG P18887) and 6, holotype (IG P 18886), both x 1, gathered from the cutting of the Orșova-Svinița highway, 175 m south-east of the Vodiniciki valley (site 2+40) (5c, suture line at the diameter of 30,3 mm; 6b, whorl section at the diameter of 45 mm).
Fig. 7 *Barremitites* cf. *strettostoma* (UHLIG), x 1. Crushed specimen recorded in the lowermost Upper Barremian, on the Tiganski valley, Svinița (site T8/8) (IG P18884).

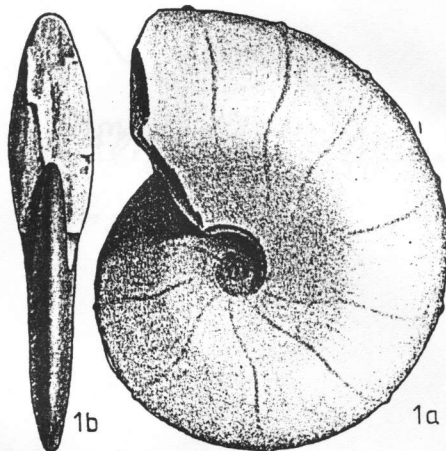
Plate 24.III

- Figs. 1a-d, 2, 2a-d *Barremitites panae* n. sp. 1, Holotype (IG P18888), 2, paratype (IG P 18889), assembled in Figs 1a+2, x 1; both recorded in the lower part of the Upper Barremian, in the left side of the Vodiniciki valley (site VS) (1c, whorl section at the diameter of 50 mm; 2c, whorl section at the diameter of 28 mm; 1d, suture line at the diameter of 45 mm; 2d, suture line at the diameter of 26,5 mm).
Figs. 3a-d *Barremitites neagui* n. sp. (IG P 18890), x 1; from the left side of the Danube, some 150 m downstream the Vodiniciki valley mouth (site L+O). 3c, whorl section at the diameter of 28 mm; 3d, suture line at the diameter of 28 mm.
Figs. 4a-d, 5a-c *Barremitites* ? *transitorius* n. sp. 4, holotype (IG P 18892), Upper Barremian, from the left side of the Vodiniciki valley (VS); 5, paratype (IG P 18893) from the cutting of the Orșova-Svinița highway, some 175 m south-east of the Vodiniciki valley (site 2+40). 4a-b and 5a-b, x 1. 4c, whorl section at the diameter of 35 mm, 4d, suture line at the diameter of 27,3 mm; 5c, suture line at the diameter of 30 mm.



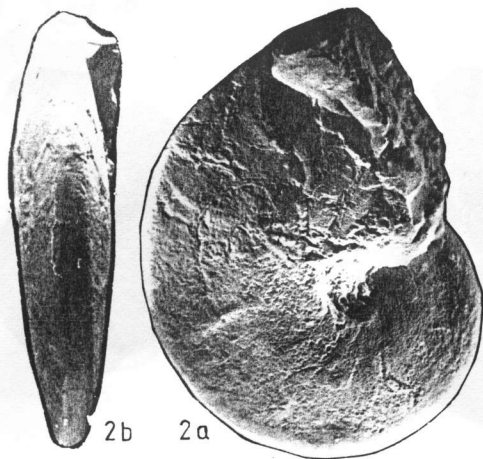
1c

FIG. 388. — *Desmoceras (Barremites) difficile* d'Orb. Type. (Réd. 2/3). BARRÉMIEN.



1b

1a

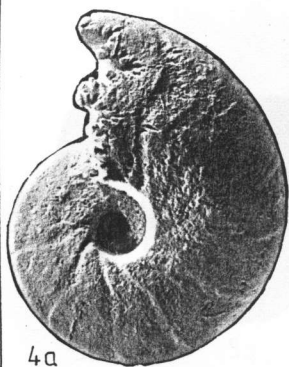


2b

2a



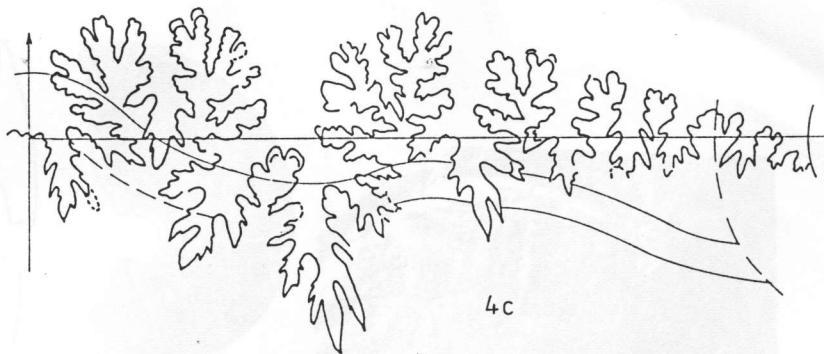
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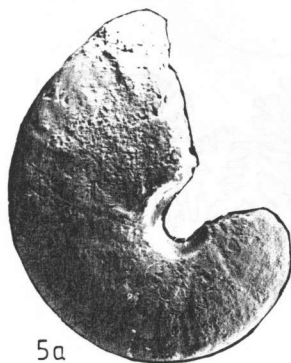
4a



4b



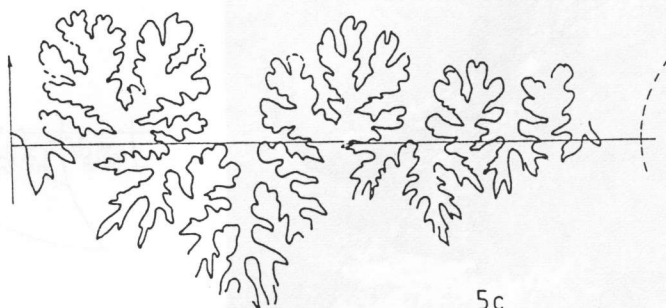
4c



5a



5b



5c



1b



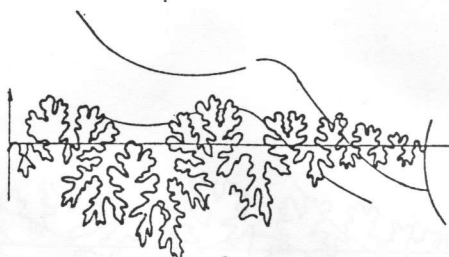
1a



2b



2a



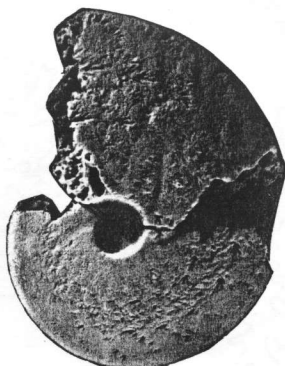
2c



3



4b



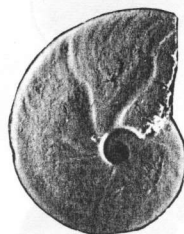
4a



4c



5b



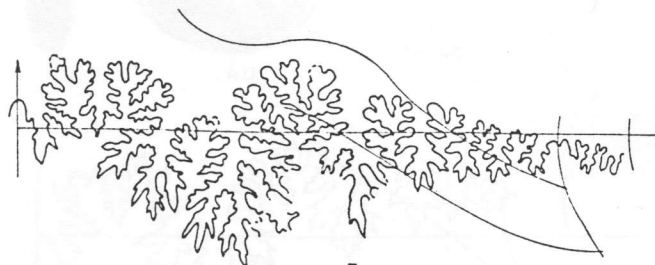
5a



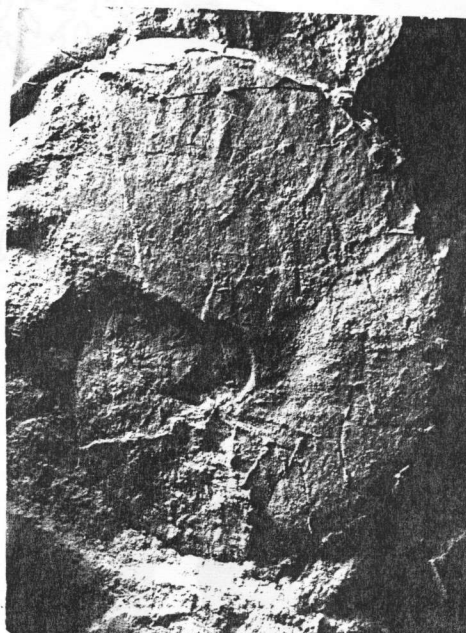
6b



6a



5c



7

