BARREMITITES, NEW GENUS OF THE FAMILY EODESMOCERATIDAE WRIGHT, 1955 (AMMONITINA)
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Abstract: The genus proposed here, Barremitites (type species: Haploceras streptostoma 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 dissymmetrical first lateral lobe. Beside the type species of the genus, other three new species: Barremitites penae n. sp., B. neagu n. sp. and B. transitorius n. sp. are described and figured.

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

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

Ammonites difficilis d’ORBIGNY, 1841, the type species of this 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 Kilián, 1920), or attributed to the loss in the meantime (and, thus, impossible to be verified) d’Orbigny’s type (Roman, 1938). Nevertheless, Barremitites 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 (called “periumbilical 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 this group were presented in the literature as distinct species or subspecies, such as Barremites hemiptychus KILIAN, B. difficilis dimbovicorensis BREŠKOVSKI, 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 Svinia (SW Romania, near the Danube) of this group, although wider umbilicate and wider whorled than the typical B. difficilis, display the suture line (Plate I, Figs. 4c and 5c) similar to that figured by Roman (1938) and the whorl section almost identical to those of B. difficilis dimbovicorensis 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. muierensii BREŠKOVSKI and also, some unnamed ones. By comparison, the group of Haploceras streptostoma UHLIG, 1883, is different from typical Barremites by the whorls deprived of any periumbilical side depression, by subparallel sides in their inner half and a display of 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” streptostoma, but also to some other species, all grouped here in a new genus, related to Barremites, for which the name Barremitites could emphasise this relationship.

Genus Barremitites n. g.
Type-species: Haploceras streptostoma (UHLIG);
Upper Barremian and lowermost Aptian, Svinia.

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 riblets in between; suture line with a wide and very dissymmetric first lateral lobe.

Age: Upper Barremian-Lower Aptian.

Barremitites streptostoma (UHLIG)
Plate II, Figs. 1a-b, 2a-c, 3, 4a-c, 5a-c, 6a-b, 7

1978 Barremites ? streptostoma (UHLIG), Avram, p.19, PLIII, Figs. 2-2, 3 (figured 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, PLXVII, Figs. 3a-b, figured here in PL.II, Figs. 1a-b) is a small nucleus deprived of any clear constrictions, but obviously continued with the stage figured here in 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 falciform constrictions, with falciform riblets 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:**

<table>
<thead>
<tr>
<th>Barremities strettostoma s.str.</th>
<th>Site</th>
<th>O</th>
<th>W</th>
<th>WH</th>
</tr>
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<tbody>
<tr>
<td>lectotype</td>
<td>23.5</td>
<td>3.5</td>
<td>12.6</td>
<td>5.7</td>
</tr>
<tr>
<td>IG P 18882 E</td>
<td>23.5</td>
<td>3.4</td>
<td>12.3</td>
<td>6.3</td>
</tr>
<tr>
<td>IG P 18881 Vd</td>
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<td>4.1</td>
<td>13.6</td>
<td>6.6</td>
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<tr>
<td>IG P 18880 L</td>
<td>30.6</td>
<td>4.9</td>
<td>16.2</td>
<td>7.9</td>
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<tr>
<td>&quot; 2+40</td>
<td>41</td>
<td>5.3</td>
<td>22.3</td>
<td>11.3</td>
</tr>
<tr>
<td>&quot; O-R</td>
<td>47</td>
<td>6.2</td>
<td>23.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Pl.II, Fig. 4 O</td>
<td>49.3</td>
<td>6.8</td>
<td>26</td>
<td>2.3</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Barremities strettostoma tietzei</th>
<th>Site</th>
<th>O</th>
<th>W</th>
<th>WH</th>
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<td>holotype</td>
<td>45.5</td>
<td>7</td>
<td>24</td>
<td>11.2</td>
</tr>
<tr>
<td>2+40 (56)</td>
<td>9</td>
<td>14.5</td>
<td>0.49</td>
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<tr>
<td>Pl.2. Fig. 5</td>
<td>31.3</td>
<td>4.9</td>
<td>17</td>
<td>7.8</td>
</tr>
<tr>
<td>Tietze’s specimen</td>
<td>26.8</td>
<td>4.3</td>
<td>14</td>
<td>6.5</td>
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</table>

**Remarks:** The whole type material of the species, preserved in the Sammlung der geologischen Bundesanstalt, Wien, comes from Svinija. 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 emphasise 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 with its individuals crushed (Pl. II, Fig. 7). The same features — a very narrow umbilicus, with angular margin, the falciform 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 *Barremities strettostoma* rather than to d’Orbigny’s species.

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

**Barremities panae n.sp.**  
*Pl. 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 Reader Ioana Pană (University of Bucharest)

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

**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 verter; it is covered with 5 prosiradial 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 of about 14 mm in 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.

**Variability:** One of the non-figured specimens displays slightly expressed riblets between the constrictions.

**Occurrence:** The same as for the holotype.
Measurements:

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<tbody>
<tr>
<td>holotype (PL.III, Fig.1) (35)</td>
<td>6.3 (0.18)</td>
<td></td>
</tr>
<tr>
<td>paratype (PL.III, Fig.2) 27</td>
<td>5.1 (0.18)</td>
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<tr>
<td>assembled (1+2) 44</td>
<td>8.9 (0.20)</td>
<td></td>
</tr>
<tr>
<td>non-figured specimen 35</td>
<td>6.3 (0.18)</td>
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<tr>
<td>18.2 (0.52)</td>
<td>10.3 (0.29)</td>
<td>0.56</td>
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<tr>
<td>13.9 (0.50)</td>
<td>7.9 (0.28)</td>
<td>0.57</td>
</tr>
<tr>
<td>21.7 (0.50)</td>
<td>(0.28)</td>
<td>0.57</td>
</tr>
<tr>
<td>17.5 (0.50)</td>
<td>10.3 (0.29)</td>
<td>0.58</td>
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Barremicitus neaguí n.sp.

Pl. III, Figs.3a-d

Holotype: the figured specimen (Avram's Collection, IG P 18890).

Derivatio nominis: species devoted to Professor Theodor Neagu of 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 in the Vodineciy valley (site L+0).

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 of Svinja (site F) (IG P 18891).

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

Measurements (of the holotype):

28 mm: 46 (0.16) 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 Barremicitus streptostoma 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 if the mature stage could not be established yet.

Occurrence: The same as for the holotype.

Barremicitus ? transitorius n.sp.

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

Holotype: the pyritised specimen figured in Pl. III, Figs. 4a-d (Avram's collection, IG P 18892).

Derivatio nominis: transitional between the genera Barremicitus and Barremicitidae.

Locus typicus: Svinja, the pass along the left side of the Vodineciy valley (VS).

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

Material: Three pyritised nuclei, two of which (the holotype and another) come from the same bed, and the third from the cutting of the Orsova-Svinja highway, 175 m south-east of the bridge over the Vodineciy valley (site 2+40) (IG P 18893).

Description: The holotype preserves only the phragmocone, displays relatively narrow umbilicus, with an almost vertical umbilical wall with angular margin, and sub-trapezoid 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 of 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:

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<table>
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<tbody>
<tr>
<td>holotype 36</td>
<td>6.7 (0.19)</td>
<td>7.8 (0.50)</td>
</tr>
<tr>
<td>Pl.III, Fig. 2</td>
<td>30 5.7 (0.19)</td>
<td>14.5 (0.48)</td>
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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 the Barremicitus 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 trid, almost symmetrical first lateral lobe).

Occurrence: Upper Barremian, below the beds with Imerites.

References:


Captions of Plates

Plate 24. I

Figs. 1a-c, 3 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 P 18894, 18895).

Figs. 4a-c, 5a-c Barremites ex gr. difficilis (d’ORBIGNY), x 1. Pyritised individuals of Svinija, proving similar sutures to that figured by Roman (1938) (4b, whorl section 47.5 mm in diameter; 4c, suture line 41 mm in diameter; 5b, whorl section 47.3 mm in diameter; 5c, suture line 38.8 mm in diameter). Both gathered from the Upper Barremian, in the Danube left bank, some 235 m downstream in the Vodniciki valley mouth (sites 2+100= IG P 18878 and O-P= IG P 18879, respectively).

Plate 24. II

Figs. 1a-b, 3, 4a-c Barremmites streptostoma streptostoma (UHLIG), 1. Lectotype, Tietze’s coll., from Svinija, housed in Sammlung der geologischen Bundesanstalt, Wien (1a, 3 and 4a, x 1; 1b, x 3, its whorl section is to be observed); 3 and 4 (IG P 18880), Upper Barremian, left bank of the Danube, some 170-200 m downstream in the Vodniciki valley mouth (sites 2+40 and O, respectively); 4b, whorl section 49 mm in diameter, 4c, suture line 26 mm in diameter.

Figs. 2a-c, 5a-c, 6a-c Barremmites streptostoma tietzei n.ssp. 2, x 1, Tietze’s specimen (1872, pl.IX, 6a-d Fig. 5) from Svinija, housed in Sammlung der geologischen Bundesanstalt, Wien (2c, its suture line 25 mm in diameter; 5c, suture line 25 mm in diameter; 6c, topotype (IG P 18887), 6, holotype (IG P 18886), both x 1, gathered from the cutting of the Orsoga-Svinija highway, 175 m south-east of the Vodniciki valley (site 2+40) (5c, suture line 30 mm in diameter; 6b, whorl section 45 mm in diameter).

Fig. 7 Barremmites cf. streptostoma (UHLIG), x 1. Crushed specimen recorded in the lowermost Upper Barremian, on the Tiganski valley, Svinija (site T8/8) (IG P 18884).

Plate 24. III

Figs. 1a-d, 2, 2a-d Barremmites pennae n.sp. 1, Holotype (IG P 18888), 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 Vodniciki valley (site VS) (1c, whorl section 50 mm in diameter; 2c, whorl section 28 mm in diameter; 1d, suture line 45 mm in diameter; 2d, suture line 26.5 mm in diameter).

Figs. 3a-d Barremmites neagui n.sp., holotype (IG P 18890), x 1. In the left side of the Danube, some 150 m downstream in the Vodniciki valley mouth (site L+0). 3c, whorl section 28 mm in diameter; 3d, suture line 28 mm in diameter.

Figs. 4a-d, 5a-c Barremmites? transitorius n.sp. 4, holotype (IG P 18892), Upper Barremian, from the left side of the Vodniciki valley (VS); 5, paratype (IG P 18893) from the cutting of the Orsoga-Svinija highway, some 175 m south-east of the Vodniciki valley (site 2+40). 4a-b and 5a-b, x 1. 4c, whorl section 35 mm in diameter; 4d, suture line 27.3 mm in diameter; 5c, suture line 30 mm in diameter.