

## BIVALVES (Subclass ANOMALODESMATA) FROM MIDDLE JURASSIC DEPOSITS OF THE WESTERN FLANK OF BUCEGI MOUNTAINS

Iuliana LAZĂR<sup>1</sup>

**Abstract.** Twenty-two bivalve species were recorded within the rich faunal assemblages of the Middle Jurassic deposits outcropping along the western flank of the Bucegi Mountains. These species belong to Subclass Anomalodesmata, Order Pholadomyoidea and among them, ten species were already described and figured in a previous paper. This paper introduces the following twelve taxa, some for which was possible to use biometrical methods for species identification and comparison, due to the high number of individuals collected. These bivalves occur within the Bajocian – Bathonian deposits of the Bucegi Mountains and they were collected in rocks such as calcareous sandstones, argillaceous silts and biocalcarenes.

**Keywords:** Bivalves, Anomalodesmata, Pholadomyoidea, Middle Jurassic, Bucegi, Romania.

The fauna discussed in this paper was collected from the rich, fossiliferous Middle Jurassic deposits that outcrop along the western slope of the Bucegi Mountains (Southern Carpathians). The main fossiliferous sites of this area are the following, listed from north to south: La Politzie Saddle, Gaura Valley, Cătunului Valley, Guțanu Glade, Grohotișul Mountain, Strunga Pass, Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului. The most complete Middle Jurassic sequence outcrops in Muntele Grohotișu – Obârșia Văii Tătarului sector. Text - Figure 1 shows the Middle Jurassic log of this sector and the precise position of the fossiliferous beds yielding the fauna approached in this paper. These deposits was assigned to Strungulița Formation (Bajocian) and Strunga Formation (Bathonian – Lower Callovian) by Patrușiu (in Patrușiu et al., 1980).

The fossiliferous deposits of this area were studied since the last century and a short history on the research activity done here was given in a previous paper (Stoica, 1997; Lazăr, 1999). The majority of the previous papers gives only species lists or illustrates only a low number of species. Since the cited paper (Lazăr, 1999) and continued with the present paper and the flowing ones, a detailed description and illustration of the fossil bivalves, gastropods and brachiopods are and will be given. Within the Bivalvia Class, Anomalodesmata Subclass, I identified 22 species belonging to following families: Pholadomyidae, Ceratomyidae, Pleuromyidae, Laternulidae, Thraciidae and Cuspidariidae.

Among them, 10 species (belonging to families Pholadomyidae and Ceratomyidae) were described in a previous paper (Lazăr, 1999). This paper presents the following 12 taxa.

### Taxonomy

- Class Bivalvia LINNÉ, 1758
- Subclass Anomalodesmata DALL, 1889
- Order Pholadomyoidea NEWELL, 1965
- Family Ceratomyidae ARKELL, 1934
- Genus *Gresslya* AGASSIZ, 1843
- Gresslya peregrina* (PHILLIPS, 1819)
- rostrata* AGASSIZ, 1842
- Plate I, Figures 1 – 11

1842 *Gresslya rostrata* Agassiz, t. 12b, Figures 7, 8.  
1854 *Gresslya peregrina* var. *rostrata* Agassiz; Morris & Lycett, p. 105, Plate X, Figure 7.

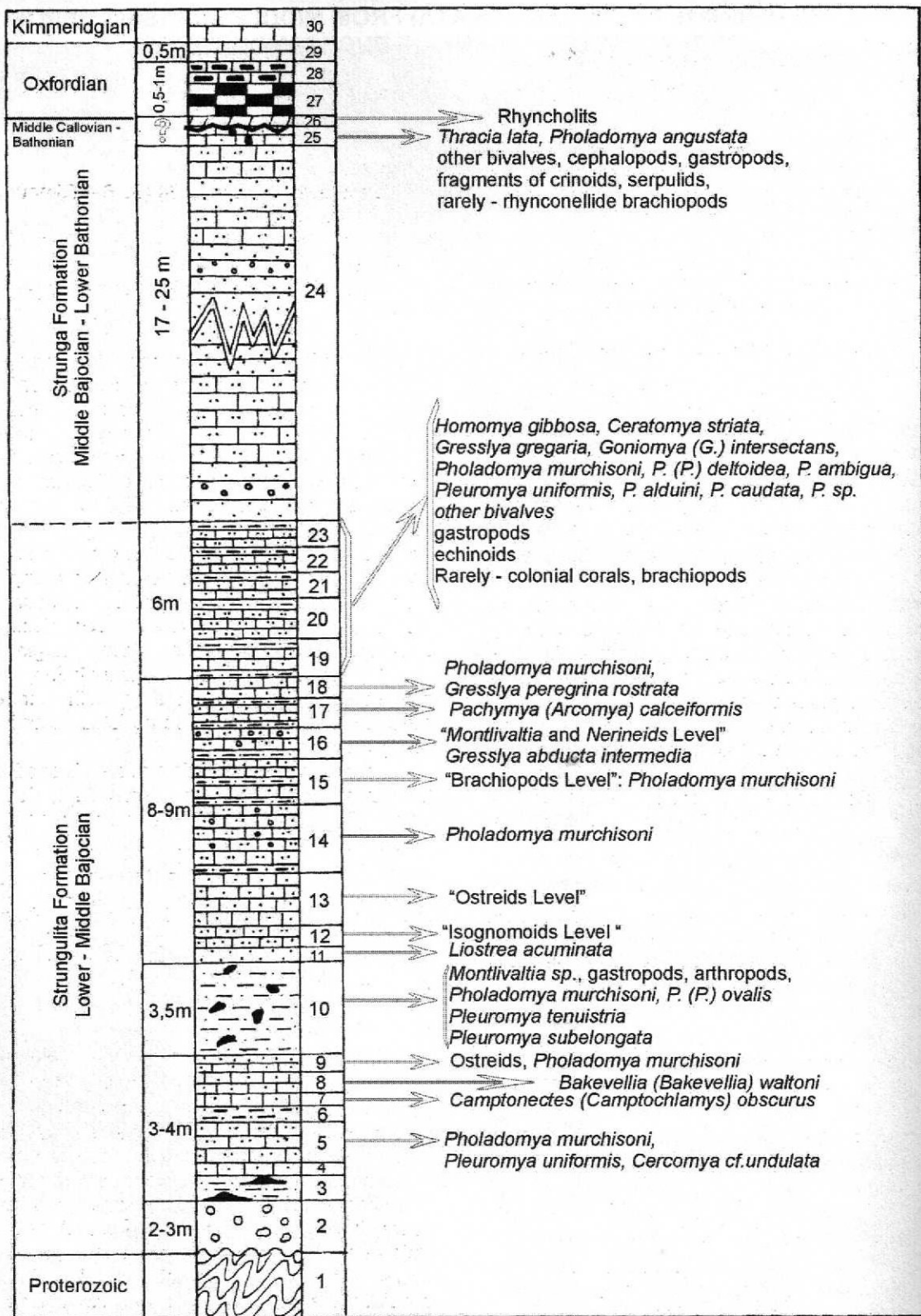
**Material:** 15 specimens (LPBIII 1361-1375) represented by internal casts with a good degree of preservation.

**Measurements:** L = 46,24 (36,3 – 59,4mm); H = 30 (23 – 38,3mm); I = 22,8 (18,1 – 31,3mm); H / L = 0.64 (0.60 – 0.69); I / L = 0.48 (0.47 – 0.52)

**Description:** The shell is oval, elongated along the anteroposterior axis, the anterior margin rounded; the umbo is prosogir; the lunule is small and deep; the posterior margin dives obliquely from umbo to the ventral margin so that the posteroventral end is sharp angled. The posteroventral end is acuminate and slightly compressed laterally; the ventral margin is very slightly arched to straight. The ornamentation is hardly visible on the internal casts and possibly it is represented by

<sup>1</sup> University of Bucharest, Faculty of Geology and Geophysics, Laboratory of Palaeontology, 1, N. Balcescu Ave., 70111, Bucharest, ROMANIA, iulia\_lazar@k.ro

Figure 1. Synthetic log of Strungulita Pass - Tatarul Peak - Tataru Valley  
(provenance levels of the mentioned species)



Legend: 1-Leaota cristalline; 2-white quartzitic conglomerate; 3-sandy clay with coal intercalation; 4-grey sandstone; 5- quartzitic sandstone; 6-9-grey calcareous sandstone; 10- pelrites alternating with arenitic interlayers and limonitic concretions; 11-calcareous sandstone with osterids; 12-calcareenites; 13-calcareous sandstone with osterids; 14-biocalcareous sandstone with osterids; 15,17,18,19,21- calcareous sandstone alternating with silts; 16-ooisparitic calcarenites; 20,22,23-biocalcareenites; 24-alternation with calcarenites, quartzitic sandstone, biocalcareenites, quartzitic microconglomerate levels; 25-biocalcareous limestone with harground in the upper part and a rich fauna of ammonites; 26-green or red marly levels; 27-jasper; 28-chert limestone; 29, 30-micritic and ooisparitic limestone. Scale: 1cm=2m

concentric growth striae, sometimes thickened such as small folds.

**Remarks:** Our samples resemble very well those described by Morris and Lycett (1854). **Occurrence:** Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului – level 18 (Text-Figure 1) - gray, calcareous sandstone, Bajocian in age.

**Stratigraphic and geographic distribution:** England - Bathonian.

*Gresslya abducta intermedia* WETZEL, 1937  
Plate I, Figures 12 – 19

1937 *Gresslya abducta intermedia* Wetzel, p. 144, Plate XV;

1974 *Gresslya abducta intermedia* Wetzel; Bărbulescu, p.119, Plate XXVII, Figure 10.

**Material:** 12 specimens (LPBIIL 1376 – 1378), internal casts with a medium degree of preservation.

**Measurements:** L = 52,65 (48 – 55,8mm); H = 35,45 (31,5 – 38,7mm); I = 27,22 (22 – 31,8mm); H / L = 0,66 (0,65 – 0, 69); I / L = 0,50 (0,57 – 0,47)

**Description:** This species generally resembles *G. gregaria* but it differs from *G. gregaria* because it has larger sizes and the anterior part is more prominent and rostrate; the paleal margin is slightly arched, almost straight, the posterodorsal margin dives obliquely from the umbo to the ventral margin and makes with it a sharp angle which is higher than in *G. peregrina rostrata*; the posteroventral end is acuminate and slightly flattened laterally. The ornamentation is represented by concentric growth striae, which are sometimes thickened as folds distributed at irregular intervals.

**Remarks:** Wetzel (1937, p. 144) indicated for *Gresslya abducta var. intermedia* the ratio I/L=0.69, identical with that obtained for our specimens. The variety *jurassiformis* (Wetzel, 1937, p. 144, Plate XV, Figure 11) is more elongated anteroposterior and the I/L ratio given by Wetzel, is very reduced.

**Occurrence:** Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului: level 16 (Text-Figure 1): oosparite calcarenites, Bajocian in age.

**Stratigraphic and geographic distribution:** Romania: Central Dobrogea: Upper Bathonian – Callovian; Switzerland: Bajocian

*Gresslya gregaria* (ZIETEN, 1830)  
Plate II, Figures 1 -18

1830 *Lutraria gregaria* Zieten, p. 85, Plate 64, Figures 1a-c;

1862 *Lutraria gregaria* Zieten; Goldfuss, p. 244, Plate 152, Figures 10a,b;

1867 *Gresslya gregaria* (Zieten); Laube, p.45;

1916 *Gresslya gregaria* (Zieten); Jekelius, p. 233;  
1969 *Gresslya gregaria* (Zieten); Cox in Moore, p. 841, Figure 18(2c);

1986 *Gresslya gregaria* (Zieten); Pugaczewska, p. 68, Plate 33, Figures 6, 7.

**Material:** 32 specimens (LPBIIL 1331 – 1360), internal casts with a medium degree of preservation.

**Measurements:** L = 44,24 (30,6 – 59mm); H = 32,84 (23,3 – 44,7mm); I = 24,38 (15,3 – 33,5mm); H / L = 0,74 (0,70 – 0, 79); I / L = 0,54 (0,50 – 0,59)

**Description:** The shell is oval-elongated, un-equilateral, slightly un-equivalve, as part of the right valve is slightly higher than the left valve which is covered along the dorsal margin. The umbo is prosogir, less prominent, occurring in the third part of the dorsal margin. In some individuals, the right valve's umbo is less tall than that of the left valve. The lunule is reduced in surface and slightly depressed. The external shell's outline is featured by the rounded anterior margin, straight or slightly bent anterodorsal margin, posterodorsal margin diving obliquely to the posteroventral angle; rounded posteroventral margin. The almost all individuals show posterior commissural openings very narrow; the ventral margin is largely convex. The ornamentation is represented by concentric growth striae, sometimes slightly thickened as folds occurring at regular intervals.

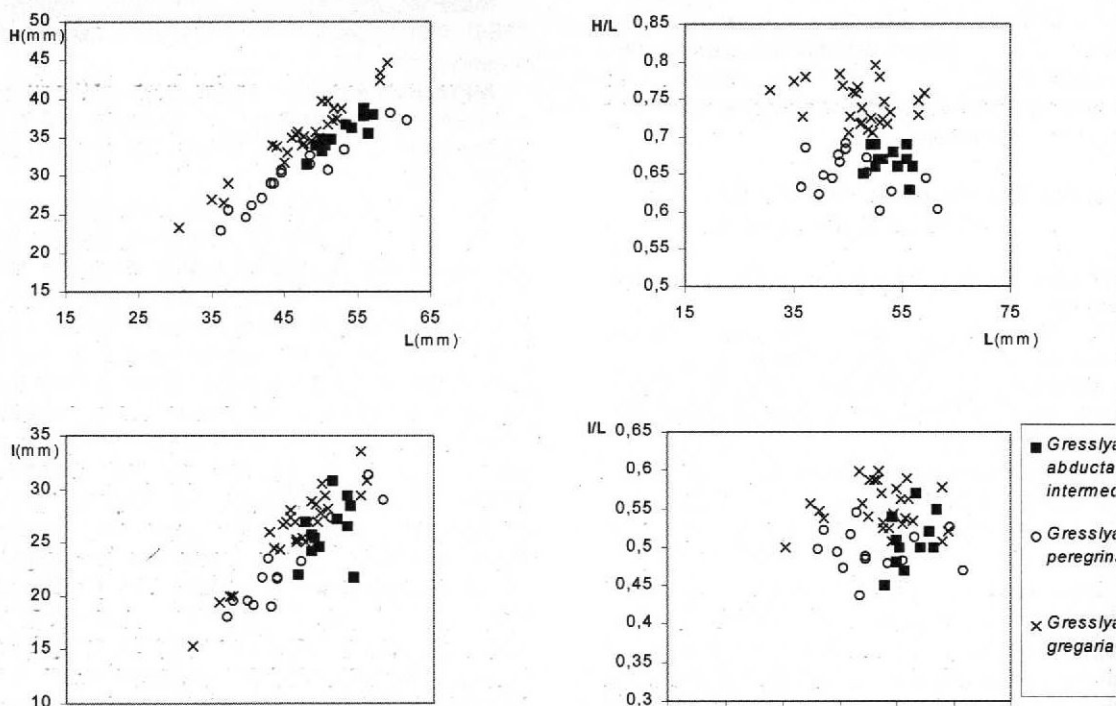
**Occurrence:** La Politzie Saddle, Grohotișul Mountain, Strunga Pass, Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului, within the calcareous sandstone levels occurring to the top of the Strungulița Formation, Bajocian.

**Stratigraphic and geographic distribution:** Romania: Hăghimaș (Piatra Liciului): Bajocian – Bathonian in age; Poland: Upper Bajocian – Bathonian; Germany: Bajocian – Bathonian.

Text-Figure 2 shows dispersion polygons for the variation of height, inflation, H/L ratio and I/L ratio depending on length. These graphs are given for the three described species of the genus *Gresslya*. It can be observed that the dispersion polygons for the three species resemble very much. The species separation on biometric grounds is more clear when taking in consideration the height variation and the H/L ratio depending on the length. The separation of the three species is not very clear if we consider the variation of thickness (inflation) and of the I/L ratio depending on length as the three species clearly show very similar inflation for the same length values. In the same time, separating the three species was possible using non-quantifying characters such as the shape of the anterior part, which is more prominent

and rostrate for *G. abducta intermedia* when compared to *G. gregaria*, or the more acuminate and slightly compressed laterally posteroventral part of *G. peregrina rostrata*

compared to *G. gregaria*. Also, *G. peregrina rostrata* shows a more acuminate and slightly compressed laterally posteroventral end when compared to the other two species.



**Figure 2.** Separation of species *Gresslya abducta intermedia* Wetzel, *Gresslya peregrina rostrata* Agassiz, *Gresslya arearia* (Zieten) using dispersion plots for height variation, inflation and  $H/L$ ,  $I/L$  depending on

Family PLEUROMYIDAE DALL, 1900

Genus PLEUROMYA AGASSIZ, 1842

*Pleuromya uniformis* (J. SOWERBY, 1813)  
Plate III, Figures 1 - 9

1813 *Unio uniformis* nov. sp. J. Sowerby, p. 83, Plate 33, fig.4;

1854 *Myacites terquemea* Morris & Lycett, p. 115, Plate XII, Figures 6, 6a;

1854 *Myacites securiformis* Morris & Lycett, p. 136, Plate XIII, Figure 15;

1854 *Myacites decurtatus* Morris & Lycett, p. 137, Plate XV, Figures 10a, 10b;

1863 *Lutraria jurassi* Brongn.; Goldfuss, p. 243, Plate 152, Figure 7;

1888 *Myopsis jurassi* Brongn.; Herbich, p. 328, Plate XXVIII, Figure 4;

1899 *Pleuromya jurassi* Brongn.; Greppin, p. 59;

1916 *Pleuromya jurassi* Brongn.; Jekelius, p. 232;

1948 *Pleuromya uniformis* (Sow.); Cox & Arkell, p. 40;

1957 *Pleuromya uniformis* (Sow.); Himšiašvili, p.155, Pl.XIX, Figures 5, 6;

1965 *Pleuromya uniformis* (Sow.); Cox, p. 131, Plate 20, Figure 6;

1978 *Pleuromya uniformis* (Sow.); Duff, p.116, Plate 13, Figures 11, 14, 18, 21;

1989-1990 *Pleuromya uniformis* (Sow.); Dikani & Makarenko, p. 27-28, Plate 31, figs.16-24;

1996 *Pleuromya uniformis* (J. Sow.); Pandey et al., p.62, Plate 7, Figures 5-11;

1998 *Pleuromya uniformis* (J. Sow.); Bărbulescu in Dragastan et al., p. 145, Plate VIII, Figure 12.

1999 *Pleuromya uniformis* (J. Sow.); Bărbulescu, p. 43, Plate V, Figures 7, 8.

**Material:** 12 samples (LPBIIL 1388-1399) internal casts with a medium degree of preservation.

**Measurements:**  $L = 39,45$  (26 - 50,2mm);  $H = 21,86$  (14,5 - 27,2mm);  $I = 16,84$  (11,5 - 23,5mm);  $H/L = 0,55$  (0,53 - 0,56);  $I/L = 0,42$  (0,37 - 0,46).

**Description:** The shell is middle sized, elongated anteroposterior, un-equilateral, sub-equivalve, with the right valve less high than the left valve along the dorsal margin. The umbo is prosogir, occurring in the anterior third part of the shell. The anterodorsal margin is short, very slightly concave, without lunule. The anteroventral margin is short, with the anteroventral angle between  $70^{\circ}$ - $80^{\circ}$ . The ventral margin is long, slightly convex, the convex character of the ventral margin gets stronger towards the posterior end, passing slightly to the posterior margin, which is more rounded. On a single, relatively well-preserved sample (LPBIIL 1393, Plate III, Figure 4) can be recorded a slight sulcus on the anterior part. The ornamentation is represented by concentric

growth striae, which are fine or slightly thickened, with irregular spaces, usually smooth. Only in sample LPB 1393 can be hardly seen 2-3 radial, extremely fine structures.

**Remarks:** The synonymy of species *P. uniformis* was widely discussed by Arkell (1935, p. 327, after Duff, 1978), Cox & Arkell (1948, p. 40), Duff (1978, p. 116-117). This species was described under several denominations and the most common are *P. jurassi* (Brongniart), *P. tellina* Agassiz, *P. voltzi* Agassiz, *P. elea* (d'Orbigny). Arkell showed that all these denominations actually refer to the same species, the first valid name in use being *P. uniformis* (J. Sowerby) (after Duff, 1978). The samples from Strunga resemble very much dimensionally and in H/L, I/L ratios the samples described by Himsiasvili (1957) and by Dikani (1989). Our species are confined dimensionally to the small and middle-sized species described by Duff (1978) and also they are clearly less than those described by Bărbulescu (1989).

**Occurrence:** La Politzie Saddle, Gaura Valley, Guțanu, Glade, Grohotișul Mountain, Strunga Pass, Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului: Bajocian - ?Bathonian in age, abundant within the calcareous sandstones and clacarenites.

**Stratigraphic and geographic distribution:** Central Dobrogea: Upper Bathonian - Callovian: Mireasa, Cheia - relatively abundant, Tichilești - rare, Hăghimaș Mountains (Piatra Liciului): Bajocian - Bathonian, Codlea: Bathonian. England, France, Germany, Switzerland, Poland, Russia, from Bajocian to Portlandian.

*Pleuromya tenuistria* (MÜNSTER)

AGASSIZ, 1842

Plate IV, Figures 1 - 4

1842 *Pleuromya tenuistria* Agassiz, p.243, Plate XXIV;

1863 *Lutraria tenuistria* Münster; Goldfuss, p 246., Plate 153, Figure 2;

1871-1873 *Pleuromya tenuistria* Münster; Terquem et Jourdy, p.83;

1899 *Pleuromya tenuistria* (Münster) Agassiz; Greppin, p. 61, Plate VII, Figures 2, 2a, 4, 4a;

1973 *Pleuromya tenuistria* (Goldfuss, 1836); Romanov, p.151, Plate XVIII, Figures 5-6;

1986 *Pleuromya tenuistria* (Münster); Pugaczewska, p. 71, Plate 32, Figure 5; Plate 34, Figure 5.

**Material:** a single specimen (LPBIII L 1400) with a medium degree of preservation.

**Measurements** (in mm):

	L	H	I	H/L	I/L
Greppin, 1899	20-50	-	-	0.66	0.56
Pugaczewska, 1986	30	20	16	0.66	0.53
Strungulița	36.2	25.2	17.6	0.69	0.48

**Remarks:** The collected sample resembles very much those described and figured by

Greppin (1899) in general shape (excepting the posterodorsal margin) and the ornamentation. The ornamentation observed using a dissecting microscope, which is preserved exceptionally for our sample, resembles very much that described by Greppin. Extremely fine radiary, granular ribs can be observed and they are overlain by concentric growth rings, sometimes prominent, occurring at regular intervals (Plate IV, Figure 4). The same characteristic micro-ornamentation is recorded by Pugacevska (1986, p. 71).

Greppin shows that this species is relatively easy to recognize by the shallow depressions of the flanks which occur immediately under the umbo, and this character can be well recognized in our specimen. Also, the specimen from Strungulița resembles very well *Myacites securiformis* (Phillips), described and figured by Morris & Lycett (1854, p. 136-137, Plate XII, Figure 15). The shell is elongated anteroposterior with a small umbo occurring in the anterior half, the posterior-dorsal margin goes obliquely downwards, to the posterior-ventral angle. The ventral margin is recurved very largely, almost right in the middle zone. The flanks of both valves present a shallow depression developed from under the umbo to the ventral margin. The ornamentation, although not described by Morris and Lycett (1854), can be observed in their sample figured in Plate XII, Figure 15, resembling closely with our specimen. Morris and Lycett underline that species *M. securiformis* (Phillips) show shell ends as being almost closed (and more than usually for this genus) while in our sample, although it is eroded along the anterior and posterior parts, the openings are clear anteroventral and posteroventral.

On the other hand, the species *M. securiformis* (Phillips), described by Morris and Lycett (1854), is considered a juvenile of *Pleuromya uniformis* (Sowerby) by Cox and Arkell (1948, p. 40) and by Duff (178, p. 116), but this species is very different of our sample.

**Occurrence:** Strungulița Pass, level 10 (Text-Figure 1) - pelrites alternating with arenitic interlayers and limonitic concretions, Bajocian.

**Stratigraphic and geographic distribution:** Romania: Hăghimaș (Piatra Liciului): Bajocian - Bathonian;

This species is frequent in the Upper Bajocian of the Bale region and in the Bathonian deposits of the Moselle region; Poland: Central Uplands in the Bathonian; Germany: Bajocian; Moldova Republic: Upper Bajocian, Turkmenia: Lower Bathonian.

*Pleuromya subelongata* (d'ORBIGNY, 1850)  
Plate III, Figures 24 -27

1850 *Pleuromya subelongata* d'Orbigny, p. 272;

1863 *Myacites sinistra* Agassiz; Lycett, p.82, Plate XXXV, Figure 17;

1867 *Myacites elongatus* Münster; Laube, p. 56;

1871 -1873 *Pleuromya elongata* Münster; Terquem et Jourdy, p. 82;

1899 *Pleuromya elongata* (Münster) Agassiz; Greppin, p.63, Plate VII, Figure 8;

1916 *Pleuromya elongata* Münster; Jekelius, p. 233;

1948 *Pleuromya subelongata* (d'Orbigny); Cox & Arkell, p. 40;

1973 *Pleuromya elongata* (Goldfuss, 1836); Romanov, p. 152, Plate XVIII, Figure 8;

1986 *Pleuromya elongata* (Goldfuss, 1836); Pugaczewska, p. 69, Plate 34, Figures 9a, 9b.

**Material:** Ten samples with a good degree of preservation, preserving shell remains: LPBIII 1401-1404; 1409 from the lower clay level; LPBIII 1405-1408; 1410, from the upper sandstone levels.

#### Measurements (in mm):

	L	H	I	H/L	I/L
Lycett, 1863	50,8 ± 4	25,4	19,05	0,50	0,38
Greppin, 1899	48 - 60	-	-	0,55 - 0,56	0,36 - 0,40
Romanov, 1973	21 - 47	11,75 - 26,4	-	0,55 - 0,56	-
Pugaczewska, 1986	44 - 55	23 - 29	17 - 23	0,52 - 0,53	0,38 - 0,41
Strungulița - lower clay level	45,56 (39-47,6)	27,7 (23,5-29)	18,7 (15,6-21)	0,604 (0,60-0,61)	0,404 (0,39-0,44)
Tâtarul - upper sandstone levels	49,42 (48,8-60)	29,36 (22,5-34)	20,2 (16-22)	0,59 (0,56-0,64)	0,406 (0,36-0,44)

**Description:** the shell is oval-elongated anteroposterior, the dorsal margin is almost horizontal or slightly oblique in the posterior part, the lunule is concave, the umbo is orthogir and slightly depressed, laterally compressed, occurring in the anterior third part of the dorsal margin. In some samples can be hardly seen an attenuated sulcus growing from the umbo and continued obliquely to the ventral margin; the anterior margin is short and rounded, the ventral margin is almost always straight or very slightly arched. The posteroventral margin rounded, with a moderate opening. The ornamentation is represented by concentric growth lines thickened sometimes as flods, occurring at irregular intervals.

**Occurrence:** Strungulița Pass (level 10, Text-Figure 1) – within an alternance of pelrites with arenitic interlayers and limonitic concretions, Bajocian in age.

**Stratigraphic and geographic distribution:** The species was cited in Bathonian deposits from Moselle region, England: Inferior Oolite, Upper Aalenian – Lower Bathonian, Bathonian and Callovian deposits from Dorset, Poland: Upper Bajocian – Upper Bathonian, Republic

of Moldova: Upper Bajocian, W Turkmenia – Bathonian, Germany: Bajocian – Bathonian.

#### *Pleuromya alduini* (BRONGNIART, 1821) Plate IV, Figures 5 – 7

1821 *Donacites alduini* sp. nov. Brongniart, p. 571, Plate 7, Figures 6a, 6b;

1863 *Lutaria alduini* (Brongniart); Goldfuss, p. 243, Plate 152, Figure 8;

1863 *Myacites recurvum* (Phillips); Lycett, p. 81, Plate XXXVI, Figures 4,4a;

1899 *Pleuromya alduini* (Brongniart); Greppin, p. 62;

1916 *Pleuromya alduini* (Brongniart); Jekelius, p. 233;

1948 *Pleuromya alduini* (Brongniart); Cox & Arkell, p. 40;

1957 *Pleuromya alduini* (Brongniart); Himșiașvili, Plate XIX, Figure 3;

1973 *Pleuromya alduini* (Brongniart); Romanov, p. 149-150, Plate XIX, Figures 5, 5a;

1978 *Pleuromya alduini* (Brongniart); Duff, p. 115 – 116, Plate 13, Figures 5-10, 12, 15;

1989-1990 *Pleuromya alduini* (Brongniart); Dikani & Makarenko, p.29, Plate 31, Figures 9-15;

1998 *Pleuromya alduini* (Brongniart); Bărbulescu in Dragastan et al., p. 147, Plate VIII, Figures 3-11, 15,16.

**Material:** eight samples (LPBIII 1411-1418), internal casts with a low degree of preservation.

**Measurements:** L = 41,63 (30 – 56,2mm); H = 28,53 (20 – 35mm); I = 23,26 (15,8 – 31mm); H / L = 0,64 (0,59 - 0,68); I / L = 0,51 (0,45 – 0,58)

**Description:** The shell is medium sized, un-equilateral, with a sub-rectangular or elongated-triangular outline; the umbo is not prominent, occurring in the anterior third part of the dorsal margin; the anterior margin is short and truncate and so the anterior-ventral part makes an angle less than 90° with the ventral margin; the posteroventral margin is rounded and slightly curved upwards; the ventral margin is weakly convex; the lunule is absent and the dorsal margin, immediately anterior to the umbo, is slightly concave. The ornamentation is represented by prominent concentric growth lines, regularly distributed.

**Remarks:** Only five samples show a shallow sulcus going from the umbo and diving towards the ventral margin that is reached in the back of the anteroventral angle, making a weak sinus in the anterior part of the ventral margin. But Bărbulescu (1998, p.147) showed that the occurrence of this sulcus is not a diagnostic character for *P. alduini*, on the basis that many samples of *P. jurassi* (= *P. uniformis*) from the Paris Basin (curate within the Collection of Stratigraphy of the Bucharest University) resemble very closely in dimensions and outline

those of Dobrogea and Bucegi, and they have the anterior groove marked as well.

Taking in consideration the dimensions, and the H/L and I/L ratios, our samples fall within the values given by Bărbulescu (1999, p. 146) for the samples collected from Upper Bathonian deposits of Central Dobrogea. These samples are smaller than those described by Himsiasvili from Donet region.

**Occurrence:** La Politzie Saddle, Guțanu Glade, Strungulița Pass, Tătarul Peak, rare within levels 19-23 (Text-Figure 1) which are represented by an alternance of calcareous sandstones and calcarenites from the top of the Strungulița Formation, Bajocian in age.

**Stratigraphic and geographic distribution:** England: Fuller's Earth Rock (Bathonian) from Dorset and Somerset to Lower Kimmeridgian Clay; France, Germany, Russia: Callovian-Kimmeridgian.

*Pleuromya caudata* TERQUEM et JOURDY, 1871

Plate III Figures 10 – 18

1871 *Pleuromya caudata* Terquem et Jourdy, p. 81, Plate VII, Figures 9-11;

1963 *Pleuromya caudata* Terquem et Jourdy; Bărbulescu, p. 51, Plate V, Figures 41-46; Plate VI, Figures 47-50;

1973 *Pleuromya caudata* Terquem et Jourdy; Romanov, p. 153, Plate XIX, Figures 4, 4a;

1998 *Pleuromya caudata* Terquem et Jourdy; Bărbulescu in Dragastan et al., p. 145, Plate VII, Figures 6-9.

**Material:** 17 samples (LPBIII L 1419-1435), internal casts with a medium degree of preservation.

**Measurements (in mm):**

	L	H	I	H/L	I/L
Terquem et Jourdy, 1871	31-49	13-20	9-15	0,40-0,41	0,29-0,30
A. Bărbulescu, 1998	32-54	16-26	13-19	0,45-0,58	0,30-0,42
Strunga-Tătarul	40,82 (33,2- 48,3)	19,97 (14,6- 24,1)	14,46 (10,8- 17,8)	0,48 (0,41- 0,53)	0,35 (0,32-0,39)

**Description:** The shell is oval-elongated anteroposterior, almost sub-rectangular in shape; the dorsal margin is straight, with a less prominent, ortogir umbo that occurs in the anterior third part; the anterior and posterior margins are rounded. The distinctive characters of the species are represented by the straight or very slightly rounded ventral margin, which is parallel with the posterodorsal margin and by the accentuated roundness of the posterior margin (after Bărbulescu, 1963). Ornamentation can be recorded with great difficulty, only in some samples. When the ornamentation is preserved, it occurs as concentric growth lines regularly disposed.

**Remarks:** The table with measurements shows that the samples from Bucegi fall very well within the dimensional limits described by Bărbulescu (1963, 1998) of samples from Upper Bathonian deposits of Central Dobrogea and by Terquem and Jourdy (1871) from Bathonian deposits of Moselle region.

**Occurrence:** Strunga Pass, Strungulița Pass, Tătarul Peak, Obârșia Văii Tătarului, within levels of calcareous sandstones and calcarenites at the top of the Strungulița Formation, Bajocian.

**Stratigraphic and geographic distribution:** Romania: Central Dobrogea: frequent in Upper Bathonian deposits; This species is very rare in Bathonian deposits of Moselle region (France); Turkmenia: Bathonian, Republic of Moldova: Bajocian – Bathonian.

*Pleuromya sp.*

Plate III, Figures 19 - 23

**Material:** four samples (LPBIII L 1436-1439), internal casts with a medium degree of preservation.

**Measurements (in mm):**

Nr. LPB III L	L	H	I	H/L	I/L
1436	52,2	25,8	24,5	0,49	0,46
1437	51,3	21,2	20	0,41	0,38
1438	40	18,4	13,3	0,46	0,33
1439	37,1	17,4	11,7	0,46	0,31

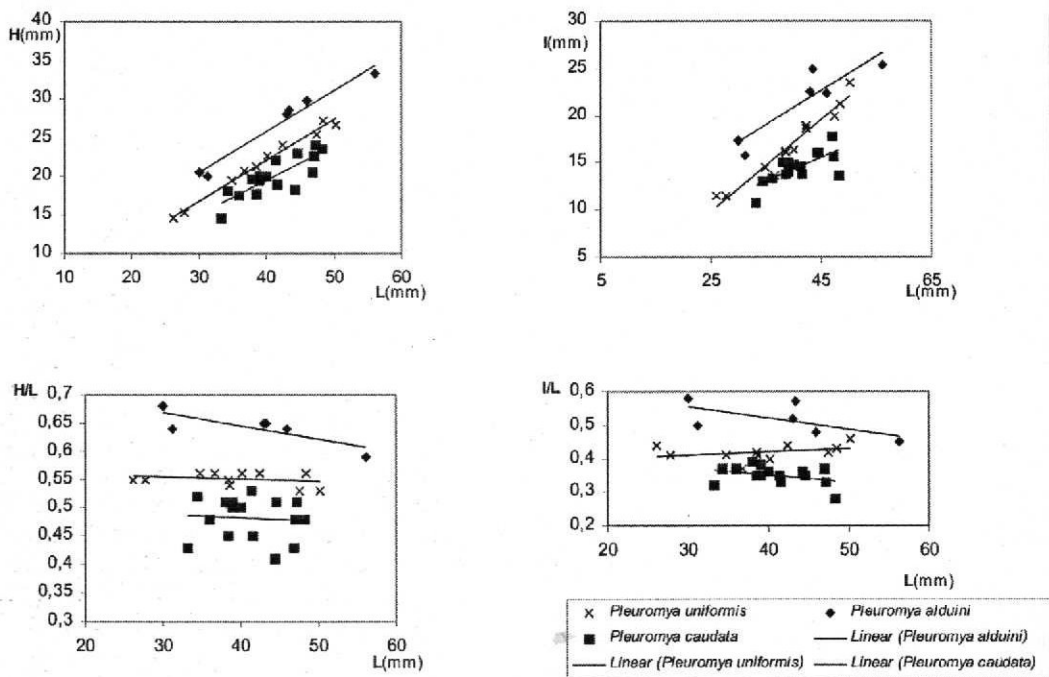
**Description:** The shell is oval, elongated anteroposterior, with the length of the anterior part shorter than the length of the posterior part; the ortogir umbo is slightly flattened and it occurs in the anterior third part of the dorsal margin; the lunule is small and slightly concave; the posterodorsal margin dives obliquely to the ventral margin so that the posteroventral angle is sharp (25°); the anterior margin is short and rounded, the ventral margin is very largely convex. The ornamentation is hardly distinguishable, represented by several concentric, growth lines.

**Remarks:** *Pleuromya sp.* is different than the above species by its strongly anteroposterior elongated shape and by its sharp anteroposterior angle. The collected samples slightly resemble *P. caudata* in H/L and I/L ratios but it is different of this species by having the posterodorsal margin inclined and by the sharp posteroventral angle. This species is also clearly different of *P. subelongata* by its H/L and I/L ratios and by the sharp outline of the posteroventral margin.

**Occurrence:** Strunga Pass, Strungulița Pass, Tătarul Peak, levels 19-23 (Text-Figure 1) of calcareous sandstones and calcarenites from the top of the Strungulița Formation, Bajocian.

After the measurements were undertaken for species *P. uniformis*, *P. alduini* and *P. caudata*, I made the dispersion polygons for the variation of height, of inflation, of H/L ratio and respectively of I/L ratio depending of length (Text-Figure 3). It can be observed that

although the dispersion polygons of the three species are rather close, they actually can be separated, *P. uniformis* having an intermediary position between *P. alduini* (with higher values for inflation and height) and *P. caudata* (with smaller values for inflation and height).



**Figure 3.** The boundary between species *Pleuromya uniformis* (Sowerby), *Pleuromya alduini* (Brongniart) and *Pleuromya caudata* Terquem et Jourdy, on the dispersion diagrams of height, inflation and H/L and I/L ratios depending of length.

Superfamily PANDORACEA RAFINESQUE,  
1815

Family LATERNULIDAE HEDLEY, 1918

Genus CERCOMYA AGASSIZ, 1843

*Cercomya cf. undulata* (J. de C. SOWERBY,  
1827)

Plate IV, Figures 8 - 10

**Material:** three incomplete samples (LPBIII 1484-1486) of which two have the right valve flattened.

**Description:** The shell is oval-elongated, strongly un-equilateral. The umbo is small, flattened, occurring in the quarter part from the anterior end. The anterior part is short and the posterior part is strongly elongated. The anterior margin is rounded, the ventral margin is largely arched, and the anterodorsal margin dives slightly obliquely from the umbo to the anterior margin. The posterodorsal margin is approximately straight. To the posterior part,

from the umbo, a well marked fold separating in the dorsal margin a flattened surface resembling a shield. This surface is slightly depressed from the rest of the shell. In one sample (Plate IV, Figure 10), the posteroventral part is strongly narrowed and slightly arched upwards.

**Remarks:** In general shape of the shell, the samples from Bucegi Mountains resemble very much the samples described by Morris and Lycett (1854), Lycett (1863) and Himšiasvili (1957). Those samples are included now to *Cercomya undulata*. But the samples that we collected being internal casts with a low degree of preservation for ornamentation, cannot be assigned with certainty to *Cercomya undulata*, although on small surfaces are still present rests of the shell on which can be recorded concentric growth lines, sometimes thickened as folds.

**Occurrence:** Strungulița Pass, level 5 (Text-Figure 1), in quartzitic arenites with calcareous cement, Bajocian.

Family THRACIIDAE STOLICZKA, 1870  
Genus THRACIA LEACH in SOWERBY,  
1823

*Thracia lata* (GOLDFUSS, 1839)  
Plate IV, Figures 11, 12

1863 *Sanguinolaria lata*, Goldfuss, p. 268, Plate 160, Figure 2;

1899 *Thracia lata* Goldfuss; Greppin, p. 53, Plate VII, Figures 1, 1a, 1b;

1973 *Thracia lata* Goldfuss; Romanov, p. 135, Plate XIV, Figures 3-5;

1986 *Thracia (Thracia) lata* Goldfuss; Pugaczewska, p. 72, Plate 15, Figures 10a, b.

**Material:** one sample (LPBIII1652), composite, incomplete cast with a medium preservation degree.

**Measurements:** L = 34mm; H = 25mm; I = 16mm; H / L = 0,73; I / L = 0,47.

**Description:** Sub-triangular shell, oval-elongated anteroposterior, weakly un-equivalve, almost equilateral, with the anterior half of the shell 1-2 mm longer than the posterior half of the shell. The anterior margin is rounded, the ventral margin is largely curved. The connection between the anterior and ventral margins is done along an almost circular curve. The cardinal margin dives obliquely along both flanks of the umbo, the junction with the anterior margin being done by an obtuse, rounded angle. The umbo is slightly erected, ortogir, occurring close to the middle part of the dorsal margin (length of the anterodorsal margin = 20.6 mm, length of the posterodorsal margin = 18 mm). The umbo of the right valve looks to be slightly erected over the umbo of the left valve. The zone of maximal convexity of the shell occurs in the middle of the shell's length, immediately under the umbo. The right valve is slightly convex than the left valve. On the left valve can be observed a slightly rounded, radial fold, developed immediately in the umbo's back. This fold is obliquely-arched diving to the posterior-ventral margin. The fold confines to the posterior part a slightly depressed surface, narrow, ornamented with dense growth lines. A similar fold is described by Greppin (1899, p. 53) to the anterior part of the umbo but in our specimens such a fold can not be observed. The ligamentary area is perfectly defined in the posterior part of the umbo, this is lanceolate, planate or slightly depressed, limited on each side by a clear, conspicuous rib. The ornamentation is represented by clear, concentric growth lines that at approximatively equal intervals become more pronounced, as ridges.

**Occurrence:** Strunga Pass, within the hardground surface, Bathonian – Middle Callovian in age.

**Stratigraphic and geographic distribution:**

Switzerland: Bajocian (*Stephanoceras humphresianum* Zone) from Balin region (Sulz); Poland: Upper Bajocian; Republic of Moldova, Turkmenia: Upper Bajocian – Lower Bathonian; Germany: Lower Jurassic – Bajocian.

Superfamily POROMYACEA DALL, 1886

Family CUSPIDARIIDAE DALL, 1886

Genus CUSPIDARIA NARDO, 1840

*Cuspidaria ibbetsoni* (MORRIS, 1853)  
Plate IV, Figure 13

1853 *Naearea Ibbetsoni* Morris, p. 341, Plate XIV, Figure 6;

1863 *Naearea Ibbetsoni* Morris; Lycett, Plate XXXV, Figures 8, 8a;

1948 *Cuspidaria ibbetsoni* (Morris); Cox & Arkell, p. 46.

**Material:** one sample (LPBIII1502), internal cast of the right valve with a medium degree of preservation.

**Measurements:** L = 29mm; H = 17mm.

**Description:** Un-equilateral shell, strongly convex, sub-globose, with the posterior part elongated and strongly rostrate. The cardinal margin is straight along the posterior half. The anterior end is rounded and the ventral margin is largely convex. The umbo is rounded. From the posterior part of the umbo is formed a fine and sharp rib that goes obliquely to the posteroventral angle. In front of the rib, towards the flank, a depressionary surface is generated, while in the back of the rib, towards the posterior margin, the shell is developed as a rostrate wing.

**Occurrence:** Strungulița Pass, within the level 16 (Text-Figure 1), within oosparitic calcarenites, Bajocian in age.

**Stratigraphic and geographic distribution:**

England: Upper Bajocian – Bathonian: Upper Esturaine Series, Great Oolite, Forest Marble.

### Acknowledgements

I wish to express my gratitude to Professor Aurelia Bărbulescu and Professor Theodor Neagu for critical remarks with regard to this paper and for permanent supervision. Special thanks for my colleagues Associate Professor Dr. Mihai Popa for translation and for encouragement in writing this paper and for Associate Professor Marius Stoica for photographing the described specimens. I thank to my younger colleague Victor Barbu for his help during fieldwork and for preparing the manuscript.

## REFERENCES

- Agassiz, L. 1840-1842, Études critiques sur les Mollusques Fossiles. Neuchatel, 1840-1842, p. 57-141, Tab. 1-8.
- Arkell, W. J. 1935, A monograph of British Corallian lamellibranchia, Part VIII, p. 325-350, plates XLV-XLIX.
- Bărbulescu, A. 1963, Contribuții la studiul faunei de lamelibranchiate jurasice din Dobrogea. *Studii și cercetări de Geologie*, extras, Tom VIII, vol. 1, p. 45-63, Editura Academiei, R.P.R.
- Bărbulescu, A. 1974, Stratigrafia Jurasicului din Vestul Dobrogei Centrale. Editura Academiei, R.S.R., București, p. 9-161, Plate XXI - XXXI.
- Bărbulescu, A. 1999, Late Jurassic Bivalvia of Central Dobrogea, *Acta Palaeontologica Romaniae* V.2, p. 39-51.
- Brongniart, A. 1821, Sur les caractères zoologiques des formations, avec l'application de ces caractères à la détermination de quelques terrains de Craie, *Annales des Mines*. Carbur., Paris, 6, 537-72, pls. 7, 8
- Cox, L. R. 1965, Jurassic Bivalvia and Gastropoda from Tanganyika and Kenya. *Bulletin of the British Museum (Nat. Hist.), Geology*, SupPlate 1, London, 1965.
- Cox, L. R. and Arkell, W. J. 1948-1949, A survey of the Mollusca of the British Great Oolite Series. Primarily a nomenclatorial Revision of the Monographs by Morris and Lycett (1851-1855), Lycett (1863) and Blake (1905-1907). Part I - p. I - XIII, Part II - p. XIV - XXIV. Paleontographical Society, London.
- Dikani, K. V. 1989, Anomalodesmatii verhnei iurii Dneprovsko - Donețkoi Vpadinî. *Akademia Nauk Ukrainkoi C.C.P.*, Inst. Geologickih Nauk, p. 1-46.
- Dikani, K. V. and Makarenko, D. E. 1989 -1990, Dvustrorciatfii i bruhonoghie molluski vernei iurii Dneprovsko - Donețkoi Vpadinî. *Akademia Nauk Ukrainkoi C.C.P.*, Inst. Geologickih Nauk, p. 8-114, Plate 1-32.
- Dragastan, O., Neagu, Th., Bărbulescu, A., Pană, I. 1998, Jurasicul și Cretacicul din Dobrogea Centrală și de Sud (Paleontologie și Stratigrafie). S.C. *Super Graph Tipo S.R.L.*, Cluj-Napoca, 1998.
- Duff, K. L. 1978, Bivalvia from the English Lower Oxford Clay (Middle Jurassic). *Paleontographical Society Monographs*, Nr. 553, vol. 132, p. 1-137, Plate 1-13.
- Goldfuss, A. 1862-1863, *Petrefacta Germaniae*, Leipzig, 1862-1863.
- Greppin, E. 1899, Fossiles du Bajocien supérieur des environs de Bale -2<sup>me</sup> partie. *Mém. de la Soc. Paléontologique Suisse*, vol. XXVI, p. 53-126, Plate VI-XII, Genève.
- Herbich, Fr. 1885 (1888), Données paléontologiques sur les Carpathes Roumaines. *Anuarul Biroului Geologic*, anul III, nr. 1, București, p. 12-339, Plate I - XXIX.
- Himișiașvili, N. G. 1957, Barhneiorskaea fauna Gruzii (Cephalopoda i Lamellibranchiata). Acad. Nauk Gruzinskoi S.S.R., Tbilisi, 1957.
- Jekelius, E. 1916, A Brassói Hegyek Mezozoós Faunája III-VII. A Brassói Dogger- ÉS Malmfauna, Budapest.
- Lazăr, I. 1999, Middle Jurassic Anomalodesmatan Bivalves from Strunga - Tătaru, Bucegi Mountains. *Acta Palaeontologica Romaniae* V.2, p. 237-250.
- Laube, G. C. 1867, Bivalven des Braunen Jura von Balin Wien, 1867; p. 4-53; Taf. I-V.
- Lycett, J. M. D. 1863, Supplementary Monograph on the Mollusca from the Stonesfield Slate, Great Oolite, Forest Marble, and Cornbrash. *Paleontographical Society*, 1863, p. 1-129, Plate I - XLV.
- Moore, R. C. 1969, Treatise on Invertebrate Paleontology, Part N, Vol. 1-2, Mollusca 6, Bivalvia, p. N1-N952.
- Morris, J. F. G. S. and Lycett, J. 1850, 1853-1854, A Monography of the Mollusca from the Great Oolite, chiefly from Mincinhampton and the Coast of Yorkshire. Part II, III, Bivalves. Part I - Univalves, p. 1- 130; Plate I - XV. Paleontographical Society, London, 1853: p. 1-80, Plate I-VIII; 1854: p. 81-142, Plate IX - XV.
- Orbigny, A. D'. 1850, Prodrome de Paléontologie stratigraphique universelle des animaux mollusques et rayonnés. 1, 394p; 2, 428p., Paris.
- Patrulius, D., Popa, E., Avram, E., Baltreș, A., Pop, G., Iva, M., Antonescu, E., Dumitrică, P., Iordan, 1980, M., Studiul petrologic și biostratigrafic complex al formațiunilor jurasice și neocomiene din Carpații Românești și Dobrogea în vederea evaluării potențialului de resurse minerale. Sectorul Leaota-Brașov-Munții Perșani. Raport I.G.G. - Tema Nr. 47/1979.
- Pugaczewska, H. 1986, Bivalvia of the Polish Middle Jurassic and remarks on their paleoecology. *Acta Paleontologica Polonica*, vol. 31, No. 1-2, p. 27-83, Plate 15-34, Warszawa, 1986.
- Romanov, L. F. 1973, Iurskie morskie dvustrorciatfii molluski mejdureciea dnestr-Prut. Akademia Nauk Moldavskoi S.S.R., otdel Paleontologii i Stratigrafii, Kișinău, 1973, p. 50 -208, Plate I-XXI.
- Sowerby, J. 1812-1829, The Mineral Conchology of Great Britain. 1: 1812: 1-234; 2: 1818: 1-251; 3: 1821: 1-194; 4: 1823: 1-160; 5: 1825: 1-168; 6: 1829: 1-250, London.
- Stoica, I. 1997, Palaeoecology of middle Jurassic bivalve communities from strunga-Strungulita, western side of Bucegi Mountains, Romania. *Acta Palaeontologica Romaniae. The First Romanian National Symposium on Palaeontology*, Bucharest, p. 101-106, Plate 11.I.
- Terquem, O.M.M. et Jourdy, E. 1871-1873, Monographie de l'étagé Bathonien dans le département de la Moselle. *Mém. Soc. Géol. France*, T. IX, p. 1-175, Plate I-XVII.
- Wetzel, W. 1973, Studien zur paläontologie des Nordwesten-ropäischen Bathonien. *Paleontographica*, 1937, Bd. 87, p. 77-157, Taf. XV, Stuttgart.
- Zieten, C.H. 1830. Die Versteinerungen Württembergs, 1, p.1-102, Stuttgart.

## PLATES

## Plate I

Figures 1 - 11 *Gresslya peregrina* (Phillips) *rostrata* Agassiz, 1842: 1 - left valve, Strungulița Formation, Bajocian, LPBIIL1372. x 1; 2 - left valve, Strungulița Formation, Bajocian, LPBIIL1374. x 1; 3 - left valve, Strungulița Formation, Bajocian, LPBIIL1370. x 1; 4 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1370. x 1; 5 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1365. x 1; 6 - anterior view, Strungulița Formation, Bajocian, LPBIIL1365. x 1; 7 - left valve, Strungulița Formation, Bajocian, LPBIIL1365. x 1; 8 - left valve, Strungulița Formation, Bajocian, LPBIIL1367. x 1; 9 - left valve, Strungulița Formation, Bajocian, LPBIIL1361. x 1; 10 - left valve, Strungulița Formation, Bajocian, LPBIIL1363. x 1; 11 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1363. x 1.

Figures 12-19 *Gresslya abducta intermedia* Wetzel, 1937: 12 - left valve, Strungulița Formation, Bajocian, LPBIIL1382. x 1; 13 - left valve, Strungulița Formation, Bajocian, LPBIIL1376. x 1; 14 - anterior view, Strungulița Formation, Bajocian, LPBIIL1386. x 1; 15 - left valve, Strungulița Formation, Bajocian, LPBIIL1386. x 1; 16 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1386. x 1; 17 - right valve, Strungulița Formation, Bajocian, LPBIIL1379. x 1; 18 - anterior view, Strungulița Formation, Bajocian, LPBIIL1379. x 1; 19 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1379. x 1.

## Plate II

Figures 1-18 *Gresslya gregaria* (Zieten, 1830): 1 - left valve, Strungulița Formation, Bajocian, LPBIIL1335. x 1; 2 - right valve, Strungulița Formation, Bajocian, LPBIIL1338. x 1; 3 - anterior view, Strungulița Formation, Bajocian, LPBIIL1338. x 1; 4 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1338. x 1; 5 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1347. x 1; 6 - right valve, Strungulița Formation, Bajocian, LPBIIL1347. x 1; 7 - left valve, Strungulița Formation, Bajocian, LPBIIL1347. x 1; 8 - right valve, Strungulița Formation, Bajocian, LPBIIL1331. x 1; 9 - right valve, Strungulița Formation, Bajocian, LPBIIL1333. x 1; 10 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1333. x 1; 11 - right valve, Strungulița Formation, Bajocian, LPBIIL1340. x 1; 12 - left valve, Strungulița Formation, Bajocian, LPBIIL1340. x 1; 13 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1340. x 1; 14 - right valve, Strungulița Formation, Bajocian, LPBIIL1339. x 1; 15 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1339. x 1; 16 - left valve, Strungulița Formation, Bajocian, LPBIIL1350. x 1; 17 - right valve, Strungulița Formation, Bajocian, LPBIIL1332. x 1; 18 - left valve, Strungulița Formation, Bajocian, LPBIIL1343. x 1.

## Plate III

Figures 1-9 *Pleuromya uniformis* (J. Sowerby, 1813): 1 - right valve, Strungulița Formation, Bajocian, LPBIIL1398. x 1; 2 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1398. x 1; 3 - left valve, Strungulița Formation, Bajocian, LPBIIL1395. x 1; 4 - right valve, Strungulița Formation, Bajocian, LPBIIL1393. x 1; 5 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1393. x 1; 6 - right valve, Strungulița Formation, Bajocian, LPBIIL1391. x 1; 7 - left valve, Strungulița Formation, Bajocian, LPBIIL1389. x 1; 8 - right valve, Strungulița Formation, Bajocian, LPBIIL1388. x 1; 9 - left valve, Strungulița Formation, Bajocian, LPBIIL1388. x 1.

Figures 10-18 *Pleuromya caudata* Terquem et Jourdy, 1871: 10 - right valve, Strungulița Formation, Bajocian, LPBIIL1433. x 1; 11 - right valve, Strungulița Formation, Bajocian, LPBIIL1422. x 1; 12 - right valve, Strungulița Formation, Bajocian, LPBIIL1434. x 1; 13 - left valve, Strungulița Formation, Bajocian, LPBIIL1423. x 1; 14 - right valve, Strungulița Formation, Bajocian, LPBIIL1423. x 1; 15 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1423. x 1; 16 - right valve, Strungulița Formation, Bajocian, LPBIIL1419. x 1; 17 - right valve, Strungulița Formation, Bajocian, LPBIIL1420. x 1; 18 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1420. x 1.

Figures 19-23 *Pleuromya sp.*: 19 - left valve, Strungulița Formation, Bajocian, LPBIIL1436. x 1; 20 - right valve, Strungulița Formation, Bajocian, LPBIIL1436. x 1; 21 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1436. x 1; 22 - right valve, Strungulița Formation, Bajocian, LPBIIL1439. x 1; 23 - right valve, Strungulița Formation, Bajocian, LPBIIL1437. x 1.

Figures 24-27 *Pleuromya subelongata* (d'Orbigny, 1850): 24 - right valve, Strungulița Formation, Bajocian, LPBIIL1408. x 1; 25 - left valve, Strungulița Formation, Bajocian, LPBIIL1401. x 1; 26 - right valve, Strungulița Formation, Bajocian, LPBIIL1401. x 1; 27 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1401. x 1.

## Plate IV

- Figures 1-4 *Pleuromya tenuistria* (Münster) Agassiz, 1842: 1 - right valve, Strungulița Formation, Bajocian, LPBIIL1400. x 1; 2 - left valve, Strungulița Formation, Bajocian, LPBIIL1400. x 1; 3 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1400. x 1; 4 - details of ornamentation on left valve (Figure 2).
- Figures 5-7 *Pleuromya alduini* (Brongniart, 1821): 5 - left valve, Strungulița Formation, Bajocian, LPBIIL1417. x 1; 6 - right valve, Strungulița Formation, Bajocian, LPBIIL1412. x 1; 7 - dorsal view, Strungulița Formation, Bajocian, LPBIIL1412. x 1.
- Figures 8-10 *Ceromya cf. undulata* (J. de C. Sowerby, 1827): 8 - left valve, Strungulița Formation, Bajocian, LPBIIL1488. x 1; 9 - left valve, Strungulița Formation, Bajocian, LPBIIL1484. x 1; 10 - left valve, Strungulița Formation, Bajocian, LPBIIL1486. x 1.
- Figures 11-12 *Thracia lata* (Goldfuss, 1839): 11 - dorsal view, Strunga Formation, Bathonian, LPBIIL1652. x 1; 12 - left valve, Strunga Formation, Bathonian, LPBIIL1452. x 1.
- Figure 13 *Cuspidaria ibbetsoni* (Morris, 1853) - right valve, Strungulița Formation, Bajocian, LPBIIL1502. x 2,5.

