

THE PLIOCENE FROM LOGREȘTI

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Abstract. At Logrești, Frunza village, in two hydrogeological boreholes, from which we have collected fragments of bivalve and gastropod fossils, we have identified the Getian, Parscovian and Pelendavian, for the first time, setting a lithostratigraphic column for this sector.

Keywords: Pliocene stratigraphy, fossils, lithostratigraphic section Frumușei-Frunza (Gorj county).

Rezumat. Pliocenul de la Logrești. În comuna Logrești, satul Frunza, am colectat din probele de sită de la două foraje hidrogeologice, fragmente de bivalve și gastropode fosile, pe baza cărora am identificat Gețianul, Parscovianul și Pelendavianul, alcătuind coloana litostratigrafică pentru acest sector.

Cuvinte cheie: stratigrafia Pliocenului, fosile, secțiunea litostratigrafică Frumușei-Frunza (județul Gorj).

INTRODUCTION

The fossil fauna has not been examined in no one of the boreholes from Logrești area. This is the first attempt of establishing a paleontological stratigraphic column.

MATERIAL AND METHODS

In Logrești settlement, Frunza village, two hydrogeological drillings have been executed, F1 and F2, each reaching a depth of 260 m. Since in the area there are no boreholes to provide knowledge of the Pliocene sequence based on encountered fossil fauna, we have given special attention to sieve samples and their content because, out of hydrogeological needs, the wells were performed in continuous drilling with reverse circulation.

The fauna collected from the sieve samples, although numerous but triturated, have allowed us, through a careful examination of significant fragments, to identify levels that contain with certainty: Romanian, Parscovian and Getian.

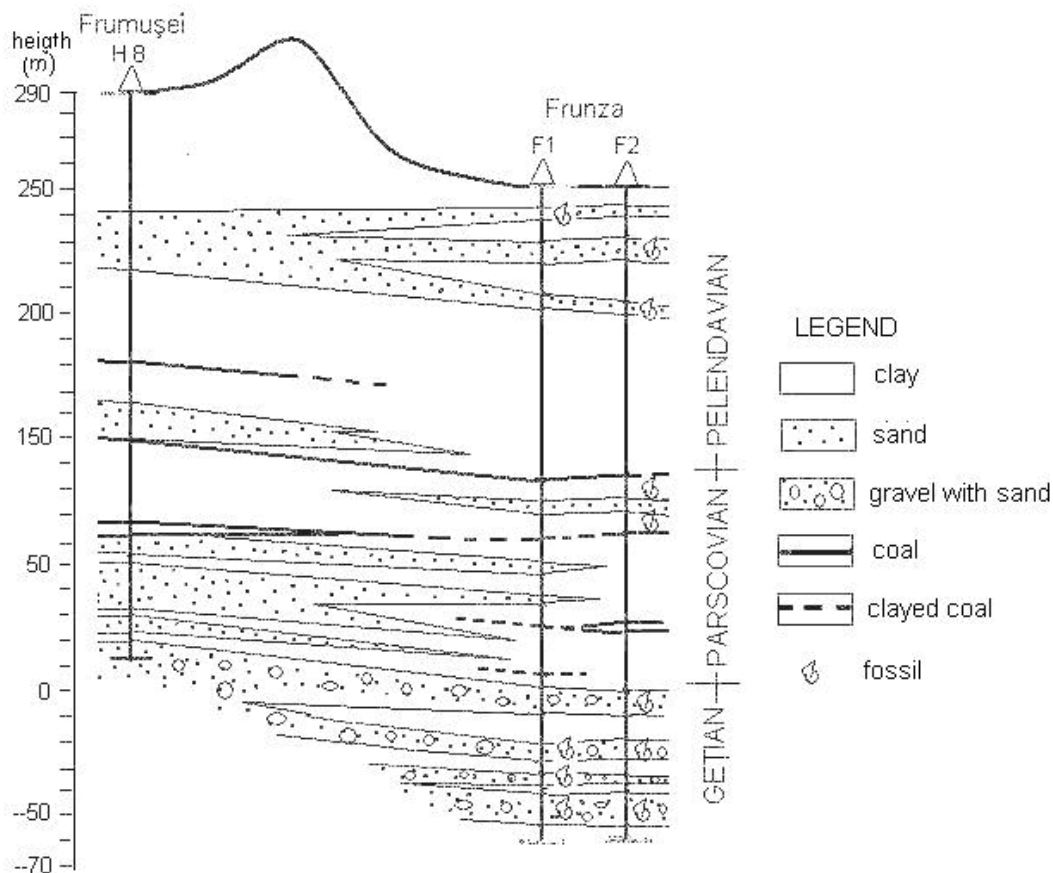


Figure 1. Section Frumușei - Frunza.

RESULTS AND DISCUSSIONS

The lithologic columns obtained from sieve samples based on the levels of the determined fauna, correlated with geophysical investigation of the borehole and the nearby columns of the wells, as well as the lithological sections previously prepared, in which the correlation was made only by lithology and in particular taking as benchmark the coal strata encountered, allowed us to establish strata packets belonging to three levels mentioned above (Fig. 1) in the area between the Gilort and the Amaradia, south of the outcrop area of the Târnu Cărbunești - Seciuri - Copăceni line.

The following fossil forms have been identified:

Description of the fossil fauna found in drillings

***Pachyprionopleura haueri haueri* (SABBA) 1896**

Figs. 1a, 1b, 1c, 1d, 1e, 1f, 1g.

1907 *Prosodacna haueri*, TEISSEYRE, p. 300-301, Pl. IX, Figs. 4-5.

1942 *Prosodacna (Prosodacna) munieri*, WENZ, p. 122, Pl. 62, Figs. 653b, 654a, 655.

1973 *Prosodacna (Psilodon) haueri porumbarui*, MOTĂȘ et al., p. 65, Pl. III, Figs. 11, 16.

1981 *Pachyprionopleura haueri haueri*, PANĂ et al., p. 86-87, Pl. 50, Fig. 5a.

Fragments with the outer face (1a, 1f) show large ribs from the lower part of the valve separated by narrow intercostal spaces. Fragments with the internal face (1b, 1c, 1d, 1e, 1g) show flattened ribs (1e, 1g), which on the lower edge of the shell tend to widen and are crossed by a string shaped hollow in the middle, finished at the top of the lower board in a lance shape, separated by narrow spaces.

Drilling F2 Frunza, depth 234-251 m.

Dacian.

***Dreissena rostriformis* (DESHAYES) 1838**

Figs. 2a, 2b.

1918 *Dreissena corniculata*, IONESCU-ARGETOAIA, p. 421, Pl. 15, Figs. 7, 7a.

1942 *Dreissena rostriformis*, WENZ, p. 118, pl. 60, Figs. 626, 630, 631.

1962 *Dreissena rostriformis*, PANĂ, Pl. V, Figs. 70-73.

1981 *Pachyprionopleura munieri*, PANĂ et al., p. 64-65, Pl. 43, Fig. 10a.

Oval, convex valves, with a terminal umbo recurved as a rostrum. Strongly curved dorsal edge, with a convex ventral edge. The outer surface has under the umbo a thick growing streak (2a, 2b).

Drilling F1 Frunza, depth 243-254 m.

Drilling F2 Frunza, depth 251-256 m.

Lower Dacian (Getian).

***Dreissena rimestiensis* (FONTANNES) 1886**

Figs. 3a, 3b, 3c.

1942 *Dreissena rimestiensis*, WENZ, p. 119, Pl. 61, Figs. 634, 636, 641b.

1962 *Dreissena rimestiensis*, PANĂ, Pl. V, Figs. 55-69.

1976 *Dreissena rimestiensis*, PAPAIAŃOPOL, p. 121, Pl. 11, Figs. 5-6.

1981 *Dreissena rimestiensis*, PANĂ et al., p. 64, Pl. 43, Figs. 12-14.

Ovate-oblong valves, slightly curved, with small umbo situated anterior terminally. Rounded rear part. On the inside (3a, 3b), it has dysodont teeth, represented by a ligament moat. Integripallial shell impressions. The dorsal (c) has more developed growth streaks.

Drilling F1 Frunza, depth 243-254 m.

Drilling F2 Frunza, depth 228-234 m, 234-240 m, 251-256 m.

Lower Dacian (Getian).

***Pristinunio* cf. *pristinus* (BIELZ) 1864**

Figs. 4a, 4b, 4c.

1942 *Pristinunio pristinus*, WENZ, p. 284, Pl. 52, Figs. 563a, 563b, 566.

1981 *Pristinunio pristinus*, PANĂ et al., p. 55, Pl. 1, Figs. 1b, 2a, 2b.

Fragment (4a) shows an internal lower paleal visible line. This excerpt reveals the elongated shape of the valve. Fragment (4b) shows the internal face of the umbo of the left valve with 2 small cardinal teeth and the fossa of the right valve from the strong cardinal tooth. Fragment (4c) displays the external face of the valve from the front, with prominent growth lines (which is why fragments have been attributed to this species).

Drilling F2 Frunza, depth 21-27 m, 44-48 m.

Romanian (Pelendavian).

Stylodacna heberti (COBĂLCESCU) 1883

Figs. 5a, 5b, 5c, 5d.

1942 *Prosodacna (Stylodacna) heberti*, WENZ, p. 128, Pl. 65, Figs. 688a-d; Pl. 66, Fig. 689.1976 *Prosodacna heberti*, PAPAIAPOPOL, p. 107, Pl. 11, Figs. 5-6.1977 *Prosodacna heberti*, ANDREESCU, p. 51-53, Pl. XVI, Figs. 1-4.1981 *Prosodacna heberti*, PANĂ et al., p. 79-80, Pl. 49, Figs. 7, 8; Pl. 50, Fig. 1.

Large shell, with rounded oval shape. The outer surface shows flattened ribs, relatively high, which widen towards the bottom of the valve, separated by linear grooves (fragments A, B, C). Internal surface covered by strong ribs, tall, flattened, appropriate with external grooves, separated by wide intercostal spaces (fragment 5d).

Drilling F1 Frunza, depth 244-254 m.

Drilling F2 Frunza, depth 221-225 m, 228-231 m, 237-243 m, 251-256 m.

Lower Dacian (Getian).

Sulcopotomida cymatoides (BRUSINA) 1874

Fig. 6.

1918 *Unio clivosus*, IONESCU-ARGETOAIA, p. 385, Figs. 6, Pl. 1.1918 *Unio Gorjensis*, IONESCU-ARGETOAIA, p. 410-411, Pl. XI, Figs. 9-10.1918 *Unio subclivosus*, IONESCU-ARGETOAIA, p. 388-389, Pl. III, Figs. 1-2.1942 *Psilunio (psilunio) cymatoides*, WENZ, p. 97, Pl. 38, Figs. 535a, 536b.1981 *Sulcopotomida cymatoides*, PANĂ et al., p. 50-51, Pl. 4, Figs. 1-9.

Fragment of thick valve, with numerous concentric "ribs", wave shaped, characteristic for this species.

Frunza Drilling F2, depth 21-27 m.

Romanian (Pelendavian).

Prosodacnomya sturi sabbae ANDREESCU 1975

Figs. 7a, 7b, 7c.

1942 *Prosodacna (Stylodacna) sturi*, WENZ, p. 125, Pl. 64, Fig. 675.1977 *Prosodacnomya sturi sabbae*, ANDREESCU, p. 25-29, Pl. III, Figs. 17, 18; Pl. IV, Fig. 15; Pl. V, Fig. 18.1981 *Prosodacnomya sturi sabbae*, PANĂ et al., p. 77. Pl. 46, Fig. 12; Pl. 47, Figs. 18, 20.

Fragments of small valves with strong anterior twisted umbo (7a), with the external surface covered by dense ribs, softly flattened, curved, radiating from the umbo towards the inferior edge of the valve, separated by linear moats.

Drilling F2 Frunza, depth 237-243 m, 251-256 m.

Upper Pontian (Bosphorian) - Lower Dacian (Getian).

Hydrobia grandis COBĂLCESCU 1883

Figs. 8a, 8b.

1942 *Hydrobia grandis*, WENZ, p. 46, Pl. 14, Figs. 177a-b.1981 *Hydrobia grandis*, PANĂ et al., p. 108, Pl. 65, Figs. 1-4.

Small shell, conical oblong, turriculated, with 8 spiral laps of which usually the last are not kept, relatively flat. Deep oblique sutures facing anterior-posterior diameter. The shell surface is smooth. The aperture is suboval-subrhombical with arched labrum, slightly flared and also curved labium.

Drilling F2 Frunza, depth 204-207 m.

Higher Dacian (Parscovian).

Hydrobia gorjensis nov. sp.

Figs. 9a, 9b.

Small shell, conical, elongated, turriculate with flattened spiral turns, with the last ones usually not preserved. Deep oblique sutures facing anterior-posterior diameter. On both sides of the suture shows one weak burelet characteristic of this new species. Shell surface without ornamentation. The aperture is suboval-subrhombical with arched labrum, slightly flared and also curved labium.

Drilling F2 Frunza, depth 251-256 m.

Higher Dacian (Parscovian).

Valvata crusitensis FONTANNES 1886

Fig. 10.

1942 *Valvata (Cincina) crusitensis*, WENZ, p. 41, Pl. 10, Figs. 122-126.1981 *Valvata (Cincina) crusitensis*, PANĂ et al., p. 106-107, Pl. 67, Figs. 14-18.

Shell triangular – rounded shaped, small, with 3.5 spiral turns, with short shift, less prominent, the last spiral round being highly developed, globular, accounting for over two thirds of the height of the shell. The first shifts are

slightly bulging, separated by superficial sutures. Last winding turn is separated by a deep suture. Subcircular aperture, very sharp peristome holostome. Prominent navel.

Drilling F2 Frunza, depth 21-27 m.

Romanian (Pelendavian).

Lithoglyphus amplus BRUSINA 1878

Fig. 11.

1942 *Lithoglyphus amplus*, WENZ, p. 49, Pl. 15, Fig. 206.

Shell stuffed with very short winding. It shows 3-4 turns, with deep sutures and quite a blunt navel. Last turn is very broad, covering almost all previous windings. Large aperture, straight callous rim.

Drilling F2 Frunza, depth 204-207 m.

Upper Dacian (Parscovian).

Theodoxus licherdopoli scriptus (SABBA) 1896

Figs. 12a, 12b.

1942 *Theodoxus (Calvertia) licherdopoli scriptus*, WENZ, p. 32, Pl. 3, Figs. 44b; Pl. 4, Figs. 47a-b, 51b.

1981 *Theodoxus licherdopoli scriptus*, PANĂ et al., p. 95, Pl. 55, Figs. 4, 4a.

The shell is very small, oval spiral, very short and very little prominent, consisting of 2.5 spiral turns, of which the first ones are flattened and the last one is strongly bulged and wide. The ornamentation is removed from the collected specimens. Crescent aperture, columellar oblique edge, with strong callousness.

Drilling F2, depth 251-256 m.

Dacian-Romanian.

Viviparus cf. turgidus turgidus (BIELZ) 1864

Fig. 13.

1942 *Viviparus turgidus turgidus*, WENZ, p. 36, Pl. 6, Fig. 72.

1981 *Viviparus turgidus turgidus*, PANĂ et al., p. 104, Pl. 60, Figs. 10-10a.

The shell is robust, conical-globular. Halfway through the last spiral turn, which is two times larger than the others, has a blunt, rounded hull. Rhomboid-rounded aperture with rolled labrum covering the navel. These characters have made us attribute this shell fragment to its species.

Drilling F2 depth 56-62 m.

Pachyprionopleura cf. munieri (SABBA) 1896

Fig. 14.

1907 *Prosodacna Munieri*, TEISSEYRE, p. 304, Pl. X, Fig. 6A.

1942 *Prosodacna (Prosodacna) munieri*, WENZ, p. 122, Pl. 62, Figs. 653a, 655.

1973 *Prosodacna (Prosodacna) munieri*, MOTAŞ et al., p. 60-61, Pl. I, Figs. 2-4.

1981 *Pachyprionopleura munieri*, PANĂ et al., p. 86-87, Pl. 50, Figs. 1-2.

Fragment of the outside part of the valve, with rounded ribs separated by string linear grooves. On the ribs surface we observe two bold growth striations, prominent that makes us attach it to this species.

Drilling F2, depth 251-256 m.

Lower Dacian (Getian).

CONCLUSIONS

The following fossil forms have been identified:

Romanian (Pelendavian): *Pristinunio cf. pristinus* (BIELZ), *Sulcopotomida cymatoides* (BRUSINA), *Valvata crusitensis* FONTANNES, *Viviparus turgidus turgidus* (BIELZ).

Upper Dacian (Parscovian): *Hydrobia grandis* (COBĂLCESCU), *Hydrobia gorjensis* nov. sp., *Lithoglyphus amplus* BRUSINA.

Lower Dacian (Getian): *Pachyprionopleura munieri* (SABBA), *Dreissena rimestiensis* (FONTANNES), *Dreissena rostriformis* (DESHAYES), *Stylodacna heberti* (COBĂLCESCU), *Prosodacnomya sturi sabbae* ANDREESCU, *Theodoxus licherdopoli scriptus* (SABBA), *Pachyprionopleura haueri haueri* (SABBA).

REFERENCES

- ANDREESCU I. 1977. *Systématique des lymnocardiidés prosodacniformes. Sous-famille Prosodacninae*. Institutul Geologic. Mémoires. Bucharest. **26**: 5-74.
- IONESCU ARGETOAIA I. 1918. *Contribuții la studiul faunei de moluște pliocene din Oltenia*. Anuarul Institutului Geologic. București. **8**: 383-431.

- MOTAȘ I., ANDREESCU I., PAPAIAPOPOL I. 1973. *Les prosodacnes du sous-genre Psilodon*. Institutul Geologic. Mémoires. Bucharest. **18**: 57-78.
- PANĂ IOANA. 1962. *Contribuții la studiul moluștelor de talie mică din depozitele Pliocene*. Analele Universității București. Științele Naturii. București. **11**(31): Pl. V.
- PANĂ IOANA, ENACHE C., ANDREESCU I. 1981. *Pliocene molluscan fauna of Oltenia lignite deposits*. ICITPML, Printing Oltenia. Craiova. 276 pp.
- PAPAIAPOPOL I. 1976. *O faună bosporiană de tip Kamușburun în partea vestică a Bazinului Dacic*. Institutul Geologic Dări de seamă. București. **62**(3): 1-121.
- TEISSEYRE W. 1907. *Contribuții la fauna moluscă neogenă a României, First Part. Unio and Prosodacna*. Anuarul Institutului Geologic. București. **1**: 263-309.
- WENZ W. 1942. *Die Molluscen des Pliozäns der rumänischen Erdöl-Gebite*. Senchenbergiana. Frankfurt am Main. **34**: 1-293.

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Received: March 12, 2013.

Accepted: July 02, 2013.

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PLATE I

