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Middle Eocene foraminifer, mollusc and ostracod fauna from the Csordakút Basin (Gerecse Mountains, Hungary): palaeoenvironments recorded in a transgressive sequence

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(with 6 figures and 15 plates)

Abstract

The well-preserved foraminifer, mollusc, and ostracod fauna was studied from the Midle Eocene Csordakút basin (Transdanubian Central Range, Hungary) by standard washing and by a novel acetic extraction method. Forty-two benthic foraminifer species, 17 ostracod species, and 17 mollusc species are described. Environments range from fluctuating to normal saline and from littoral to sublittoral.

Key words: Foraminifera, Mollusca, Ostracoda, palaeoenvironments, Middle Eocene, Gerecse Mts., Hungary

Introduction

The evolution of the Hungarian Paleogene Basin was understood as the product of transtensional (BÁLDI & BÁLDI-BEKE, 1986) or as retroarc flexural tectonic processes (TARI et al., 1995). Based on the biochronological and palaeoecological analysis of calcareous nannoplankton (BÁLDI-BEKE, 1972, 1977, 1984; NAGYMAROSY, 1983), planktonic foraminifer (SZTRÁKOS, 1974; HORVÁTH–KOLLÁNYI, 1983), larger foraminifer (KECSKEMÉTI, 1970, 1978, 1987), ostracod (MONOSTORI, 1972, 1985, 1996, 1998), and mollusc (BÁLDI, 1973, 1980, 1986) faunae, three main subbasins were recognized. The initiation of their subsidence displays a conspicuous west to east shift from Early Lutetian to Priabonian.

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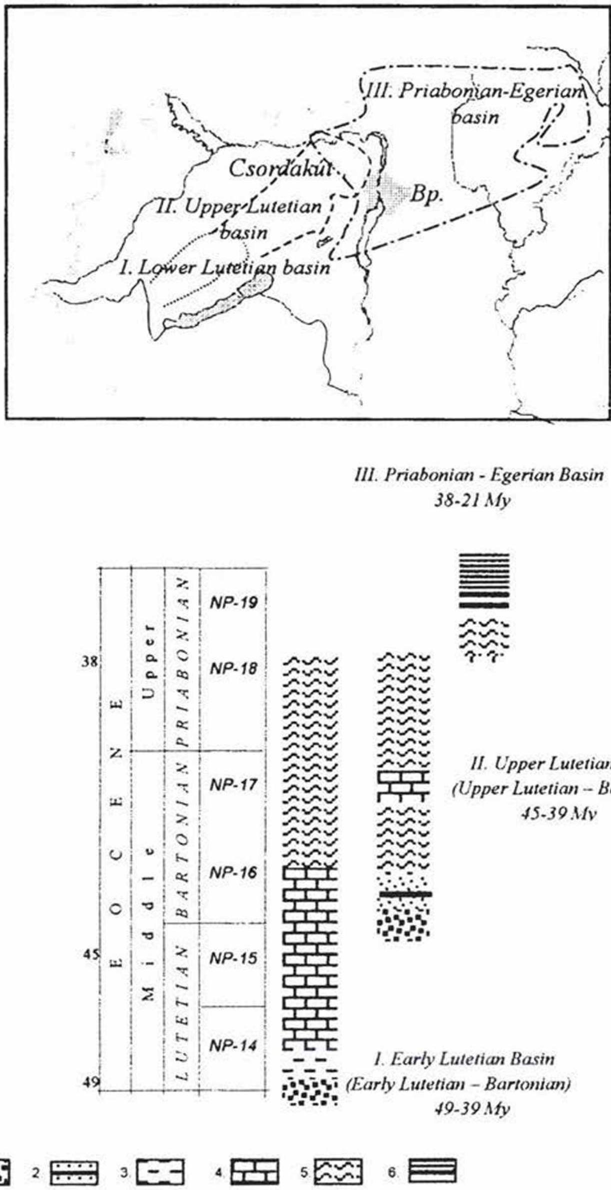

Fig. 1. Migration of the Hungarian Paleogene Basin from the Eocene to the Miocene. I. Lower Lutetian Basin (western part of the Bakony – Lutetian), II. Upper Lutetian Basin (eastern part of the Bakony, and Vértes, Gerecse, Dorog Basin – Upper Lutetian – Bartonian), III. Priabonian – Egerien Basin (Pilis, Buda Hills, northern Hungary – Priabonian – Egerian) (BÁLDI AND BÁLDI-BEKE; 1985) 1: bauxite 2: coal, 3: neritic marl, 4: limestone, 5: bathyal formation, 6: pelagic formation.

The Upper Lutetian – Bartonian Basin includes the north-western part of the Bakony, Vértes, and Gerecse Mountains and the Dorog Basin. In this basin the transgression has begun some five million years later than in the Lower Lutetian Basin (south-eastern part of the Bakony), while the end of the sedimentation is unknown. (Fig. 1).

The Lower Lutetian transgression was studied in the vicinity of Darvastó (Lower Lutetian Basin) (KECSKEMÉTI & VÖRÖS, 1975). The Upper Lutetian – Bartonian transgression sequence is well-known from Gánt (Upper Lutetian Basin) (BIGNOT et al., 1985). The Priabonian transgression was examined in Buda Hills and northern Hungary (Priabonian – Egerien Basin) by BÁLDI et al. (1986), and BÁLDI-BEKE (1972).

The littoral and shelf sediments of the Dorog Basin and the Bakony Mts. has been studied intensively due to economical (coal, bauxite) and palaeontological (outstanding subtropical shelf fauna) interest while the above mentioned areas were examined only in a few aspects. One of these less studied places is the western part of the Csordakút Basin that is situated by the southern foot of the Gerecse Mountains. It was studied within the scope of the Eocene Project which was to discover the bauxite and coal occurrences of the area (VÉGH-NEUBRANDT et al., 1978). Thanks to the technology of opencast mining excellent outcrops allow us to examine the underlying Triassic dolomite and the Middle Eocene limestone and marl. In my study I try to synthesise data got by treating the micro- and macrofossils of the area and give an explanation of the palaeoenvironmental and palaeoecological conditions.

The Csordakút Basin

The basement is Middle and Upper Triassic (Ladinian – Norian) 1500-1700 m thick lagoonal dolomite. The Jurassic and Cretaceous sediments were eroded. After the Cretaceous intensive tectonics and karst processes took part forming traps in which bauxite could be formed. The subsidence took the surface to a lower kinetic-energy level so that dolomitic breccia begun to form and bauxite influx and accumulation begun (VÉGH-NEUBRANDT et al., 1978) The accomodation and spread of bauxite was influenced by the palaeomorphology of the Triassic underlying beds and the preforming faults as well.

In the Upper Lutetian Basin on the basement (on the top of the terrigeneous sequences) paralic coal formations can be found containing epibenthonic molluscs. Next formation is 30-40 m thick marine marl, calcareous marl sequence, the subject of my work. This deposit exists also in the neighbouring basins. However, it is in 300-400 m depth in the southern and western basins (600 m in the Mány Basin), while it appears in spectacular artificial outcrops in the Csordakút Basin.

The regressive sequences of the Middle Eocene sedimentary cycle were preserved only on the eastern part of the Csordakút Basin and in the neighbouring Nagyegyháza and Mány Basins. Lithology is rather variable, on the margins dominantly sand and sandstone, that gradually changes into siltstone and clay-marl towards the inner part of the basin, and rarely limestone has been formed along the margins. (Fig. 2.)

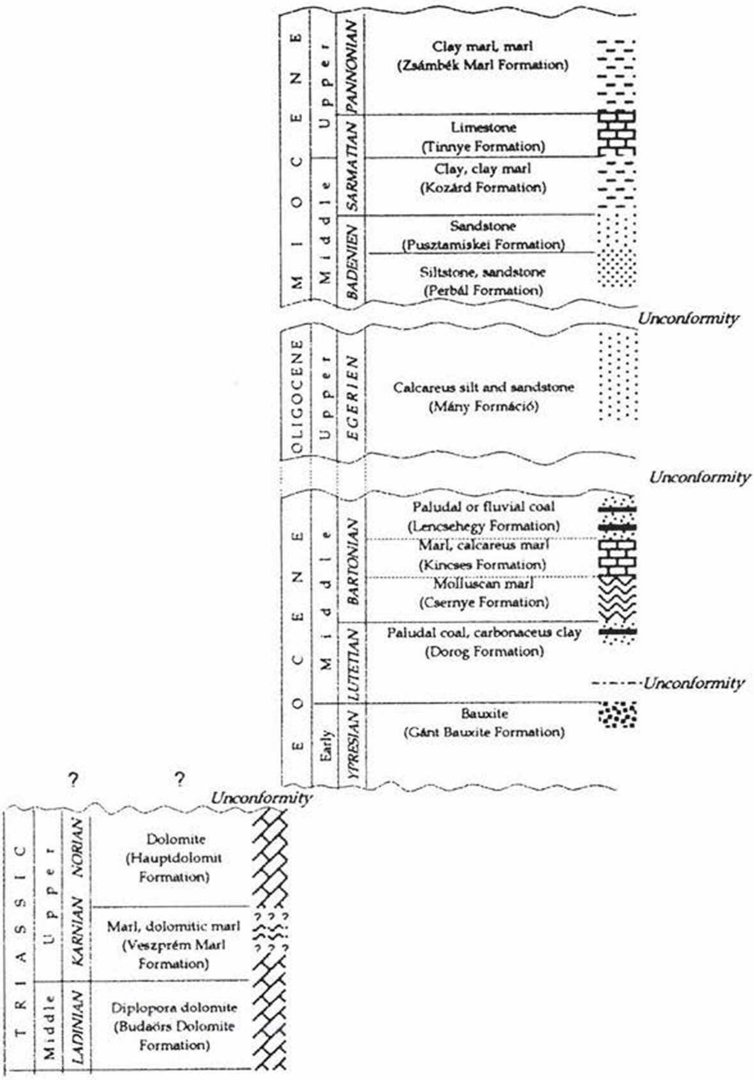

Fig. 2. Simplified synthetic stratigraphic column of the Csordakút Basin

The Upper Eocene sediments have been mostly eroded by Early Oligocene denudation (great erosion between the Upper Eocene and Upper Oligocene that eroded all formations situated to the west from the Buda Line) except in the Nagyegyháza Basin (KOPEK and TÓTH, 1977). After the denudation until the late Oigocene subaerial conditions were typical which was followed by a further transgression. The sequences of this sedimentary cycle are found only in the neighbouring basins and on the eastern margin of the Csordakút Basin (KORPÁS, 1977).

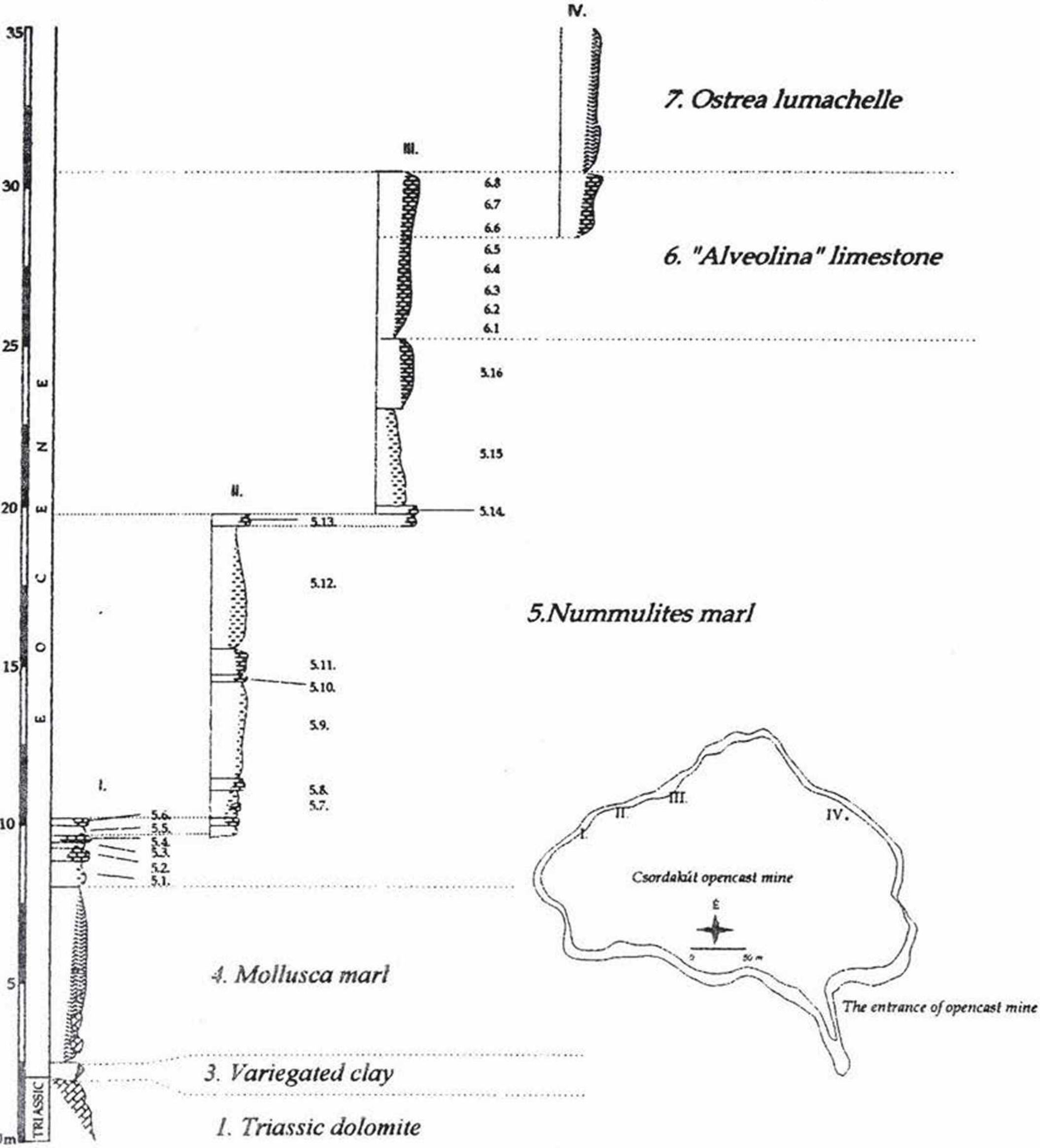

Fig. 3. The studied sequence of the Csordakút Basin

The Miocene formations are preserved in the eastern part of the neighbouring basins and on the easternmost part of the Csordakút Basin. There are Badenien clay, siltstone and fine-grained sandstone, Sarmatian shallow-marine marl, sandstone rare limestone. The uppermost part consist of Pannonian grey, silty marl. At the end of the Miocene the area has became subaerial, and intensive denudation has eroded the surface down to the Mesozoic basement.

The succession

The Middle Eocene sequnce of the opencast mine of Csordakút Basin is the following:

Bed 1: yellow, unfossiliferous *Triassic dolomite* which has a karstified surface locally covered by bauxite.

Bed 2: *Bauxite*

Bed 3: 0.5-1m, very fine-grained, grey, reddish brown *variegated clay*. Rare epibenthonic mollusc fauna.

Bed 4: 8-10 m, brown *mollusca marl* with (0.2-2m) Triassic dolomite boulders and in the lower part of the bed. The bigger boulders are less rounded, the smaller are well rounded, and they are on every cases bored by mollusc. The only fossils are *Ostrea* shell clast.

Bed 5: 15-17 m, grey, brownish grey well-stratified *Nummulites marl and limestone*. It is biomicrite with *packstone (rudstone), wackestone (floatstone)* and *wackestone/packstone* texture. Rich in fossils: foraminifer, mollusc, ostracod (see in systematical palaeontology).

Bed 6: 5-6 m, light-coloured, unstratified, nodular *„Alveolina" limestone*. It is biomicrite with *mudstone*, *wackestone* and *packstone* texture. Rich in microfossils : foraminifer, ostracod and rare macrofossils: most of them are internal mollusc casts (see in systematical palaeontology).

Bed 7: 4-5 m, *Ostrea lumachelle*. It is poorly consolidated greenish grey argillaceous marl with rich mollusca fauna (see in systematical palaeontology) (Fig. 3.)

Material and methods

The studied fauna consists of foraminifera, mollusca and ostracoda. The microfauna were selected from the washable samples by standard processing methods. The carbonate rock were dissolved in concentrated acetic acid.

Studying the micro- and macrofauna of Csordakút Basin conclusion can be drawn for the palaeoenvironment and palaeoecology of the region. There are several methods to examine each fossil group. The most important topic is to specify the dominant taxa, which is defined by frequency. This value shows the ratio of each species to the total number of specimens. This ratio, if the sampling is constant will not be very anomalous. From the number of the species the percentile distribution of the three subordos: Textulariina, Milioliina, Rotaliina can be calculated. The value represented on the triangle diagram of MURRAY (1973), gives the habitat of the species related to recent analogues. In this case due to the extreme high number of Nummulites the calculated value will be in the „Rotaliina corner" for each stratum. This indicates hypersaline or hyposaline lagoon, which is unambiguously inaccurate; possibly the Murray diagram cannot be used to interpret faunas with larger foraminifers.

Another method for explaining palaeocoenosis is the calculation of diversity parameters. The palaeoenviroment can be readly identified by using the FISHER index. Calculation of the index has proposed by MURRAY (1973): $a=n_1/x$ where x = a constant value less than one. $n_1=N(1-x)$ where N= size of population. Because of the dominant of *Nummulites* is signed hyposalinity enviroment.

Because of these problems possible different age and spatial (coeval but from different environment) resedimentation always has to be taken into account in diversity studies. The mixed ecological situation (in one stratum more than one population is represented) may cause problems in the calculation. The reason for this is that in geologically short period the ecological environment can change e.g. seasonal periodicity can occur at one time (MONOSTORI, 1972, 1975).

Discussion

Considering the problems the frequency, diversity and ecological demand of the groups and taxa in the taphocoenosis of the different strata can be summarised in the following.

Foraminifera – The dominant taxon in the fauna is the *Nummulites*. As stenohaline organism it is characteristic in normal salinity water and is very sensitive to alteration of slight changing in salinity. It is stenothermal organism, living in waters in which average annual temperature is above 22 °C. It is stenobath, its optimal depth of occurrence is 5-20 m. It lives in transparent water.

Regarding the entire stratigraphical column the most frequent species is *Nummulites subplanulatus* HANTKEN et MADARÁSZ, 1865. At some places it is extremely frequent, although the dimension of the specimens is uniform which may be caused by optimal circumstances (only for this species) or the selective effect of a high velocity current.

Miliolidae are presented in higher proportion in the fauna. The recent ecological demands of this family show marked difference to those of the *Nummulites*. They are most characteristic in the tropical hypersaline, shallow water environment (DOUGLAS, 1979) or indicate hypersaline lagoon or paludal environment (MURRAY, 1976).

In the *Nummulites* marl assemblage the two dominant groups suggest remarkably different environments. The reason for this can be the increased frequency of the Miliolidae in a short term (seasonal) arid hypersaline period that mixes the taxa of the two different environments in the sediment (MONOSTORI, 1972, 1975).

Another explanation for the presence of the two taxa with different ecological demands in the same stratum that the intensive currents could mix the stenohaline and euryhaline organisms. The evidence for this can be that the dimension of the extremely frequent forms is changing in a very narrow interval.

On the upper part of the sequence in the Alveolina limestone the proportion of *Nummulites* is decreasing while the Miliolidae and *Fasciolites* become dominant. The latter is also shallow marine vagilis benthos form. The ecological demands of these two groups are not that different as those of the previous taxa. Related to the *Nummulites* marl this assemblage by reason of the foraminifers, has been formed in shallower, oscillating salinity water (Fig. 4.).

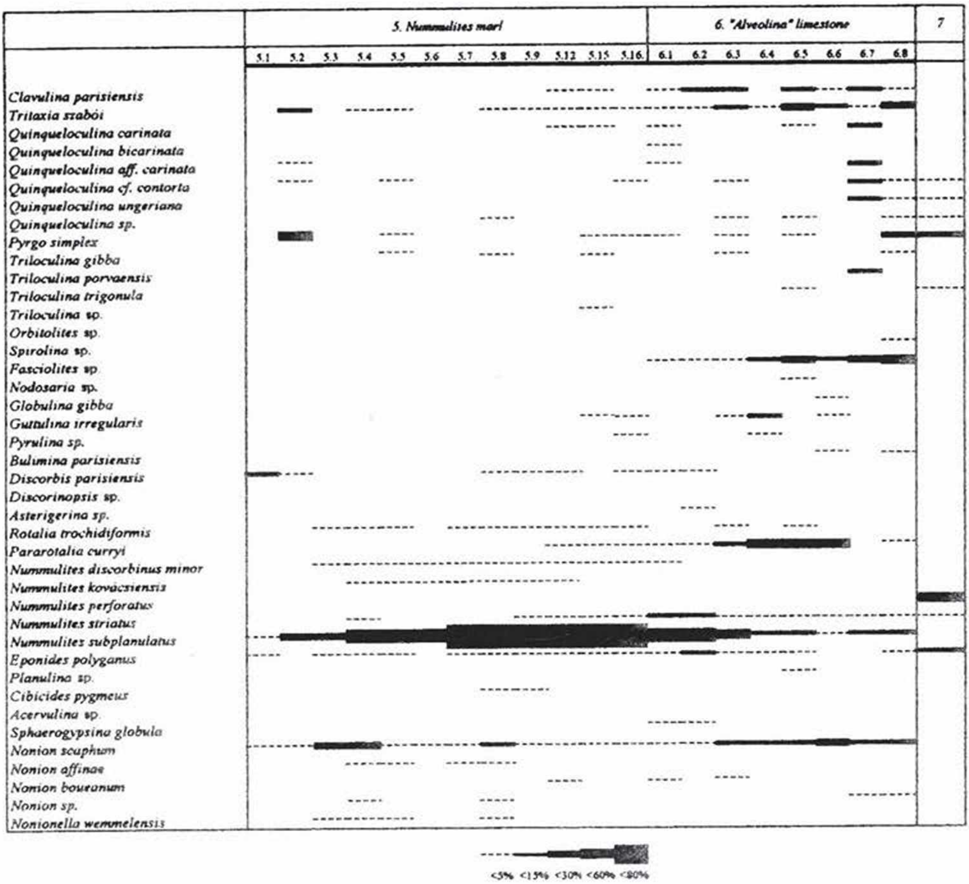

Fig. 4. The abundance of the foraminifera

Ostracoda – The palaeoecological examination of the ostracod assemblages is suitable for reconstructing palogeographical conditions. The ostracod fauna of the *Nummulites* marl have similar needs to those of the Foraminifers. In certain stratum there are groups living in deep sublittoral normal salinity waters, groups living in shallow sublittoral water with varying salinity and groups living in the transition zone. (Fig. 5).

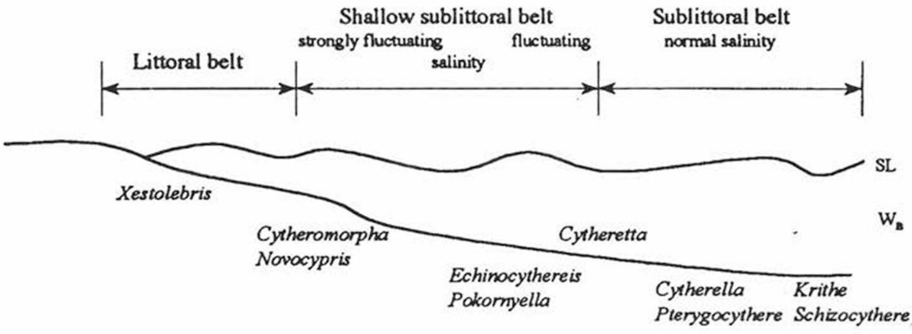

Fig.5. Ecological demands of ostracoda (after descriptions of MONOSTORI, 1972)
SL = sea level W_B = wave base

On the basis of this the problem is similar to the case of the foraminifera. By my opinion on the basement of Bed 5 the reason is the varying salinity shallow water while on the upper part the mixed taphocoenosis of groups with different ecological demands. The ecological demand of the ostracod fauna of the „*Alveolina*" limestone is almost the same. The dominant species determine a shallow littoral, sublittoral, oscillating salinity lagoon. (Fig. 6.)

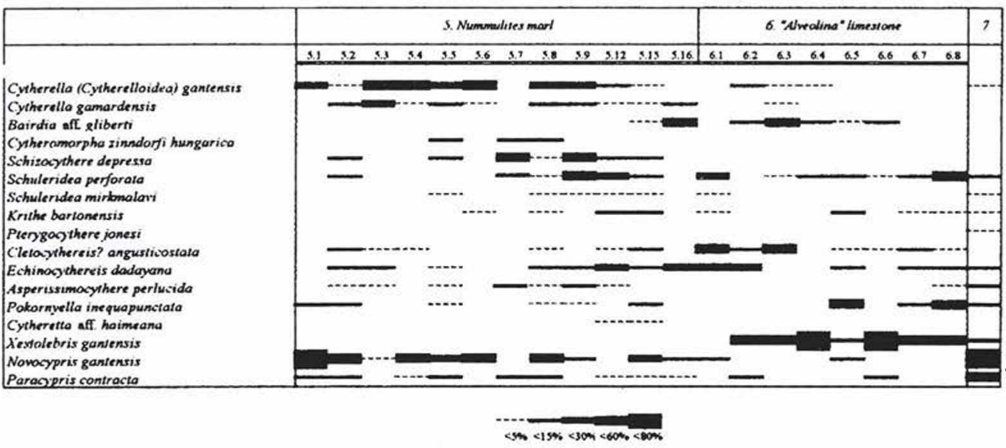

Fig. 6. The abundance of the ostracoda

Mollusca – On the basement of the sequence valuable mollusc fauna is found in *Variegated clay*, *Mollusca marl* and in the *Ostrea lumachelle*. Bed 3 contains *Brachyodontes* from the coastal mangrove swamp zone.

In Bed 4 (*Mollusca marl*) *Ostrea* is found in great amount, that sign coastal shallow marine environment especially 1-2 m deep water.

On the lower part of Bed 7 (*Ostrea* lumachelle) the characteristic genera are *Tympanotonus, Anomia, Ampullina, Turritella*. Most of these species indicate brackish water. The region could be a basin isolated from intensive currents and somehow from the open water. The upper part contains oyster, signing coastal shallow marine environment.

Palaeoenvironmental reconstruction

Summarizing the foraminifera, ostracoda and mollusca fauna examinations transgressive and regressive cycle can be determined in the Middle Eocene succession of the Csordakút Basin. The bauxite is deposited in the karst depressions of the Triassic carbonates. This is the basis of the *variegated clay*. Its development is due to a relative sea level rise. On this 8-10m thick *mollusc marl* was found. Presumably the transgression was stopped by a morphological barrier so that intensive erosion begun which is indicated by big dolomitie boulders in the marl.

The overlying marine assemblage of the *Nummulites marl* indicates that the subsidence became more and more intensive. On the basis of the *Nummulites marl* the fauna indicate frequent short period environmental change. Up the marl the deeper sublittoral zone indicating ostracod and foraminifer become dominant. Going upwards, from Bed 6 more and more sedimentary environment were typical. The rate of the subsidence has decreased so that the accommodation space has been reduced step by step. A shallow marine isolated lagoon has been developed with rich fauna dominated wide tolerance specimens („*Alveolina*" *limestone*). At last with the filling up of the basin (which is signed by the shallow marine coastal *Ostrea lumachelle* in the uppermost part of the succession) the tectonic activity has stopped, the accommodation space has almost disappeared and the biodiversity became less important.

Acknowledgements

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Systematical palaeontology

Protozoa GOLDFUSS, 1818 phylum
Rhizopodea VON SIEBOLD, 1845 classis
Foraminifera EHRENBERG, 1930 ordo
Textulariina DELAGE et HÉROUARD, 1896 subordo
Lituolacea DE BLAINVILLE, superfamilia
Trochamminidae SCHWAGER, 1877 familia

Clavulina d'ORBIGNY, 1826 genus

Clavulina parisiensis d'ORBIGNY, 1826
Pl. 1, fig. 1.

1826. *Clavulina parisiensis* n. sp. – d'ORBIGNY, p. 102., Pl. 7.
1865. *Clavulina parisiensis* d'ORBIGNY, – PARKER, JONES et BRADY, p. 29., Pl. I. f. 26.
1882. *Clavulina parisiensis* d'ORBIGNY – TERQUEM, p. 121., Pl. XII. f. 34.
1927. *Clavulina parisiensis* d'ORBIGNY – LIEBUS, p. 351., Pl. 12. f. 3.
1937. *Clavulina parisiensis* d'ORBIGNY – CUSHMAN, p. 18., Pl. II. f. 34.
1952. *Clavulina parisiensis* d'ORBIGNY – LE CALVEZ, p. 15., Pl. 4.
1956. *Clavulina parisiensis* d'ORBIGNY – HAQUE, p. 48., Pl. 5. f. 7–9.
1961. *Clavulina parisiensis* d'ORBIGNY – KAASSCHIETER, p. 144., Pl. I. f. 27–28.
1964. *Clavulina parisiensis* d'ORBIGNY – LOEBLICH et TAPPAN, p. C 279., f. 187/ 4.
1967. *Clavulina* cf. *parisiensis* d'ORBIGNY – ZILAHY, p. 401., Pl. V. f. 8.
1970. *Clavulina parisiensis* d'ORBIGNY – LE CALVEZ, p. 21., Pl. I. f. 1.
1970. *Clavulina parisiensis* d'ORBIGNY – NYÍRŐ, p. 71., Pl. I. f. 1.
1983. *Clavulina parisiensis* d'ORBIGNY – SETIAWAN, pp. 104–405., Pl. VII. f. 1.
1988. *Clavulina parisiensis* d'ORBIGNY – HORVÁTH KOLLÁNYI, pp. 47–48., Pl.II.f. 3–5.

Dimension: L=1.2-1.6 mm; W=0.3-0.5 mm.
Material: *5.12. bed* = 4 specimens; *5.15. bed* = 7 specimens; *6.1. bed* = 1 specimen; *6.2. bed* = 103 specimens; *6.3. bed* = 27 specimens; *6.5. bed* = 8 specimens; *6.6. bed* = 3 specimens; *6.7. bed* = 15; *6.8. bed* =2 specimens.
Stratigraphical range in Hungary: Middle and Upper Eocene (Upper Lutetian - Priabonian)

Tritaxia REUSS, 1860 genus

Tritaxia szabói (HANTKEN, 1868)
Pl. 1, fig. 2.

1868. *Rhabdogonium Szabói* n. sp. – HANTKEN, p. 9., Pl. I. f. 18.
1868. *Rhabdogonium haeringense* GÜMBEL – GÜMBEL, p. 631., Pl. I. f. 55 a–b.
1875. *Clavulina Szabói* HANTKEN – HANTKEN, p. 13., Pl. I. f. 9 a–d.
1903. *Clavulina Szabói* HANTKEN – WOJCIK, p. 498., Pl. VI. f. 20.
1932. *Clavulina Szabói* HANTKEN – PROTESCU, p. 88., Pl. I. f. 1–2.
1937. *Clavulinoides szabói* (HANTKEN) – CUSHMAN, p. 133., Pl. 18. f. 33 a–b; 34.
1937. *Clavulinoides szabói* (HANTKEN) – CUSHMAN, p. 134., Pl. 18. f. 35 a–b; 36.

1944. *Clavulina szabói* HANTKEN – MAJZON, p. 165., f. 5.
1946. *Clavulina szabói* HANTKEN – KAPTARENKO et CSERNUSZOVA, p. 229., Pl. II. f. 10.
1946. *Clavulinoides szabói* (HANTKEN) – VAN BELLEN, p. 86., Pl. 13. f. 16.
1949. *Clavulinoides szabói* (HANTKEN) – CUVILLIER et SZAKALL, p. 24., Pl. 10. f. 4.
1950. *Clavulinoides szabói* (HANTKEN) – CITA, p. 85., Pl. 6. f. 8.
1953. *Clavulinoides szabói* (HANTKEN) – HAGN, p. 39., f. 2.
1956. *Clavulinoides szabói* (HANTKEN) – HAGN, p. 116., Pl. 10. f. 1.
1956. *Clavulina szabói* HANTKEN – KAPTARENKO et CSERNUSZOVA, Pl. 7. f. 9.
1972. *Clavulinoides szabói* (HANTKEN) – MAJZON, pp. 114–115., Pl. I. f. 3–9., 11–16.,18–19., 21–23., Pl. II. 1–8., 14–20.
1977. *Tritaxia szabói* (HANTKEN) – HORVÁTH, p. 42.
1979. *Tritaxia szabói* (HANTKEN) SZTRÁKOS, Pl. V. f. 8.

Dimension: H=0.9-1.1 mm; W=0.5-0.8 mm.
Material: *5.2. bed* = 10 specimens; *5.4. bed* = 1 specimen; *5.5. bed* = 2 specimens; *5.8. bed* = 8 specimens; *5.9. bed* = 16 specimens; *5.12. bed* = 27 specimens; *5.15. bed* = 14 specimens; *5.16. bed* = 31 specimens; *6.1. bed* = 6 specimens; *6.2. bed* = 21 specimens; *6.3. bed* = 21 specimens; *6.4. bed* = 18 specimens; *6.5. bed* = 25 specimens; *6.6. bed* = 31 specimens; *6.7. bed* = 3 specimens; *6.8. bed* = 35 specimens.
Stratigraphical range in Hungary: Middle Eocene and Lower Oligocene (Bartonian - Kiscellian)

Miliolina DELAGE et HÉROUARD, 1896 subordo
Miliolacea EHRENBERG, 1839 superfamilia
Hauerinidae SCHWAGER, 1876 familia
Haueríninae SCHWAGER, 1876 subfamilia

Quinqueloculina d'ORBIGNY, 1826 genus

Quinqueloculina carinata d'ORBIGNY, 1826
Pl. 1, fig. 3.

1826. *Quinqueloculina carinata* (d'ORBIGNY) – ELLIS et MESSINA, p. 302., Pl. VI. f. 1.
1905. *Quinqueloculina carinata* (d'ORBIGNY) – FORNASINI, p. 67., Pl. 4. f. 2.
1942. *Quinqueloculina ermani* FRANZN.(?) – MÉHES, p. 38., Pl. XII. f. 266.
1961. *Quinqueloculina carinata* (d'ORBIGNY) – KAASSCHIETER, pp. 148–149., Pl. II. f. 9–11.
1970. *Quinqueloculina carinata* (d'ORBIGNY) – LE CALVEZ, pp. 33–34., Pl. IV. f. 4., Pl. V. f. 9.
1996. *Quinqueloculina carinata* (d'ORBIGNY) – HALUPKA, pp. 26–27., Pl. III. f. 6.

Dimension: L=0.4-0.7 mm; W=0.5-0.6 mm.
Material: *5.12. bed* = 1 specimen; *5.15. bed* = 12 specimens; *6.1. bed* = 13 specimens; *6.5. bed* = 1 specimen; *6.7. bed* = 15 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Quinqueloculina aff. *carinata* d'ORBIGNY,
Pl. 1, fig. 4.

Dimension: L=0.4-0.6 mm; W=0.4-0.5 mm.
Material: *5.2. bed* = 3 specimens; *6.1. bed* = 3 specimens; *6.7. bed* = 8 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Quinqueloculina bicarinata (d'ORBIGNY, 1878)
Pl. 1, fig. 5.

1878. *Quinqueloculina bicarinata* (d'ORBIGNY) – in TERQUEM, p. 68., Pl. VII. f. 10.
1902. *Quinqueloculina bicarinata* (d'ORBIGNY) – FORNASINI, p. 22., Pl. 16.
1945. *Quinqueloculina bicarinata* (d'ORBIGNY) – CUSHMAN, p. 16., Pl. 2. f. 9.
1955. *Quinqueloculina bicarinata* (d'ORBIGNY) – BHATIA, p. 671., Pl. 67. f. 12.
1957. *Quinqueloculina bicarinata* (d'ORBIGNY) – BOWEN, p. 56.
1961. *Quinqueloculina bicarinata* d'ORBIGNY – KAASSCHIETER, p. 149., Pl. II. f. 12.

Dimension: L=0.7-0.9 mm; W=0.4-0.7 mm.
Material: *6.1. bed* = 2 specimens.
Stratigraphical range in Hungary: Unknown, the species is mentioned from the Middle Eocene (Bartonian) of England.

Quinqueloculina cf. *contorta* (d'ORBIGNY)
Pl. 1, fig. 6.

1846. *Quinqueloculina contorta* (d'ORBIGNY) – in: ELLIS et MESSINA, p. 298., Pl. XX. f. 4–6.
1970. *Quinqueloculina contorta* (d'ORBIGNY) – LE CALVEZ, p. 34., Pl. V. f. 7–8.
1996. *Quinqueloculina contorta* (d'ORBIGNY) – HALUPKA, pp. 33–34., f. 5.5.

Dimension: L=0.9-1.3 mm; W=0.3-0.7 mm.
Material: *5.2. bed* = 4 specimens; *5.5. bed* = 21 specimens; *5.16. bed* = 3 specimens; *6.3. bed* = 3 specimens; *6.7. bed* = 15 specimens; *6.8. bed* = 8 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Quinqueloculina ungeriana d'ORBIGNY, 1846
Pl. 1, fig. 7.

1846. *Quinqueloculina ungeriana* n. sp. – d'ORBIGNY, p. 291., Pl. 18. F. 22–24.
1985. *Quinqueloculina ungeriana* d'ORBIGNY – PAPP et SCHMID, p. 100., Pl. 95. f. 6–8.

Dimension: L=1.0-1.2 mm; W=0.7-0.8 mm.
Material: *6.8. bed* = 5 specimens.
Stratigraphical range in Hungary: Paleogene and Neogene.

Quinqueloculina sp. indet.
Pl. 1, fig. 8.

Dimension: L=0.4-0.6 mm; W=0.4-0.5 mm.
Material: *5.8. bed* = 2 specimens; *6.3. bed* = 1 specimen; *6.5. bed* = 1 specimen; *6.7. bed* = 13 specimens; *6.8. bed* = 7 specimens.
Stratigraphical range in Hungary: Paleogene and Neogene.

Miliolinellinae VELLA, 1957 subfamilia

Pyrgo DEFRANCE, 1824 genus

Pyrgo simplex (d'ORBIGNY, 1846)
Pl. 2, fig. 1-2.

1846. *Biloculina simplex* (d'ORBIGNY) – (d'ORBIGNY), p. 264., Pl. XV. f. 25–24.
1947. *Pyrgo bulloides* (d'ORBIGNY) – LE CALVEZ, pp. 21., Pl. I.
1949. *Pyrgo simplex* (d'ORBIGNY) – CUVILLIER et SZAKALL, p. 46., Pl. XX. f. 3.
1961. *Pyrgo bulloides* (d'ORBIGNY) – KAASSCHIETER, p. 167., Pl. V. f. 18.
1970. *Pyrgo simplex* (d'ORBIGNY) – LE CALVEZ, p. 55., Pl. VIII. f. 7.
1985. *Pyrgo simplex* (d'ORBIGNY) – PAPP et SCHMID, pp. 89–90., Pl. 83. f. 1–3.
1996. *Pyrgo simplex* (d'ORBIGNY) – HALUPKA, pp. 40–41., Pl. V. f. 7–8.

Dimension: L=0.3-0.8 mm; W=0.3-0.8 mm.
Material: *5.2. bed* = 46 specimens; *5.5. bed* = 19 specimens; *5.15. bed* = 92 specimens; *5.16. bed* = 9 specimens; *6.1. bed* = 28 specimens; *6.3. bed* = 7 specimens; *6.5. bed* = 3 specimens; *6.8. bed* = 16 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Triloculina d'ORBIGNY, 1825 genus

Triloculina gibba d'ORBIGNY, 1825
Pl. 2, fig. 3.

1825. *Triloculina gibba* n. sp. – d'ORBIGNY, p. 133., Nr. 3.
1846. *Triloculina gibba* d'ORBIGNY – in ELLIS et MESSINA (1949), p. 247., Pl. 16. f. 22–24.
1882. *Triloculina gibba* d'ORBIGNY – TERQUEM, p. 163., Pl. 16. f. 31.
1947. *Triloculina gibba* d'ORBIGNY – LE CALVEZ, p. 17., Pl. 1.
1949. *Triloculina gibba* d'ORBIGNY – CUVILLIER et SZAKALL, p. 43., Pl. XIX. f. 2.
1961. *Triloculina gibba* d'ORBIGNY – KAASSCHIETER, p. 165., Pl. V. f. 13.
1970. *Triloculina gibba* d'ORBIGNY – LE CALVEZ, p. 49., Pl. VIII. f. 3–4.
1974. *Triloculina gibba* d'ORBIGNY – LUCZKOWSKA, p. 134., Pl. 23. f. 2a–c.
1985. *Triloculina gibba* d'ORBIGNY – PAPP et SCHMID, pp. 93–94., Pl. 86. f. 1–4.
1996. *Triloculina gibba* d'ORBIGNY – HALUPKA, pp. 44–45., Pl. VI. f. 6–7.

Dimension: L=0.4-0.6 mm; W=0.3-0.5 mm.

Material: *5.5. bed* = 17 specimens; *5.8. bed* = 1 specimen; *5.15. bed* = 23 specimens; *6.3. bed* = 2 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Triloculina porvaensis HANTKEN, 1875
Pl. 2, fig. 4.

1875. *Triloculina porvaensis* n. sp. – HANTKEN, p. 21., Pl. 13. f. 3.
1970. *Triloculina porvaensis* HANTKEN – LE CALVEZ, p. 52., Pl. 13. f. 12.
1970. *Triloculina porvaensis* HANTKEN – NYIRŐ, p. 71., Pl. I. f. 9.
1988. *Triloculina porvaensis* HANTKEN – HORVÁTH KOLLÁNYI, pp. 58–59., Pl. VIII. f. 4–5.

Dimension: L=1.2-1.3 mm; W=0.6-0.7.
Material: *6.7. bed* = 16 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Triloculina trigonula LAMARCK, 1804
Pl. 2, fig. 5.

1804. *Triloculina trigonula* n. sp. – LAMARCK, p. 531.
1807. *Triloculina trigonula* LAMARCK – LAMARCK, p. 9., Pl. 17. f. 4.
1882. *Triloculina trigonula* LAMARCK – TERQUEM, p. 165., Pl. 17. f. 3.
1947. *Triloculina trigonula* LAMARCK – LE CALVEZ, p. 18., Pl. 1.
1961. *Triloculina trigonula* LAMARCK – KAASSCHIETER, pp. 164–165., Pl. V. f. 8–10.

Dimension: L=0.5-0.7 mm; W=0.3-0.4 mm.
Material: *6.3. bed* = 1 specimen; *6.8. bed* = 2 specimens.
Stratigraphical range in Hungary: From Eocene to Miocene.

Triloculina sp. indet.
Pl. 2, fig. 6.

Dimension: L=0.7-0.8 mm; W=0.5-0.6 mm.
Material: *5.15. bed* = 3 specimens.
Stratigraphical range in Hungary: The genus is mentioned from the Paleogene of Hungary.

Soritidae EHRENBERG, 1839 familia
Soritinae EHRENBERG, 1839 subfamilia

Orbitolites LAMARCK, 1801 genus

Orbitolites sp. indet. LAMARCK, 1801
Pl. 6, fig. 1.

Dimension: L=0.3-0.4 mm; W=0.02 mm.

Material: The specimens is discovered for the first time in the *6.2. bed.* Up the geological column is converted into mass.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Milioliporidae BRÖNNIMANN et ZANINETTI, 1971 familia

Spirolina LAMARCK, 1804 genus

Spirolina sp. indet.
Pl. 2, fig. 7.

Dimension: L=0.55 mm; diameter of the protoconch is 0.3 mm; diameter of the older part of test is 0.2 mm.
Material: *6.8. bed* = 1 specimen.
Stratigraphical range in Hungary: Paleogene and Neogene

Alveolinidae EHRENBERG, 1839 familia

Fasciolites PARKINSON, 1811 genus

Fasciolites sp. indet. {=*Alveolina* auct. (nom. invalid.)}

Dimension: The dimenson of the test is not mesaured.
Material: The specimens is discovered for the first time in the *6. bed* and they are converted into mass in *6.3.* and *6.4. beds.*
Stratigraphical range in Hungary: Middle and Upper Eocene (Lutetian - Priabonian)

Rotaliina DELAGE et HÉROUARD, 1879 subordo
Nodosariacea EHRENBERG, 1838 superfamilia
Nodosariidae EHRENBERG, 1838 familia

Nodosaria LAMARCK, 1812 genus

Nodosaria sp. indet.
Pl. 3, fig. 1-2.

Dimension: The test has broken therefor I can not W=0.3 mm.
Material: *6.5. bed* = 2 specimens.
Stratigraphical range in Hungary: Paleogene

Polymorphinidae d'ORBIGNY, 1839 familia
Polymorphininae d'ORBIGNY, 1839 subfamilia

Globulina d'ORBIGNY in DE LA SAGRA, 1839 genus

Globulina gibba d'ORBIGNY, 1826
Pl. 3, fig. 3.

1826. ***Polymorphina (Globuline) gibba*** (nom. nud.) – d'ORBIGNY, p. 100., Pl. 7.
1846. ***Globulina gibba*** d'ORBIGNY – d'ORBIGNY, p. 227., Pl. XIII. f. 13–14.
1865. ***Polymorphina (Globuline) gibba*** d'ORBIGNY – PARKER, p. 29., Pl. II. f. 52.
1882. ***Globulina gibba*** d'ORBIGNY – TERQUEM, p. 130., Pl. XIII. f. 22–27.
1935. ***Globulina gibba*** d'ORBIGNY – CUSHMAN, p. 25., Pl. 9. f. 18.
1942. ***Globulina gibba*** d'ORBIGNY – CUSHMAN et RENZ, p. 7., Pl. 2. f. 4.
1946. ***Globulina gibba*** d'ORBIGNY – BELLEN, p. 37., Pl. 3. f. 4.
1946. ***Globulina gibba*** d'ORBIGNY – CUSHMAN, p. 18., Pl. 4. f. 16.
1948. ***Polymorphina (Globuline) gibba*** d'ORBIGNY – DORREEN, p. 289., Pl. 37. f. 7.
1950. ***Globulina gibba*** d'ORBIGNY – LE CALVEZ, p. 17.
1955. ***Globulina gibba*** d'ORBIGNY – KAASSCHIETER, p. 67., Pl. 5. f. 12.
1956. ***Globulina gibba*** d'ORBIGNY – HAGUE, p. 107., Pl. 30. f. 4.
1958. ***Globulina gibba*** d'ORBIGNY – BATJES, p. 121., Pl. IV. f. 9.
1961. ***Globulina gibba*** d'ORBIGNY – KAASSCHIETER, p. 183., Pl. VIII. f. 6–7.
1970. ***Globulina gibba*** d'ORBIGNY – KIESEL, p. 250., Pl. XI. f. 12; 18.
1970. ***Globulina gibba*** d'ORBIGNY – LE CALVEZ, p. 84., Pl. 17. f. 3–4.
1982. ***Globulina gibba*** d'ORBIGNY – PETTERS, p. 55., Pl. 8. f. 11.
1988. ***Globulina gibba*** d'ORBIGNY – HORVÁTH KOLLÁNYI, pp. 65–66., Pl.XIII. f. 1–2.

Dimension: L=0.6 mm; W=0.5 mm.
Material: *6.6. bed* = 1 specimen .
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Guttulina d'ORBIGNY, 1839 genus

Guttulina irregularis (d'ORBIGNY, 1846)
Pl. 3, fig. 4.

1846. *Globulina irregularis* d'ORBIGNY – d'ORBIGNY, p. 226., Pl. XIII. f. 9–10.
1935. *Guttulina irregularis* (d'ORBIGNY) – CUSHMAN, p. 24., Pl. 9. f. 13–16.
1946. *Guttulina irregularis* (d'ORBIGNY) – CUSHMAN, p. 16., Pl. 4. f. 12.
1950. *Guttulina irregularis* (d'ORBIGNY) – LE CALVEZ, p. 14.
1955. *Guttulina irregularis* (d'ORBIGNY) – BHATIA, p. 676., Pl. 67. f. 26.
1955. *Guttulina irregularis* (d'ORBIGNY) – KAASSCHIETER, p. 66., Pl. 5. f. 11.
1961. *Guttulina irregularis* (d'ORBIGNY) – KAASSCHIETER, p. 181., Pl. VIII. f. 2–3.
1963. *Guttulina irregularis* (d'ORBIGNY) – KÜMMERLE, p. 37., Pl. 4. f. 7.
1970. *Guttulina irregularis* (d'ORBIGNY) – KIESEL, p. 243., Pl. X. f. 21.
1970. *Guttulina irregularis* (d'ORBIGNY) – LE CALVEZ, p. 92., Pl. 20. f. 3.
1988. *Guttulina irregularis* (d'ORBIGNY) – HORVÁTH KOLLÁNYI,pp.67–68., Pl.XIII.f. 4.

Dimension: L=0.5 mm; W=0.6 mm.
Material: *5.15. bed* = 1 specimen; *5.16. bed* = 1 specimen; *6.3. bed* = 6 specimens; *6.4. bed* = 26 specimens; *6.6. bed* = 7 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Pyrulina d'ORBIGNY, 1839 genus

Pyrulina sp. indet.
Pl. 3, fig. 5.

Dimension: L=0.5 mm; W=0.25 mm.
Material: *5.16. bed* = 1 specimen; *6.4. bed* = 1 specimen.
Stratigraphical range in Hungary: The genus is mentioned from Lower Paleogene of Hungary

Buliminacea JONES, 1857 superfamilia
Buliminidae JONES, 1875 familia
Bulimininae KAASSCHIETER, 1961 subfamilia

Bulimina d'ORBIGNY, 1826 genus

Bulimina parisiensis (CUSHMAN et TODD, 1945)
Pl. 3, fig. 6.

1942. *Bulimina trigona* (CUSHMAN et TODD) – CUSHMAN et TODD, p. 17., Pl. 4. f. 6.
1946. *Bulimina trigona* (CUSHMAN et TODD) – CUSHMAN et PARKER, p. 91.,Pl.21. f. 18.
1950. *Bulimina trigona* (CUSHMAN et TODD) – LE CALVEZ, p. 37., Pl. 3. f. 35.
1961. *Bulimina parisiensis* nov. nom. – KAASSCHIETER, p. 190., Pl. VIII. f. 19., Pl. IX. f. 3–4.

Dimension: L=0.6 mm; W=0.3 mm.
Material: *6.6. bed* = 3 specimens; *6.8. bed* = 1 specimen.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Discorbacea EHRENBERG, 1838 superfamilia
Discorbidae EHRENBERG, 1838 familia

Discorbis LAMARCK, 1804 genus

Discorbis parisiensis (d'ORBIGNY, 1865)
Pl. 3, fig. 7.

1865. *Rosalina parisiensis* (d'ORBIGNY) – in PARKER, JONES et BRADY, Pl. II. f. 70.
1882. *Rosalina parisiensis* (d'ORBIGNY) – TERQUEM, p. 99., Pl. 10. f. 15–17.
1927. *Discorbis parisiensis* (d'ORBIGNY) – CUSHMAN, p. 142.
1949. *Discorbis parisiensis* (d'ORBIGNY) – LE CALVEZ, p. 16.
1961. *Discorbis parisiensis* (d'ORBIGNY) – KAASSCHIETER, p. 208., Pl. XI. f. 9–10.

Dimension: H=0.6-0.7 mm; W=0.5-0.7 mm.
Material: *5.2. bed* = 2 specimens; *5.8. bed* = 8 specimens; *5.9. bed* = 26 specimens; *5.12. bed* = 13 specimens; *5.16. bed* = 30 specimens; *6.1. bed* = 4 specimens; *6.2. bed* = 7 specimens.

Stratigraphical range in Hungary: Paleogene

Discorinopsis COLE, 1941 genus

Discorinopsis sp. indet.
Pl. 3, fig. 8, Pl. 6, fig. 2.

Dimension: H=0.3-0.4 mm; W=0.5-0.7 mm.
Material: *6.8. bed* = 5 specimens.
Stratigraphical range in Hungary: Middle and Upper Eocene (Lutetian - Priabonian)

Asterigerinidae d'ORBIGNY, 1839 familia

Asterigerina d'ORBIGNY, in de la SAGRA, 1839 genus

Asterigerina sp. indet.
Pl. 3, fig. 9.

Dimension: H=0.4 mm; W=0.6 mm.
Material: *6.2. bed* = 1 specimen.
Stratigraphical range in Hungary: The genus is mentioned from Paleogene and Neogene

Rotaliacea EHRENBERG, 1839 superfamilia
Rotaliidae EHRENBERG, 1839 familia

Rotalia LAMARCK, 1804 genus

Rotalia trochidiformis LAMARCK, 1804
Pl. 4, fig. 1.

1804. *Rotalites trochidiformis* n. sp. – LAMARCK, p. 184.
1882. *Rotalina trochidiformis* LAMARCK – TERQUEM, p. 68., Pl. VI. f. 4.
1882. *Rotalina saxorum* d'ORBIGNY – TERQUEM, p. 69., Pl. VI. f. 4.
1949. *Rotalia trochidiformis* LAMARCK – LE CALVEZ, p. 32.
1952. *Rotalia trochidiformis* LAMARCK – BERMUDEZ, p. 70., Pl. XII. f. 1.
1957. *Rotalia trochidiformis* LAMARCK – SACAL, DEBORULE et CUVILLIER, p. 40., Pl. XVI. f. 7.
1964. *Rotalia trochidiformis* LAMARCK – LOEBLICH et TAPPAN, p. C 607., f. 479/ 1, 480/1–3.
1970. *Rotalia trochidiformis* LAMARCK – LE CALVEZ, pp. 159–160., Pl. 34. f. 4–5.
1988. *Rotalia trochidiformis* LAMARCK – HORVÁTH KOLLÁNYI, pp. 159–160.,Pl. XVIII. f. 1–2.

Dimension: H=0.3-0.5 mm; W=0.4-0.6 mm.
Material: *5.3. bed* = 1 specimen; *5.4. bed* = 6 specimens; *5.5. bed* = 1 specimen; *5.7. bed* = 8 specimens; *5.8. bed* = 6 specimens; *5.9. bed* = 24 specimens; *5.12. bed* = 7

specimens; *5.15. bed* = 3 specimens; *5.16. bed* = 8 specimens; *6.3. bed* = 4 specimens; *6.5. bed* = 1 specimen.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Pararotaliinae REISS, 1963 subfamilia

Pararotalia LE CALVEZ, 1949 genus

Pararotalia curryi (CUSHMAN, 1928)
Pl. 4, fig. 2-3.

1928. *Rotalia canui* (CUSHMAN) – ELLIS et MESSINA, p. 55., Pl. III. f. 2.
1970. *Pararotalia curryi* (CUSHMAN, 1928) – LE CALVEZ, p. 162., Pl. XXXV. f. 1–2.
1996. *Pararotalia curryi* (CUSHMAN, 1928) – HALUPKA, pp. 63–64., Pl. X. f. 6–7.

Dimension: Diameter of the last whorl 0.4-0.6 mm; widthis 0.3-0.5
Material: *5.12 bed* = 2 specimens; *5.15. bed* = 3 specimens; *5.16. bed* = 15 specimens; *6.1. bed* = 23 specimens; *6.2. bed* = 17 specimens; *6.3. bed* = 17 specimens; *6.4. bed* = 134 specimens; *6.5. bed* = 23 specimens; *6.6. bed* = 128 specimens; *6.8. bed* = 3 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Nummulitidae de BLAINVILLE, 1825 familia

Nummulites LAMARCK, 1801 genus

Nummulites discorbinus minor DE LA HARPE, 1926

1926. *Nummulites discorbina* SCHLOTHEIM var. *minor* n. sp. – DE LA HARPE, p. 38.
1926. *Nummulites discorbina* SCHLOTHEIM var. *minor* DE LA HARPE – ROZLOZSNIK, pp. 192–193. Pl. V. f. 24.
1988. *Nummulites discorbina minor* DE LA HARPE – JÁMBOR -KNESS, pp. 289–290. Pl. XIX. f. 324–327

Material: The specimens is discovered for the first time in the *5.3. bed.* But their quantity is limited. I could find their to the *5.16. bed*
Stratigraphical range in Hungary: Upper part of Middle Eocene (Bartonian)

Nummulites kovácsiensis HANTKEN, 1865

1865. *Nummulites Kovácsiensis* n. sp. – HANTKEN, p. 414. nom. nud.
1924. *Nummulites Kovácsiensis* HANTKEN – ROZLOZSNIK, pp. 186–187.,Pl. IV.f.10 a–g.
1988. *Nummulites kovácsiensis* HANTKEN – JÁMBOR –KNESS, pp. 340–341. Pl. XXIX. f. 491–498., 500–501.

Dimension: The diameter is 1-2mm.
Material: The specimens is discovered for the first time in the *5.3. bed.* But their quantity is limited. I could find their to the *5.9 - 5.16. bed.*

Stratigraphical range in Hungary: Lower part of Middle Eocene (Lutetian)

Nummulites perforatus (MONTFORT), 1808

1803. *Nautilus lenticularis* FICHTEL et MOLL, p. 57., Pl. VII. f. H.
1808. *Egeon perforatus* nom. trans. – MONTFORT, pp. 166–167., f. 2.
1988. *Nummulites discorbina minor* DE LA HARPE – JÁMBOR-KNESS, pp. 239–244. Pl. XI. f. 183, 186–187, Pl. XII. f. 188–193. Pl. XIII. f. 194–197. (cum syn)

Dimension: Diameter of the test is 1.5 - 2 cm.
Material: The specimens is discovered for the first time in the *7. bed (Ostrea lumachella)* = 12 specimens
Stratigraphical range in Hungary: Middle Eocene (Upper Lutetian - Bartonian)

Nummulites striatus BRUGUIÈRE, 1792

1792. *Camerina striata* n. sp. – BRUGUIÉRE, pp. 399–400.
1972. *Nummulites striatus* BRUGUIÈRE – VANOVA, pp. 120–121. Pl. XXVII. f. 3–4. XXVIII. f. 3–4.(cum syn)

Dimension: Diameters of the tests are 1-2 mm.
Material: The specimens is discovered for the first time in the *5.3. bed.* Up the geological column is converted into mass in the *5.16.-6.1. beds.*
Stratigraphical range in Hungary: Upper part of Middle Eocene (Bartonian)

Nummulites subplanulatus HANTKEN et MADARÁSZ, 1865

1865. *Nummulites subplanulatus* n. sp. – HANTKEN et MADARÁSZ, p. 414–415.
1972. *Nummulites subplanulatus* HANTKEN et MADARÁSZ – BOMBITA, p. 73. f. 64–68. , f. 71–74 (cum syn)

Dimension: Diameter of the test is 1.7-2.5mm, and the widthis 0.5-1 mm.
Material: The most frequent element is in the fauna of the Csordakut Basin. The specimens is discovered for the first time in the *5. bed.* Up the geological column is converted into mass from the *5.4. bed* to the *5.12. bed.*
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Orbitoidacea SCHWAGER, 1876 superfamilia
Eponididae HOFKER, 1951 familia

Eponides de MONTFORT, 1808 genus

Eponides polyganus LE CALVEZ, 1949
Pl. 4, fig. 4.

1949. *Eponides polyganus* n. sp. – LE CALVEZ, p. 28., Pl. V. f. 90–92.
1961. *Eponides polyganus* LE CALVEZ – KAASSCHIETER, p. 210., Pl. XII. f. 1.
1970. *Eponides polyganus* LE CALVEZ – NYÍRŐ, p. 76., Pl. II. f. 1.
1970. *Eponides polyganus* LE CALVEZ – LE CALVEZ, p. 136., Pl. 37. f. 1., 9.

1975. *Eponides polyganus* LE CALVEZ – SAMUEL, p. 147., Pl. LXXXII. f. 6.
1988. *Eponides polyganus* LE CALVEZ – HORVÁTH KOLLÁNYI, p. Pl. XIX. f. 4–5.

Dimension: H=0.6-0.8 mm; W=0.7-0.9 mm.
Material: *5.3. bed* = 2 specimens; *5.4. bed* = 11 specimens; *5.5. bed* = 8 specimens; *5.7. bed* = 17 specimens; *5.8. bed* = 11 specimens; *5.9. bed* = 40 specimens; *5.12. bed* = 72 specimens; *5.15. bed* = 3 specimens; *5.16. bed* = 19 specimens; *6.1. bed* = 12 specimens; *6.2. bed* = 97 specimens; *6.3. bed* = 9 specimens; *6.4. bed* = 3 specimens; *6.5. bed* = 2 specimens; *6.8. bed* = 1 specimen.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cibicididae CUSHMAN, 1927 familia

Planulina d'ORBIGNY, 1826 genus

Planulina sp. indet.
Pl. 4, fig. 5-6.

Dimension: Height of the last whorl is 0.7 mm, and their widthis 0.6mm.
Material: *6.5. bed* = 1 specimen.
Stratigraphical range in Hungary: Paleogene

Cibicides de MONTFORT, 1808 genus

Cibicides pygmeus (HANTKEN, 1875)
Pl. 4, fig. 7-8.

1875. *Truncatulina pygmea* HANTKEN – HANTKEN, p. 78., Pl. 10. f. 8.
1955. *Eponides pygmeus* (HANTKEN) – BHATIA, p. 683., Pl. 67. f. 7.
1958. *Eponides pygmeus* (HANTKEN) – BATJES, p. 146., Pl. 7. f. 11.
1961. *Cibicides pygmeus* (HANTKEN) – KAASSCHIETER, p. 219., Pl. XIV. f. 1.

Dimension: Widthof the last whorl is 0.25mm.
Material: *5.8. bed* = 17 specimens; *5.9. bed* = 34 specimens.
Stratigraphical range in Hungary: Paleogene

Acervulinidae SCHULTZE, 1854 familia

Acervulina SCHULTZE, 1854 genus

Acervulina sp. indet.
Pl. 6, fig. 4.

Dimension: Diameter of the test is 0.13 mm.
Material: *6.3. bed* = 1 specimen.
Stratigraphical range in Hungary: Paleogene

Sphaerogypsina GALLOWAY, 1933 genus

Sphaerogypsina globula (REUSS, 1848)
Pl. 5, fig. 1-2.

1848. *Ceriopora globulus* REUSS – REUSS, p. 33., Pl. 5. f. 7.
1886. *Gypsina globulus* REUSS – UHLIG, pp. 197–200., f. 7–8.
1918. *Gypsina globulus* REUSS – TRAUTH, p. 242., Pl. III. f. 1.
1935. *Gypsina globulina* (REUSS) – CUSHMAN, p. 54., Pl. 23. f. 4–5.
1937. *Gypsina globulus* (REUSS) – SILVESTRI, pp. 156–157., Pl. VIII. f. 1.
1954. *Gypsina globula* (REUSS) – COLOM, p. 208., Pl. XV. f. 11.
1957. *Sphaerogypsina globula* (REUSS) – PURI, p. 143., Pl.14. f. 7.,Pl. 15. f. 9.
1960. *Gypsina globula* (REUSS) – TODD et LOW, p. 853., Pl. 258. f. 9.
1963. *Sphaerogypsina globulus* (REUSS) – BIEDA, pp. 45–46., Pl. III. f. 6–10.
1963. *Sphaerogypsina globula* (REUSS) – KIESEL et LOTSCH, p. 17., Pl. VI. f. 4.
1964. *Sphaerogypsina globulus* (REUSS) – LOEBLICH et TAPPAN, p. C 698., f. 569/ 1–2.
1967. *Sphaerogypsina globulus* (REUSS) – VITÁLIS ZILAHY, pp. 407–408., Pl. VII. f. 14., Pl. VIII. f. 1–2.
1969. *Sphaerogypsina globula* (REUSS) – VITÁLIS ZILAHY, p. 159., Pl. III., IV., V.
1970. *Sphaerogypsina globula* (REUSS) – NYIRŐ, p. 78., Pl. II. f. 9.
1988. *Sphaerogypsina globula* (REUSS) – HORVÁTH KOLLÁNYI, p. 85., Pl. XXV. f. 4.

Dimension: Diameter of the test is 0.45 mm
Material: *6.1. bed* = 2 specimens; *6.2. bed* = 1 specimen.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cassidulinacea d'ORBIGNY, 1839 superfamilia
Nonionidae SCHULTZE, 1854 familia
Nonioninae SCHULTZE, 1854 subfamilia

Nonion de MONTFORT, 1808 genus

Nonion scaphum (FICHTEL et MOLL, 1978)
Pl. 5, fig. 3.

1798. *Nautilus scapha* FICHTEL et MOLL – FICHTEL et MOLL, p. 105., Pl. 19. f. d–f.
1844. *Nonionina scapha* FICHTEL et MOLL – BRADY, p. 730., Pl. 109. f. 14–15.
1846. *Nonionina communis* d'ORBIGNY – d'ORBIGNY, p. 106., Pl. V. f. 7–8.
1882. *Nonionina communis* d'ORBIGNY – TERQUEM, p. 42., Pl. II. f. 6a–c.
1939. *Nonion scaphum* FICHTEL et MOLL – CUSHMAN, p. 20., Pl. 5. f. 18–21.
1944. *Nonion acutidorsatum* TEN DAM – TEN DAM, p. 108., Pl. V. 3. f. 19.
1950. *Nonion commune* (d'ORBIGNY) – LE CALVEZ, p. 52., Pl. 3.
1951. *Nonion scaphum* FICHTEL et MOLL – MARKS, p. 49., Pl. 5. f. 16.
1955. *Nonion scaphum* FICHTEL et MOLL – BHATIA, p. 677., Pl. VI. 66. f. 3a–b.
1961. *Nonion scaphum* FICHTEL et MOLL – KAASSCHIETER, p. 204., Pl. X.f. 14., Pl. XI. f. 5.
1970. *Florilus scaphus* FICHTEL et MOLL – KIESEL, p. 282., Pl. XV. f. 6.
1970. *Nonion commune* (d'ORBIGNY) – LE CALVEZ, p. 191., Pl. 27. f. 5.
1985. *Nonion commune* (d'ORBIGNY) – PAPP et SCHMID, p.45., Pl. 34. f. 1–5.

1988. *Nonion scaphum* FICHTEL et MOLL – HORVÁTH KOLLÁNYI, p. 92., Pl. XXIX. f. 1–2.

Dimension: Height of the last whork is 0.2-0.6mm and their width i s0.2-0.4 mm.
Material: *5.2. bed* =1 specimen; *5.3. bed* = 52 specimens; *5.4. bed* = 142 specimens; *5.5. bed* = 42 specimens; *5.6. bed* = 6 specimens; *5.7. bed* = 12 specimens; *5.8. bed* = 211 specimens; *5.9. bed* = 189 specimens; *5.12. bed* = 43 specimens; *5.15. bed* = 16 specimens; *5.16. bed* = 21 specimens; *6.1. bed* = 31 specimens; *6.2. bed* = 6 specimens; *6.3. bed* = 34 specimens; *6.4. bed* = 23 specimens; *6.5. bed* = 16 specimens; *6.6. bed* = 68 specimens; *6.7. bed* = 15 specimens; *6.8. bed* = 11 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Nonion affinae (REUSS, 1851)
Pl. 5, fig. 4.

1851. *Nonionina affinis* REUSS – REUSS, p. 72., Pl. V. f. 32.
1939. *Nonion affinae* (REUSS) – CUSHMAN, p. 9., Pl. 2. f. 13.
1944. *Nonion affinae* (REUSS) – TEN DAM, p. 103.
1955. *Nonion umbilicatulum* (WALKER et JACOB) – BHATIA, p. 140., Pl. 678. Pl.66.f. 2.
1958. *Nonion affinae* (REUSS) – BATJES, p. 140., Pl. VI. f. 12.
1961. *Nonion affinae* (REUSS) – KAASSCHIETER, pp. 203., Pl. XI. f. 3–4.

Dimension: Height of the last whorl is 0.2-0.3 mm, and their width is 0.2-0.3mm.
Material: *5.4. bed* = 1 specimen; *5.5. bed* = 1 specimen; *5.7. bed* = 1 specimen; *5.8. bed* = 2 specimens.
Stratigraphical range in Hungary: Unknown, the species is mentioned from the Middle Eocene (Bartonian) of England and France

Nonion boueanum (d'ORBIGNY, 1846)
Pl. 5, fig. 5.

1846. *Nonionina boueana* d'ORBIGNY – d'ORBIGNY, p. 108., Pl. 5. f. 11–12.
1930. *Nonion asterizans* FICHTEL et MOLL – CUSHMAN, p. 6., Pl. 2. f. 5–7.
1939. *Nonion boueanum* (d'ORBIGNY) – CUSHMAN, p. 12., Pl. 3. f. 7–8.
1964. *Florilus asterizans* FICHTEL et MOLL – LOEBLICH et TAPPAN,p.C 746.,Pl.612. f. 4.
1976. *Nonion boueanum* (d'ORBIGNY) –HANSEN et LYKKE – ANDERSEN, pp. 22–23., Pl. 21. f. 24.

Dimension: Height of the last whorl is 0.4-0.5 mm, and their width is 0.3-0.4 mm.
Material: *5.12. bed* = 2 specimens; *6.1. bed* = 9 specimens; *6.3. bed* = 1 specimen.
Stratigraphical range in Hungary: Paleogene and Neogene

Nonion sp. indet.1.
Pl. 5, fig. 6., 8.

Dimension: Height of the last whorl is 0.8 mm, width 0.6 mm.

Material: *5.4. bed* = 2 specimens; *5.8. bed* = 39 specimens; *6.7. bed* = 1 specimen; *6.8. bed* = 1 specimen.
Stratigraphical range in Hungary: Paleogene

Nonionella CUSHMAN, 1926 genus

Nonionella wemmelensis KAASSCHIETER, 1961
Pl. 5, fig. 7.

1961. *Nonionella wemmelensis* n. sp. – KAASSCHIETER, pp. 205–206., Pl. XI. f. 26.

Dimension: Height of the last whorl is 0.4 mm, and their width is 0.3mm.
Material: *5.3. bed* = 10 specimens; *5.4. bed* = 11 specimens; *5.5. bed* = 1 specimen; *5.8. bed* = 17 specimens.
Stratigraphical range in Hungary: Unknown, the species is mentioned from the Middle Eocene (Bartonian) of Belgium

Cnidaria HATSCHEK, 1888 phylum
Anthozoa EHRENBERG, 1834 classis
Scleractinia BOURNE, 1900 subclassis
Scleractinia BOURNE, 1900 ordo
Faviina VAUGHAN et WELLS, 1943 subordo
Faviicae GREGORY, 1900 superfamilia
Rhizangiidae d'ORBIGNY, 1851 familia

Rhizangia MILNE-EDWARDS et HAIME, 1848 genus

Rhizangia sp. indet.
Pl. 5, fig. 2.

Dimension: Diameter of the corallite is 10-12 mm
Material: *8. bed* = 4 specimens

Mussidae ORTMANN, 1890 familia

Circophyllia MILNE-EDWARDS et HAIME, 1848 genus

Circophyllia sp. indet.
Pl. 5, fig. 1.

Dimension: Diameter of the corallite is 34-35 mm and their width is 23-28 mm
Material: *8. bed* = 2 specimens

Mollusca LINNÉ, 1758 phylum
Gastropoda CUVIER, 1798 classis
Prosobranchia MILNE – EDWARDS, 1848 subclassis
Archeogastropoda THIELE, 1925 ordo
Neritopsina COX et KNIGHT, 1960 subordo
Neritacea RAFINESQUE, 1815 superfamilia
Neritidae RAFINESQUE, 1815 familia
Neritinae RAFINESQUE, 1815 subfamilia

Velates de MONTFORT, 1810 genus

Velates schmidelianus (CHEMNITZ, 1786)
Pl. 5, fig. 3.

1786. *Velates schmideliana* n. sp. – CHEMNITZ, p. 130., Pl. 114. f. 965.
1866. *Velates schmidelianus* CHEMNITZ – DESHAYES, III. p. 18.
1888. *Velates schmidelianus* CHEMNITZ – COSSMANN, III. p 92.
1900. *Velates schmidelianus* CHEMNITZ – OPPENHEIM, p. 182.
1911. *Velates schmidelianus* CHEMNITZ – BOUSSAC, p. 269.
1913. *Velates schmideli* CHEMNITZ – COSSMANN et PISSARRO, Pl. VI. f. 40–1.
1925. *Velates schmidelianus* CHEMNITZ – SCHLOSSER, p. 82.
1930. *Velates schmidelianus* CHEMNITZ – CUVILLIER, p. 150.
1953. *Velates schmideli* CHEMNITZ – SZŐTS, p. 143., Pl. I. f. 41–56.
1957. *Velates schmidelianus* CHEMNITZ – MÉSZÁROS, p. 37., Pl. 6. f. 1., Pl. 21. f. 10., Pl. 22. f. 1.
1963. *Velates schmidelianus* CHEMNITZ – TATARIM–VLAICU, p. 163.
1966. *Velates schmidelianus* CHEMNITZ – STRAUSZ, p. 17., Pl. 4. f. 1; 4., Pl. 23. f. 6–9., Pl. 24. f. 1–3.
1980. *Velates schmidelianus* CHEMNITZ – KECSKEMÉTI – KÖRMENDY et MÉSZÁROS , p. 43., Pl. VII. f. 5.

Dimension: H = 47mm; W = 70 mm.
Material: *6.4. bed* = 1 specimen.

Mesogastropoda ordo
Cerithiacea superfamilia
Turritellidae familia

Turritella LAMARCK, 1818 genus

Turritella sp. indet.
Pl. 7, fig. 4.

Dimension: H=50; 43; 18; 35; 56 mm; H_L (height of the last whorl)= 13; 7; 3; 7; 14 mm; W=17; 12; 3; 4; 18 mm.
Material: *8.bed* = 3 specimens.

Diastomidae familia

Diastoma DESHAYES, 1861 genus

Diastoma roncanum (BRONGNIART, 1823)
Pl. 7, fig. 6-8.

1823. *Melanis costata* LAMARCK var. *roncana* BRONGNIART, p. 59., Pl. II. f. 18.
1953. *Diastoma roncanum* (BRONGNIART) – SZŐTS, p. 49., 165., Pl. III. f. 33–34.
1966. *Diastoma costellatum roncanum* (BRONGNIART) – STRAUSZ, p. 36., 119.
1972. *Diastoma roncanum* (BRONGNIART) – KECSKEMÉTI-KÖRMENDY, p. 236., Pl. XIV. f. 5–7.

Dimension: H= 18; 16mm; H_L = 6; 9 mm; W = 4; 7 mm.
Material: *8.bed* = 3 specimens

Cerithiidae familia
Cerithiinae subfamilia

Cerithium BRUGUIERE, 1789 genus

Cerithium corvinum subcorvinum (OPPENHEIM, 1894)
Pl. 7, fig. 5.

1823. *Rostellaria corvina* BRONGNIART, pp. 74–75., Pl. IV. f. 8.
1862. *Cerithium corvinum* BRONGNIART – ZITTEL, pp. 375 –376., Pl. II. f. 2.
1953. *Cerithium subcorvinum* OPPENHEIM – Szőts, p. 50., 168., Pl. IV. f. 8 –13.
1955. *Cerithium (Rinoclavis) subcorvinum* OPPENHEIM – KISS-KOCSIS BÁNYAI, p. 371., Pl. XV. f. 5a–f.
1966. *Cerithium (Rinoclavis) corvinum subcorvinum* OPPENHEIM – STRAUSZ, p. 30.
1980. *Cerithium corvinum subcorvinum* (OPPENHEIM) – KECSKEMÉTI-KÖRMENDY et MÉSZÁROS, pp., 47–48., Pl. VIII. f. 5 – 6.; Pl. IX. f. 2.

Dimension: H= 62; 53; 75 mm; H = 10; 13 mm; W = 18; 16; 15 mm.
Material: *8.bed* = 5 specimens.

Potamididae familia
Potamidinae subfamilia

Tympanotonus (KLEIN) SCHUMACHER, 1817 genus

Tympanotonus calcaratus (BRONGNIART, 1823)
Pl. 8, fig. 1-5.

1823. *Cerithium calcaratus* n. sp. – BRONGNIART, p. 69., Pl. III. f. 15.
1972. *Tympanotonus calcaratus* (BRONGNIART) – KECSKEMÉTI – KÖRMENDY, p.232., Pl. XIII. f. 6.
1980. *Tympanotonus calcaratus* (BRONGNIART) – KECSKEMÉTI – KÖRMENDY, p. 50.

Dimension: H= 20; 18; 16; 23; 15 mm; H = 4; 6; 3; 3; 4 mm; W = 7; 6; 6; 5; 8 mm.
Material: *8. bed* = 4 specimens.

Tympanotonus hungaricus (ZITTEL, 1862)
Pl. 8, fig. 6-7.

1862. *Cerithium hungaricum* ZITTEL, p. 373., Pl. II. f. 1a–b.
1953. *Tympanotonus hungaricus* (ZITTEL) – SZŐTS, p. 47., 162., Pl. II. f. 9–18.
1955. *Tympanotonus hungaricus* (ZITTEL) – KISS–KOCSIS BÁNYAI, pp. 363–364.Pl. XIII. f. 3a – i.
1972. *Tympanotonus hungaricus* (ZITTEL) – KECSKEMÉTI– KÖRMENDY, p. 234., Pl. XII. f. 9–10., Pl. XIII. f. 2.

Dimension: H_L =10; 8 mm; W=15; 13 mm.
Material: *8. bed* = 2 specimens.

Strombacea superfamilia
Strombidae familia

Strombus LINNÉ, 1758 genus

Strombus cf. *tournoueri* BAYAN, 1870
Pl. 8, figs 8–10.

1870. *Strombus* (?) *tournoueri* n. sp. – BAYAN, p. 480.
1871. *Strombus auriculatus* BRONGNIART – HANTKEN, p. 70.
1909. *Strombus auriculatus* GRAPL. – TAEGER, p. 251., Pl. 10. f. 14.
1938. *Strombus tournoueri* BAYAN – SZŐTS, p. 188., Pl. 6. f. 9.
1966. *Strombus (Oostrombus) tournoueri* BAYAN – STRAUSZ, p. 43., Pl. 10. f. 1–2.
1980. *Strombus tournoueri* BAYAN – KECSKEMÉTI – KÖRMENDY et MÉSZÁROS, p. 50., Pl. IX. f. 1.

Dimension: H_L = 32; 43; 15; 23; 30; 22 mm; W = 37; 41; 12; 20; 19; 14 mm.
Material: *6.4. bed* = 5 specimens; *6.5. bed* = 8 specimens; *6.6. bed* = 3 specimens.

Naticacea superfamilia
Naticidae familia

Ampullina BOWDICH, 1822 genus

Ampullina perusta (DEFRANCE, 1823)
Pl. 9, figs 1–5.

1862. *Ampullaria perusta* BRONGNIART – ZITTEL, p. 380., Pl. 3. f. 1.
1909. *Natica vulcani* BRONGNIART – TAEGER, pp. 69; 74; 78; 80; 85; 263., Pl. 10. f. 1.
1953. *Ampullina perusta* DEFRANCE – SZŐTS, p. 176., Pl. 5. f. 1–10.
1966. *Ampullina perusta* DEFRANCE – STRAUSZ, p. 46., Pl. 12. f. 4-5.

1980. *Ampullina perusta* DEFRANCE – KECSKEMÉTI– KÖRMENDY et MÉSZÁROS, pp. 54–55., Pl. X. f. 1–3.

Dimension: H= 31; 17; 9; 21 mm; H_L = 24; 13; 6; 17 mm; W = 25; 13; 6; 15 mm.
Material: *8. bed* = 12 specimens.

Ampullina sp. indet. 1.

Dimension: H= 72 mm; H_L = 54 mm; W=71 mm.
Material: *8. bed* = 1 specimen.

Buccinacea superfamilia
Buccinidae familia

Cantharus BOLTEN in RÖDING, 1798 genus

Cantharus brongniartianus (d'ORBIGNY, 1850)
Pl. 9, fig. 6-7.

1850. *Fusus brongniartianus* d'ORBIGNY – d'ORBIGNY, p. 317., Pl. 24. f. 362.
1862. *Fusus palygonus* LAMARCK – ZITTEL, p. 370., Pl. I. f. 4a–b; 5a–b.
1953. *Cantharus brongniarti* d'ORBIGNY – SZÖTS, p. 62–63.
1966. *Cantharus (Pollia) brongniartianus* d'ORBIGNY – STRAUSZ, p. 54.
1972. *Cantharus brongniartianus* (d'ORBIGNY) – KECSKEMÉTI – KÖRMENDY, p.58., Pl. XX. f. 3–4.
1990. *Cantharus brongniartianus* (d'ORBIGNY) – KECSKEMÉTI – KÖRMENDY, p. 90., Pl. XXX. f. 3–4.

Dimension: H= 34 mm; H_L=22 mm.
Material: *8. bed* = 2 specimens.

Bivalvia LINNÉ, 1758 classis
Pteriomorphia BEURLEN, 1944 subclassis
Mytiloida FÉRUSSAC, 1822 ordo
Mytilacea RAFINESQUE, 1815 superfamilia
Mytilidae RAFINESQUE, 1815 familia
Mytilinae RAFINESQUE, 1815 subfamilia

Brachyodontes SWAINSON, 1840 genus

Brachyodontes corrugatus (BRONGNIART, 1823)
Pl. 10, fig. 1.

1823. *Mytilus corrugatus* BRONGNIART – BRONGNIART, p. 78., Pl. V. f. 6.
1972. *Brachyodontes corrugatus* (BRONGNIART) – KECSKEMÉTI – KÖRMENDY, p. 258., Pl. XXVIII. f. 36.
1984. *Brachyodontes corrugatus* (BRONGNIART) – KECSKEMÉTI – KÖRMENDY, p. 367.

1990. *Brachyodontes corrugatus* (BRONGNIART) – KECSKEMÉTI – KÖRMENDY, p. 74., Pl. I. f. 6.

Dimension: The shell was broken and I could not measure the dimension.
Material: *4. bed* = 1 specimen.

Pterioida NEWELL, 1965 ordo
Pteriina NEWELL, 1965 subordo
Anomiacea RAFINESQUE, 1815 superfamilia
Anomiidae RAFINESQUE, 1815 familia

Anomia LINNÉ, 1758 genus

Anomia gregaria BAYAN, 1870
Pl. 10, figs 2, 4.

1870. *Anomia gregaria* n. sp. – BAYAN, p. 65., Pl. III. f. 1–2.
1892. *Anomia gregaria* BAYAN – OPPENHEIM, p. 713–716., Pl. XXXI. f. 5–8.
1953. *Anomia gregaria* BAYAN – SZŐTS, p. 88., 211.
1972. *Anomia gregaria* BAYAN – KECSKEMÉTI-KÖRMENDY, p. 260., Pl. XXX. f. 3–5.
1990. *Anomia gregaria* BAYAN – KECSKEMÉTI –KÖRMENDY, pp. 75–76., Pl. VI. f. 1–5.

Dimension: The shell was broken and I could not measure the dimension
Material: *4. bed* = 2 specimens.

Anomia tenuistriata DESHAYES, 1824
Pl. 10, figs 3, 5.

1824. *Anomia tenuistriata* n. sp. – DESHAYES, p. 377.
1837. *Anomia tenuistriata* DESHAYES – DESHAYES, Pl. LXV. F. 7–11.
1861. *Anomia tenuistriata* DESHAYES – WOOD, p. 13., Pl. IX. f. 1a–e.
1864. *Anomia tenuistriata* DESHAYES – DESHAYES, p. 131.
1887. *Anomia tenuistriata* DESHAYES – COSSMANN, p. 196.
1904. *Anomia tenuistriata* DESHAYES – COSSMANN et PISSARRO, Pl. XLIV. f. 136 – 1.
1972. *Anomia tenuistriata* DESHAYES – KECSKEMÉTI– KÖRMENDY,p.261., Pl. XXX.f. 2.
1980. *Anomia tenuistriata* DESHAYES – KECSKEMÉTI – KÖRMENDY , p. 75.,Pl.VI. f. 6–8.

Dimension: L = 25; 23; 46; 16 mm; H = 24; 21; 44; 13 mm;
Material: *5.8. bed* = 9 specimens; *5.12. bed* = 4 specimens.

Ostreina FÉRUSSAC, 1822 subordo
Ostreacea RAFINESQUE, 1815 superfamilia
Ostreidae RAFINESQUE, 1815 familia
Ostreinae RAFINESQUE, 1815 subfamilia

Ostrea LINNÉ, 1758 genus

Ostrea (Cubitostrea) plicata SOLANDER, 1776
Pl. 11, fig. 1.

1887. *Ostrea plicata* SOLANDER – COSSMANN, p. 195.
1904. *Ostrea plicata* SOLANDER – COSSMANN et PISSARRO, Pl. XLIV. f. 135–31.
1964. *Ostrea (Cubitostrea) plicata plicata* SOLANDER – KARAGIULEVA, pp. 58–59., Pl. X. f. 3–7. Pl. XII. f. 1a–b.
1972. *Ostrea plicata* SOLANDER – KECSKEMÉTI– KÖRMENDY, p.261., Pl. XXXI. f.3–7.
1980. *Ostrea (Cubitostrea) plicata* SOLANDER – KECSKEMÉTI– KÖRMENDY, p. 33., Pl. IV. f.14.

Dimension: L=21mm; H=56 mm;.
Material: *8. bed* = 2 specimens.

Ostrea roncana PARTSCH in coll. (?)
Pl. 11, figs 3-7, Pl. 12, figs 1-3, Pl. 13, 1-2.

1862. *Ostrea longirostris* ZITTEL – ZITTEL, p. 393.
1870. *Ostrea roncana* PARTSCH – BAYAN, p. 484.
1900. *Ostrea roncana* PARTSCH – OPPENHEIM, p. 150.
1909. *Ostrea longirostris* ZITTEL – TAEGER, p. 59., 75.
1938. *Ostrea longirostris* ZITTEL – SZÖTS, p. 11.; 15.; 16.
1953. *Ostrea roncana* PARTSCH – SZÖTS, p. 211., Pl. 9. f. 1–4.
1972. *Ostrea roncana* PARTSCH – KECSKEMÉTI– KÖRMENDY, pp. 30–31., Pl. II. f. 5.

Dimension: L=60; 72; 62mm; H=112; 118; 109 mm;
Material: *8. bed* = in large number.

Ostrea supranummulitica ZITTEL, 1862
Pl. 11 fig. 2.

1862. *Ostrea supranummulitica* n. sp. – ZITTEL, p. 394., Pl. III. f. 7 a–c.
1972. *Ostrea supranummulitica* ZITTEL – KECSKEMÉTI– KÖRMENDY, p. 262., Pl. XXXII. f. 12.

Dimension: L=21; 32 mm; H=43; 35 mm;
Material: *8. bed* = 6 specimens.

Crassatellacea FÉRUSSAC, 1822 superfamilia
Crassatellidae FÉRUSSAC, 1822 familia
Crassatellinae FÉRUSSAC, 1822 subfamilia

Crassatella LAMARCK, 1799 genus
Crassatella sp. indet.
Pl. 13, fig. 3.

Dimension: L=115mm; H=84 mm.
Material: *6.3 bed* = 1 specimen.

Annelida LAMARCK, 1809 phylum
Polycheatea GRUBE, 1850 classis
Sedentaria LAMARCK, 1818 ordo
Serpulidae BURMEISTER, 1837 familia

Serpula LINNÉ, 1768 genus

Serpula sp. indet.
Pl. 10, fig. 3.

Ditrupa BERKELEY, 1835 genus

Ditrupa sp. indet.
Pl. 6, fig. 3.

Arthropoda phylum
Crustacea PENNANT, 1777 subphylum
Ostracoda LATREILLE, 1806 classis
Podocopida MÜLLER, 1894 ordo
Platicopina SARS, 1866 subordo
Cytherellidae SARS, 1866 familia

Cytherella JONES, 1849 genus

Cytherella (Cytherelloidea) gantensis MONOSTORI, 1977
Pl. 14, fig. 4.

1977. *Cytherella (Cytherelloidea) gantensis* n. sp. – MONOSTORI, pp.76–77., Pl.I.f. 1.
1985. *Cytherella (Cytherelloidea) gantensis* MONOSTORI – MONOSTORI, pp. 27–29., Pl. I. f. 1–3, 13.
1987. *Cytherella (Cytherelloidea) gantensis* MONOSTORI – MONOSTORI, pp.136–137., Pl. I. f. 1–3.

Dimension: L=0.65-0.71mm; H=0.39-0.41mm; L/H=1.66-1.73.
Material: *5.1. bed* = 3 specimens; *5.2. bed* = 4 specimens; *5.3. bed* = 38 specimens; *5.4. bed* = 10 specimens; *5.5. bed* = 22 specimens; *5.6. bed* = 8 specimens; *5.8. bed* = 29 specimens; *5.9. bed* = 40 specimens; *5.12. bed* = 40 specimens; *5.15. bed* = 6 specimens; *6.2. bed* = specimen; *6.3. bed* = 1 specimen; *6.4. bed* = specimen.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cytherella gamardensis DELTEL, 1961
Pl. 14, figs 1-2.

1961. *Cytherella gamardensis* n. sp. – DELTEL, p. 16., Pl. 1., f. 18–21.
1962. *Cytherella gamardensis* DELTEL – DELTEL, p. 135., Pl. 1., f. 8–11.

Dimension: L=0.55-0.61mm; H=0.30-0.33mm; L/H=1.83-1.84.
Material: *5.2. bed* = 7 specimens; *5.3. bed* = 18 specimens; *5.4. bed* = specimen; *5.5. bed* = 12 specimens; *5.6. bed* = specimen; *5.8. bed* = 15 specimens; *5.9. bed* = 19 specimens; *5.12. bed* = specimen; *5.15. bed* = 5 specimens; *5.16. bed* = 2 specimens; *6.3. bed* = specimen.
Stratigraphical range in Hungary: Unknown

Podocopina SARS, 1866 subordo
Bairdiacea SARS, 1888 superfamilia
Bairdiidae SARS, 1888 familia

Bairdia McCOY, 1844 genus

Bairdia (Bairdoppilata) aff. gliberti, KEIJ
Pl. 14, fig. 3.

Dimension: L=1.1-1.4mm; H=0.68-0.96mm; L/H=1.46-1.61.
Material: *5.15. bed* = 6 specimens; *5.16. bed* = 7 specimens; *6.2. bed* = 2 specimens; *6.3. bed* = 6 specimens; *6.4. bed* = 2 specimens; *6.5. bed* = 2 specimens; *6.6. bed* = 5 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cytheracea BAIRD, 1850 superfamilia
Cytheridae BAIRD, 1850 familia
Cytherinae BAIRD, 1850 subfamilia

Cytheromorpha HIRSCHMANN, 1909 genus

Cytheromorpha zinndorfi hungarica MONOSTORI, 1985
Pl. 14, fig. 5.

1985. *Cytheromorpha zinndorfi hungarica* n. sp. – MONOSTORI, pp. 37–40., Pl. III. f. 1–8.
1996. *Cytheromorpha zinndorfi hungarica* MONOSTORI – MONOSTORI, p. 28., Pl. I. f. 1–7.

Dimension: L=0.32-0.41mm; H=0.21-0.30mm; L/H=1.37-1.52.
Material: *5.5. bed* = 11 specimens; *5.7. bed* = specimen; *5.8. bed* = 33 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Schizocythere TRIEBEL, 1950 genus

Schizocythere depressa (MÉHES, 1936)
Pl. 14, fig. 6.

1936. *Eucytherura depressa* n. sp. – MÉHES, pp. 25–26., Pl. III. f. 5–8.

1977. *Schizocythere depressa* (MÉHES) – MONOSTORI, pp. 98–100., Pl. III. f. 1–4.
1985. *Schizocythere depressa* (MÉHES) – MONOSTORI, pp. 44–46., Pl. IV. f. 3–16.
1987. *Schizocythere depressa* (MÉHES) – MONOSTORI, p. 142., Pl. 3. f. 3–4.

Dimension: L=0.48-0.51mm; H=0.28-0.32mm; L/H=1.59-1.71.
Material: *5.2. bed* = 7 specimens; *5.5. bed* = 6 specimens; *5.7. bed* = 3 specimens; *5.8. bed* = 9 specimens; *5.9. bed* = 78 specimens; *5.12. bed* = 21 specimens; *5.15. bed* = 26 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cytherideidae SARS, 1925 familia
Schulerideinae MANDELSTAM, 1959 subfamilia

Schuleridea SWARTZ et SWAIN, 1946 genus

Schuleridea (Aequacyteridea) perforata (ROEMER, 1838)
Pl. 14, fig. 7.

1838. *Cytherina perforata* n. sp. – ROEMER, p. 516., Pl. VI. f. 11.
1996. *Schuleridea (Aequacyteridea) perforata* (ROEMER, 1838) – MONOSTORI, pp. 35–36., Pl. 7. f. 7–8, Pl. 8.f. 1–8, Pl. 9. f. 1.(cum syn)

Dimension: L=0.73-0.78mm; H=0.48-0.51mm; L/H=1.52-1.53.
Material: *5.2. bed* = 13 specimens; *5.7. bed* = specimen; *5.8. bed* = 11 specimens; *5.9. bed* = 87 specimens; *5.12. bed* = 54 specimens; *5.15. bed* = 30 specimens; *6.1. bed* = 10 specimens; *6.3. bed* = specimen; *6.4. bed* = 3 specimens; *6.5. bed* = 7 specimens; *6.6. bed* = 1 specimen; *6.7. bed* = 7 specimens; *6.8. bed* = 7 specimens.
Stratigraphical range in Hungary: Middle and Upper Eocene (Lutetian - Priabonian)

Schuleridea mirkmalovi SAKINA, 1971
Pl. 14, fig. 8.

1971. *Schuleridea mirkmalovi* n. sp. – SAKINA, pp. 174–177., Pl. I. f. 1–1a.
1996. *Schuleridea mirkmalovi* SAKINA – MONOSTORI, pp. 34–35., Pl. 7. f. 1–6.

Dimension: L=0.75-0.79mm; H=0.48-0.51mm; L/H=1.54-1.56.
Material: *5.5. bed* = 3 specimens; *5.8. bed* = 2 specimens; *5.9. bed* = 7 specimens; *5.12. bed* = 6 specimens; *5.15. bed* = specimen; *6.1. bed* = specimen.
Stratigraphical range in Hungary: Middle Eocene (Bartonian)

Krithidae MANDELSTAM, 1960 familia
Krithe BRADY, CROSSKEY et ROBERTSON, 1874 genus

Krithe bartonensis (JONES, 1857) s.l.
Pl. 15, fig. 1.

1857. *Cytherideis bartonensis* n. sp. – JONES, p. 50., Pl. V. f. 2a–b., 3a–b.

1894. *Krithe bartonensis* JONES – LIENENKLAUS, pp. 252–253., Pl. XVII. f. 9.
1996. *Krithe bartonensis* (JONES, 1857) – MONOSTORI, pp. 39–41., Pl. 11. f. 4–8., Pl. 12. f. 1–8. (cum syn)

Dimension: L=0.66-0.81mm; H=0.31-0.35mm; L/H=2.12-2.31.
Material: *5.6. bed* = 2 specimens; *5.8. bed* = 9 specimens; *5.12. bed* = 21 specimens; *5.15. bed* = 21 specimens; *6.1. bed* = 1 specimen; *6.5. bed* = 3 specimens; *6.7. bed* = specimen; *6.8. bed* = 2 specimens.
Stratigraphical range in Hungary: Middle Eocene (Bartonian)

Trachyleberididae SYLVESTER-BRADLEY, 1948 familia
Trachyleberidinae SYLVESTER-BRADLEY, 1948 subfamilia

Pterygocythere HILL, 1954 genus

Pterygocythere jonesi (MÉHES, 1936)
Pl. 15, fig. 2.

1936. *Cytheropteron jonesi* n. sp. – MÉHES, pp. 22–25., Pl. III. f. 1–4.
1996. *Pterygocythere jonesi* (MÉHES, 1936) – MONOSTORI, p. 52., Pl. 19. f. 5–8. (cum syn)

Dimension: L=0.7mm; H=0.5mm; L/H=1.27.
Material: *8. bed* = specimen
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cletocythereis SWAIN, 1963 genus

Cletocythereis? angusticostata (BOSQUET, 1852)
Pl. 15, fig. 3.

1852. *Cythere angusticostata* n. sp. – BOSQUET, pp. 91–92.,Pl. VII.f.118–119.
1998. *Cletocythereis? angusticostata* (BOSQUET, 1852) – MONOSTORI, pp.50–51., Pl. 3. f. 1–10.(cum syn)

Dimension: L= 0.6-0.8 mm; H=0.3-0.5 mm; L/H=2.0-0.16.
Material: *5.2. bed* = 7 specimens; *5.3. bed* = 2 specimens; *5.4. bed* = specimen; *5.8. bed* = specimen; *5.12. bed* = 10 specimens; *5.15. bed* = 36 specimens; *6.1. bed* = 25 specimens; *6.2. bed* = 2 specimens; *6.3. bed* = 8 specimens; *6.5. bed* = 2 specimens; *6.6. bed* = 2 specimens; *6.7. bed* = 4 specimens; *6.8. bed* = 2 specimens.
Stratigraphical range in Hungary: Middle and Upper Eocene (Upper Lutetian - Lower Priabonian)

Echinocythereis PURI, 1954 genus
Echinocythereis dadayana (MÉHES, 1941)
Pl. 15, fig. 4.

1936. *Cythereis dadayi* n. sp. – MÉHES, pp. 40–42., Pl. IV. f. 12–13.

1941. *Cythereis dadayana* nom. nov. – MÉHES, p. 43.
1996. *Echinocythereis dadayana* (MÉHES, 1941) – MONOSTORI, pp. 53–54., Pl. 20. f. 1–8. Pl. 21. f.1–7.(cum syn)

Dimension: L=0.68-0.79mm; H=0.39-0.42mm; L/H=1.74-1.88.
Material: *5.2. bed* = 9 specimens; *5.3. bed* = 8 specimens; *5.5. bed* = 4 specimens; *5.8. bed* = 16 specimens; *5.9. bed* = 15 specimens; *5.12. bed* = 44 specimens; *5.15. bed* = 32 specimens; *5.16. bed* = 9 specimens; *6.1. bed* = 10 specimens; *6.2. bed* = 4 specimens; *6.5. bed* = 7 specimens; *6.7. bed* = 7 specimens; *6.8. bed* = 5 specimens.
Stratigraphical range in Hungary: Middle and Upper Eocene (?Lutetian - Priabonian)

Asperrissimocythere MONOSTORI, 1998 genus

Asperrissimocythere perlucida (MÉHES, 1936)
Pl. 15, fig. 5.

1936. *Cythereis perlucida* n. sp. – MÉHES, pp. 43–45., Pl. IV. f. 19–22.
1985. *Hermanites perlucida* (MÉHES, 1936) – MONOSTORI, pp. 88–90., Pl. XI. f. 8–20.
1998. *Asperrissimocythere perlucida* (MÉHES, 1936) – MONOSTORI, p. 50., Pl. 1. f. 7–10., Pl.2. f.110.

Dimension: L=0.48-0.53mm; H=0.25-0.32mm; L/H=1.65-1.92.
Material: *5.2. bed* = 3 specimens; *5.3. bed* = 1 specimen; *5.5. bed* = 2 specimens; *5.7. bed* = 1 specimen; *5.8. bed* = 3 specimens; *5.9. bed* = 15 specimens; *5.12. bed* = 2 specimens; *6.8. bed* = 1 specimen.
Stratigraphical range in Hungary: Middle and Upper Eocene (Lutetian - Lower Bartonian)

Hemicytheridae PURI, 1953 familia
Hemicytherinae PURI, 1953 subfamilia

Pokornyella OERTLI, 1956 genus

Pokornyella inaequapunctata DUCASSE, 1963
Pl. 15, fig. 6.

1963. *Pokornyella inaequapunctata* n. sp. – DUCASSE, p. 229., Pl. 1. f. 7–8.
1998. *Pokornyella inaequapunctata* DUCASSE – MONOSTORI, pp.49–101., Pl. 7 f. 3–10. Pl. 8. f. 1–4. (cum syn.)

Dimension: L=0.52-0.61mm; H=0.28-0.32mm; L/H=1.85-1.9.
Material: *5.1. bed* = 1 specimen; *5.2. bed* = 11 specimens; *5.5. bed* = 4 specimens; *5.8. bed* = 3 specimens; *5.9. bed* = 2 specimens; *5.15. bed* = 14 specimens; *6.5. bed* = 15 specimens; *6.7. bed* = 8 specimens; *6.8. bed* = 9 specimens;
Stratigraphical range in Hungary: Middle and Upper Eocene (Upper Lutetian - Lower Bartonian)

Oriononinae PURI, 1973 subfamilia

Cytherettidae TRIEBEL, 1972 genus
Cytheretta G. W. MÜLLER, 1894 genus

Cytheretta aff. *haimeana* (BOSQUET, 1852)
Pl. 15, fig. 7.

1987. *Cytheretta* cf. *bambruggensis* KEIJ, 1955 – MONOSTORI, pp. 156–157., Pl. 7. f. 5–6.
1998. *Cytheretta* aff. *haimeana* (BOSQUET, 1852) – MONOSTORI, pp. 60–61.,Pl. 14. f. 9.

Dimension: L=0.84-1.01mm; H=0.48-0.52mm; L/H=1.75-1.94.
Material: *5.12. bed* = 3 specimens; *5.15. bed* = 6 specimens.
Stratigraphical range in Hungary: Middle Eocene (Upper Lutetian - Bartonian)

Xestoleberididae SARS, 1928 familia

Xestolebris SARS, 1866 genus

Xestolebris gantensis MONOSTORI, 1977
Pl. 15, fig. 8.

1977. *Xestolebris gantensis* n. sp. – MONOSTORI, pp. 113–115., Pl. IV. f. 14–17.
1985. *Xestolebris gantensis* MONOSTORI – MONOSTORI, pp. 121–124., Pl. XVI. f. 1–3.
1987. *Xestolebris gantensis* MONOSTORI – MONOSTORI, pp. 158–159., Pl. 7. f. 4, 8–11.

Dimension: L=0.4-0.6 mm; H=0.3-0.4 mm; L/H=1.33-1.5.
Material: *6.2. bed* = 4 specimens; *6.3. bed* = 7 specimens; *6.4. bed* = 29 specimens; *6.5. bed* = 7 specimens; *6.6. bed* = 32 specimens; *6.7. bed* = 34 specimens; *6.8. bed* = 16 specimens .
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Cypridacea BAIRD, 1845 superfamilia
Cyprididae BAIRD, 1845 familia

Novocypris DUCASSE, 1967 genus

Novocypris gantensis MONOSTORI, 1977
Pl. 15, fig. 9.

1977. *Novocypris? gantensis* n. sp. – MONOSTORI , pp. 80–81., Pl. I. f. 5–9.
1985. *Novocypris? gantensis* MONOSTORI – MONOSTORI, pp. 130–131., Pl. XVII. f. 7–21.

Dimension: L=0.71-0.76mm; H=0.47-0.53mm; L/H=1.43-1.51.

Material: *5.1. bed* = 9 specimens; *5.2. bed* = 40 specimens; *5.3. bed* = 1 specimen; *5.4. bed* = 7 specimens; *5.5. bed* = 28 specimens; *5.6. bed* = 10 specimens; *5.8. bed* = 91 specimens; *5.9. bed* = 11 specimens; *5.15. bed* = 62 specimens; *5.16. bed* = 3 specimens; *6.1. bed* = 6 specimens; *6.5. bed* = 3 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

Paracypridinae SARS, 1923 subfamilia

Paracypris SARS, 1866 genus

Paracypris contracta (JONES, 1857)
Pl. 15, fig. 10.

1857. *Bairdia contracta* n. sp. – JONES, pp. 53–54., Pl. V. f. 1a–c.
1987. *Paracypris contracta* (JONES, 1857) – MONOSTORI, p. 161., Pl. 7. f. 18–19. (cum syn.)

Dimension: L=0.73-0.79mm; H=0.44-0.51mm; L/H=1.55-1.66.
Material: *5.1. bed* = 1 specimen; *5.2. bed* = 8 specimens; *5.4. bed* = 1 specimen; *5.5. bed* = 11 specimens; *5.7. bed* = 1 specimen; *5.8. bed* = 24 specimens; *5.12. bed* = 13 specimens; *5.15. bed* = 8 specimens; *5.16. bed* = 1 specimen; *6.2. bed* = 1 specimen; *6.6. bed* = 5 specimens.
Stratigraphical range in Hungary: Middle Eocene (Lutetian - Bartonian)

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Plate 1

Fig. 1. *Clavulina parisiensis* d'ORBIGNY, 1826 73×.
Fig. 2. *Tritaxia szabói* (HANTKEN, 1868) 195×.
Fig. 3. *Quinqueloculina carinata* d'ORBIGNY, 1826 108×.
Fig. 4. *Quinqueloculina* aff. *carinata* d'ORBIGNY, 143×.
Fig. 5. *Quinqueloculina bicarinata* (d'ORBIGNY, 1878) 95.5×.
Fig. 6. *Quinqueloculina* cf. *contorta* (d'ORBIGNY) 106×.
Fig. 7. *Quinqueloculina ungeriana* d'ORBIGNY, 1846. 76×
Fig. 8. *Quinqueloculina* sp. indet. 144×

Plate 2

Figs. 1-2. *Pyrgo simplex* (d'ORBIGNY, 1846) 101×
Fig. 3. *Triloculina gibba* d'ORBIGNY, 1825. 151×
Fig. 4. *Triloculina porvaensis* HANTKEN, 1875. 72×
Fig. 5. *Triloculina trigonula* LAMARCK, 1804. 153×
Fig. 6. *Triloculina* sp. indet. 112×
Fig. 7. *Spirolina* sp. d'ORBIGNY, 1846 .151×

Plate 3

Figs. 1-2. *Nodosaria* sp. indet. 144× (1.), 173× (2.)
Fig. 3. *Globulina gibba* d'ORBIGNY, 1826. 116×.
Fig. 4. *Guttulina irregularis* (d'ORBIGNY, 1846). 133×
Fig. 5. *Pyrulina* sp. indet. 161×
Fig. 6. *Bulimina parisiensis* (CUSHMAN et TODD, 1945). 179×
Fig. 7. *Discorbis parisiensis* (d'ORBIGNY, 1865). 94×
Fig. 8. *Discorinopsis* sp. indet. 108×
Fig. 9. *Asterigerina* sp. indet. 118×

Plate 4

Fig. 1. *Rotalia trochidiformis* LAMARCK, 1804. 127×
Figs. 2-3. *Pararotalia curryi* (CUSHMAN, 1928) 125× (1.), 112× (2.)
Fig. 4. *Eponides polyganus* LE CALVEZ, 1949. 98.5×
Figs. 5-6. *Planulina* sp. indet. 81× (5.), 102× (6.)
Figs. 7-8. *Cibicides pygmeus* (HANTKEN, 1875) 236× (1.), 246× (2.)

Plate 5

Figs. 1-2. *Sphaerogypsina globula* (REUSS, 1848). 160× (1.), 162× (2.)
Fig. 3. *Nonion scaphum* (FICHTEL et MOLL, 1978). 161×
Fig. 4. *Nonion affinae* (REUSS, 1851). 254×
Fig. 5. *Nonion boueanum* (d'ORBIGNY, 1846). 145×
Figs. 6., 8. *Nonion* sp. indet. 70.5× (1.), 112× (2.)
Fig. 7. *Nonionella wemmelensis* KAASSCHIETER, 1961. 196×

Plate 6

Fig. 1. *Orbitolites* sp. indet. 42×
Fig. 2. *Discorinopsis* sp. indet. 42×
Fig. 3. *Ditrupa* sp. indet. 42×
Fig. 4. *Acervulina* sp. indet. 67×

Plate 7

Fig. 1. *Circophyllia* sp. indet. 2.5×
Fig. 2. *Rhizangia* sp. indet. 2.8×
Fig. 3. *Velates schmidelianus* (CHEMNITZ, 1786). 1.2×
Fig. 4. *Turritella* sp. indet. 1.2×
Fig. 5. *Cerithium corvinum subcorvinum* (OPPENHEIM, 1894). 1×
Figs. 6-8. *Diastoma roncanum* (BRONGNIART, 1823). 1.5×

Plate 8

Figs. 1-5. *Tympanotonus calcaratus* (BRONGNIART, 1823). 3×
Figs. 6-7. *Tympanotonus hungaricus* (ZITTEL, 1862). 2.5×
Figs. 8-10. *Strombus* cf. *tournoueri* BAYAN, 1870. 1.8×

Plate 9

Figs. 1-5. *Ampullina perusta* (DEFRANCE, 1823). 1.3×
Figs. 6-7. *Cantharus brongniartianus* (d'ORBIGNY, 1850). 2×

Plate 10

Fig. 1. *Brachyodontes corrugatus* (BRONGNIART, 1823). 1×
Figs. 2. 4. *Anomia gregaria* BAYAN, 1870. 1.3×
Figs. 3. 5. *Anomia tenuistriata* DESHAYES, 1824. 1.8×

Plate 11

Fig. 1. *Ostrea (Cubitostrea) plicata* SOLANDER, 1776. 2×
Fig. 2. *Ostrea supranummulitica* ZITTEL, 1862. 1×
Figs. 3-7. *Ostrea roncana* PARTSCH in coll. (?). 1.5×

Plate 12

Figs. 1-3. *Ostrea roncana* PARTSCH in coll. (?). 1×

Plate 13

Figs. 1-2. *Ostrea roncana* PARTSCH in coll. (?). 1×
Fig. 3. *Crassatella* sp. indet. 1×

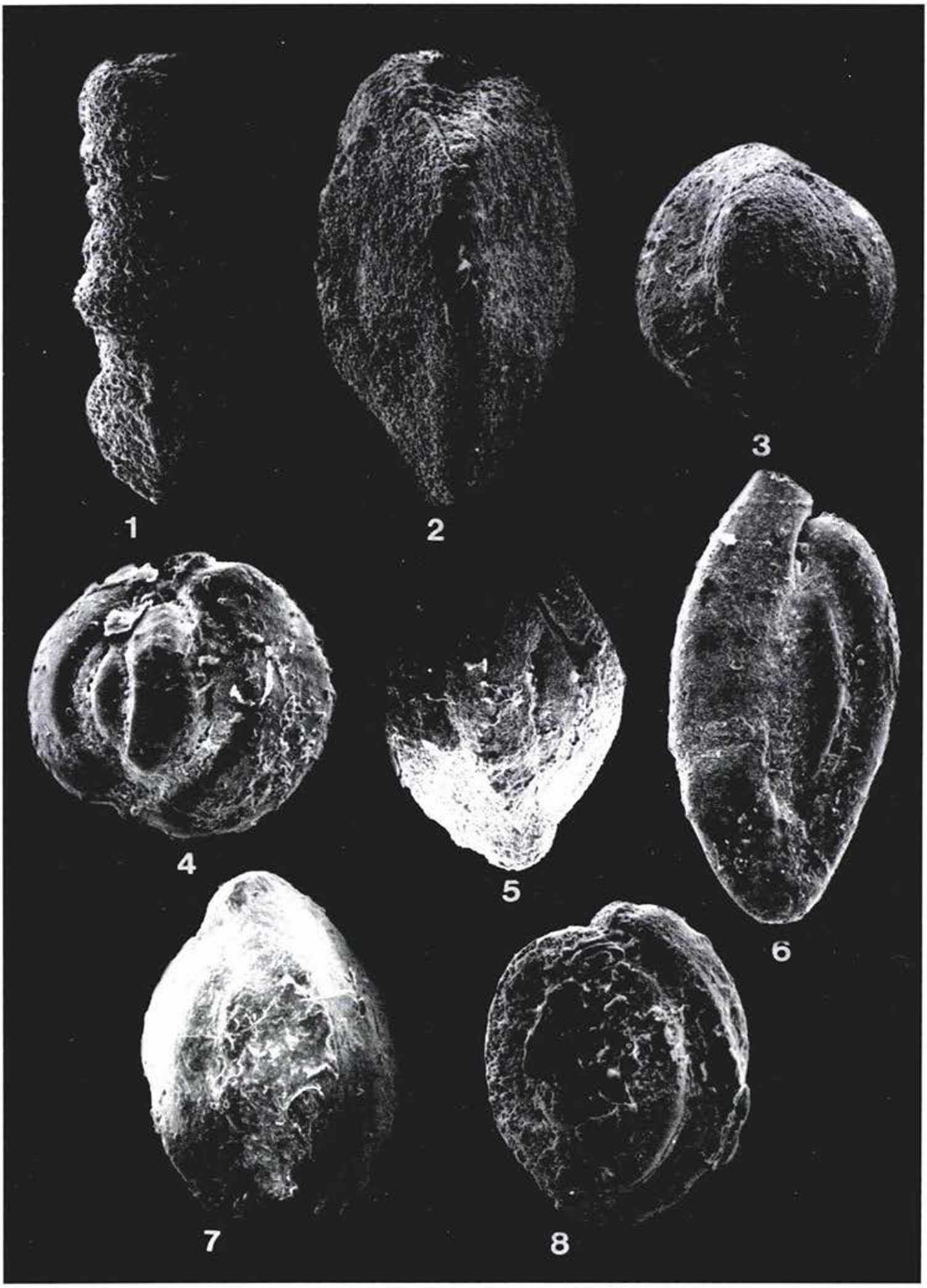
Plate 14

Figs. 1-2. *Cytherella gamardensis* DELTEL, 1961. 190×(1.) 167×(2.)
Fig. 3. *Cytherella (Cytherelloidea) gantensis* MONOSTORI, 1977. 127×
Fig. 4. *Bairdia (Bairdoppilata)* aff. *gliberti*, KEIJ. 88.5×
Fig. 5. *Cytheromorpha zinndorfi hungarica* MONOSTORI, 1985. 322×
Fig. 6. *Schizocythere depressa* (MÉHES, 1936). 202×
Fig. 7. *Schuleridea (Aequacyteridea) perforata* (ROEMER, 1838). 125×
Fig. 8. *Schuleridea mirkmalovi* SAKINA, 1971. 134×

Plate 15

Fig. 1. *Krithe bartonensis* (JONES, 1857). 145×
Fig. 2. *Pterygocythere jonesi* (MÉHES, 1936). 150×
Fig. 3. *Cletocythereis? angusticostata* (BOSQUET, 1852). 131×
Fig. 4. *Echinocythereis dadayana* (MÉHES, 1941). 107×
Fig. 5. *Asperrissimocythere perlucida* (MÉHES, 1936). 204×
Fig. 6. *Pokornyella inaequapunctata* DUCASSE, 1963. 180×
Fig. 7. *Cytheretta* aff. *haimeana* (BOSQUET, 1852). 122×
Fig. 8. *Xestolebris gantensis* MONOSTORI, 1977. 182×
Fig. 9. *Novocypris gantensis* MONOSTORI, 1977. 138×
Fig. 10. *Paracypris contracta* (JONES, 1857). 115×

Plate 1



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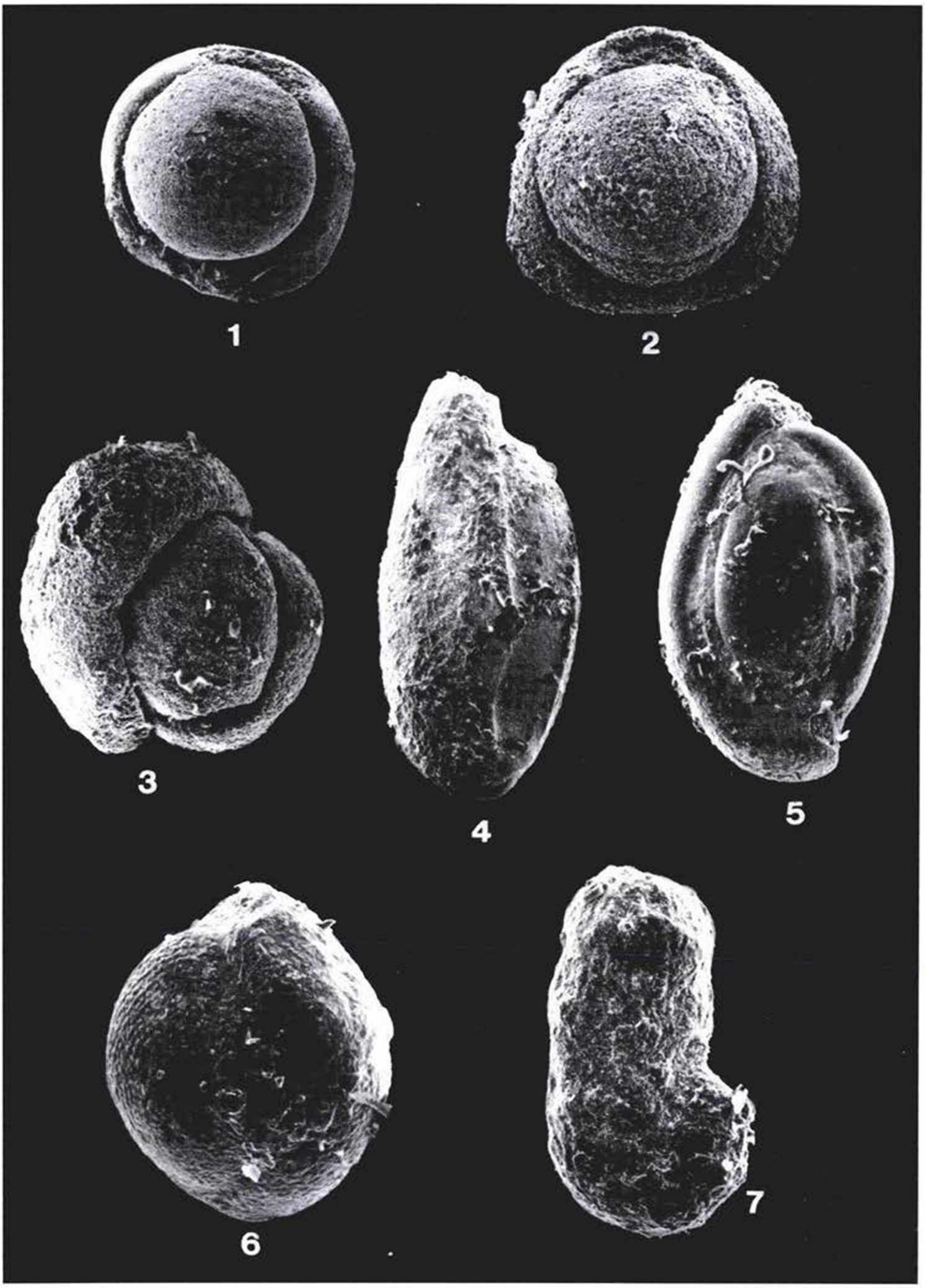

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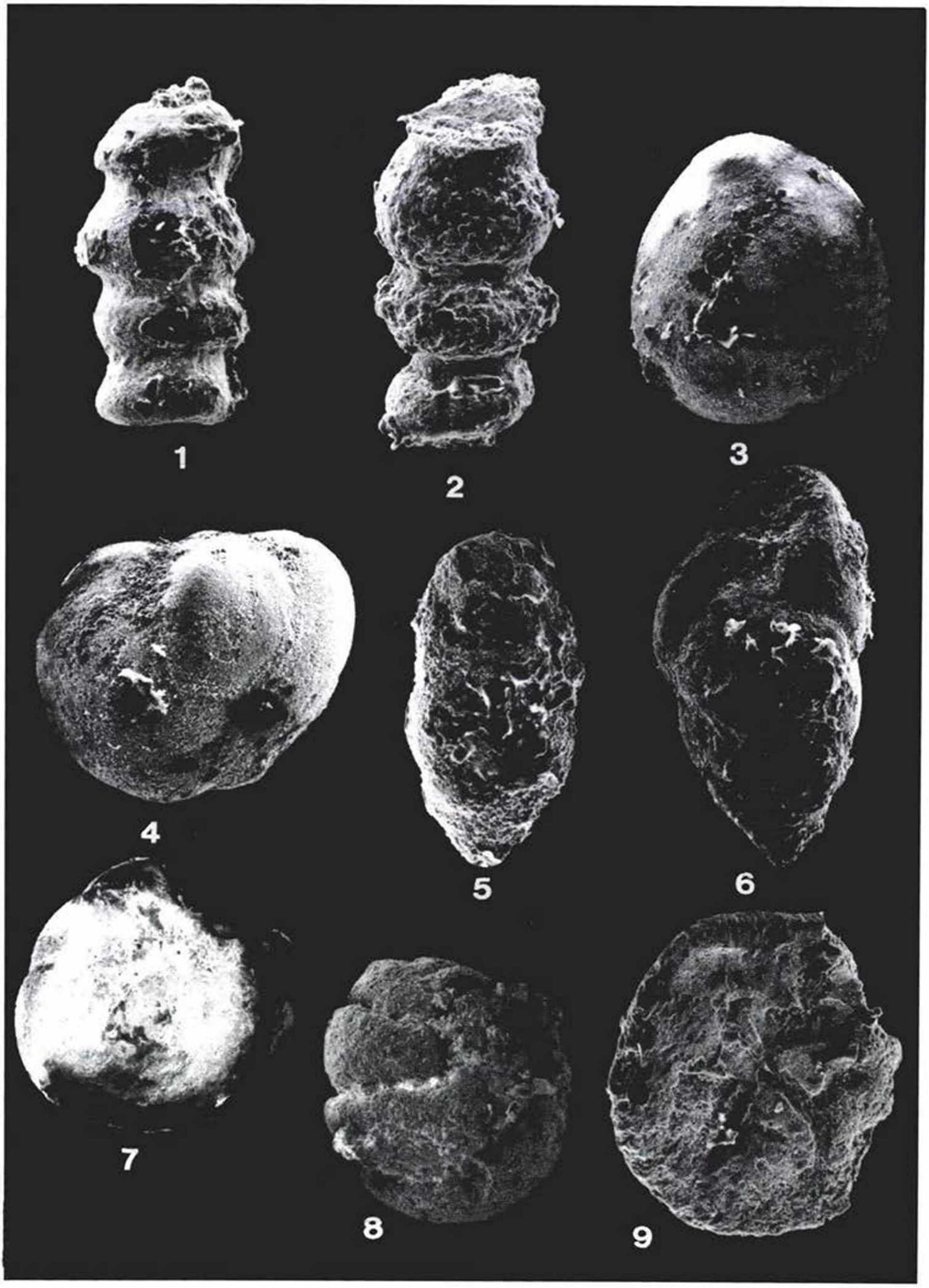

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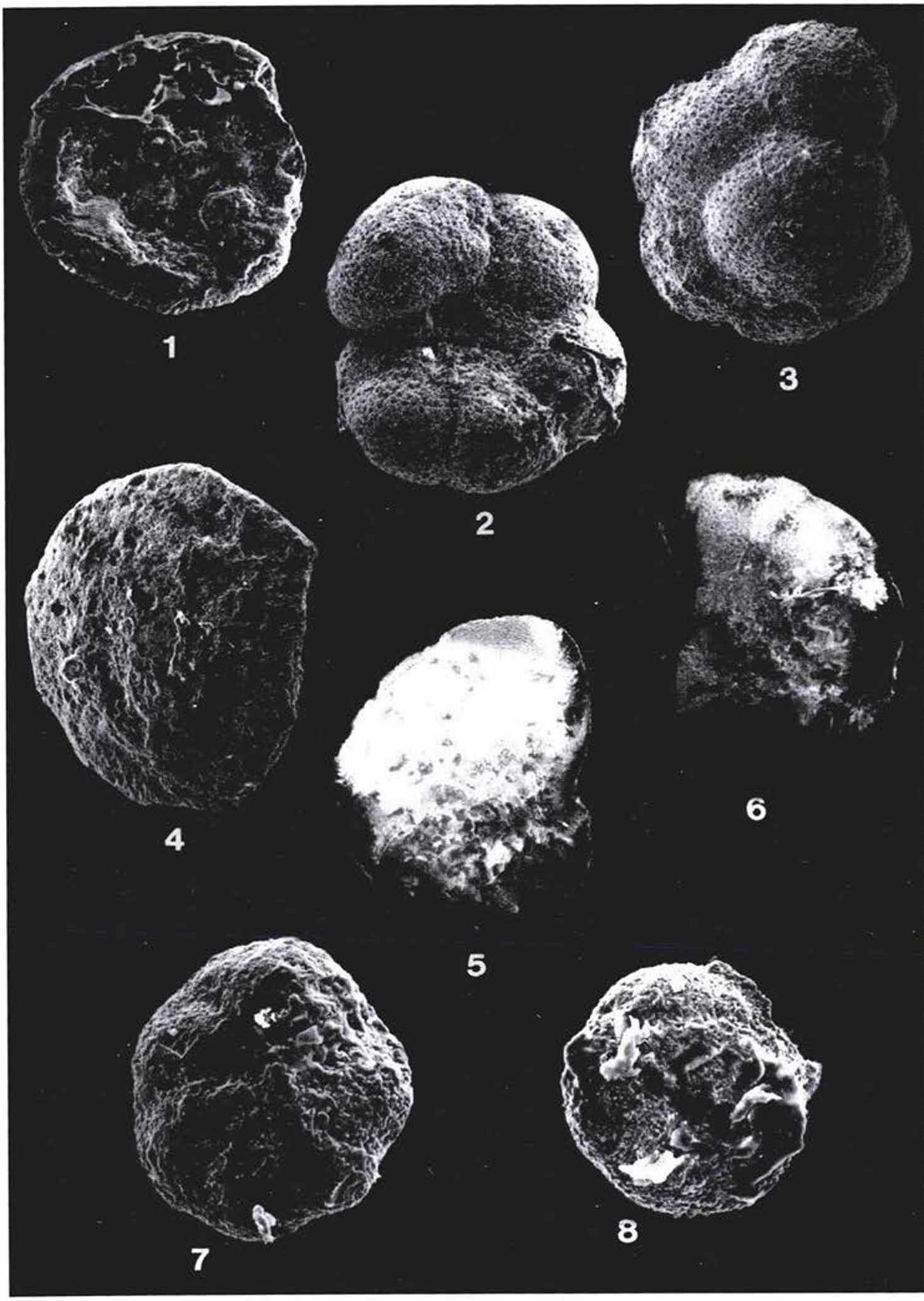

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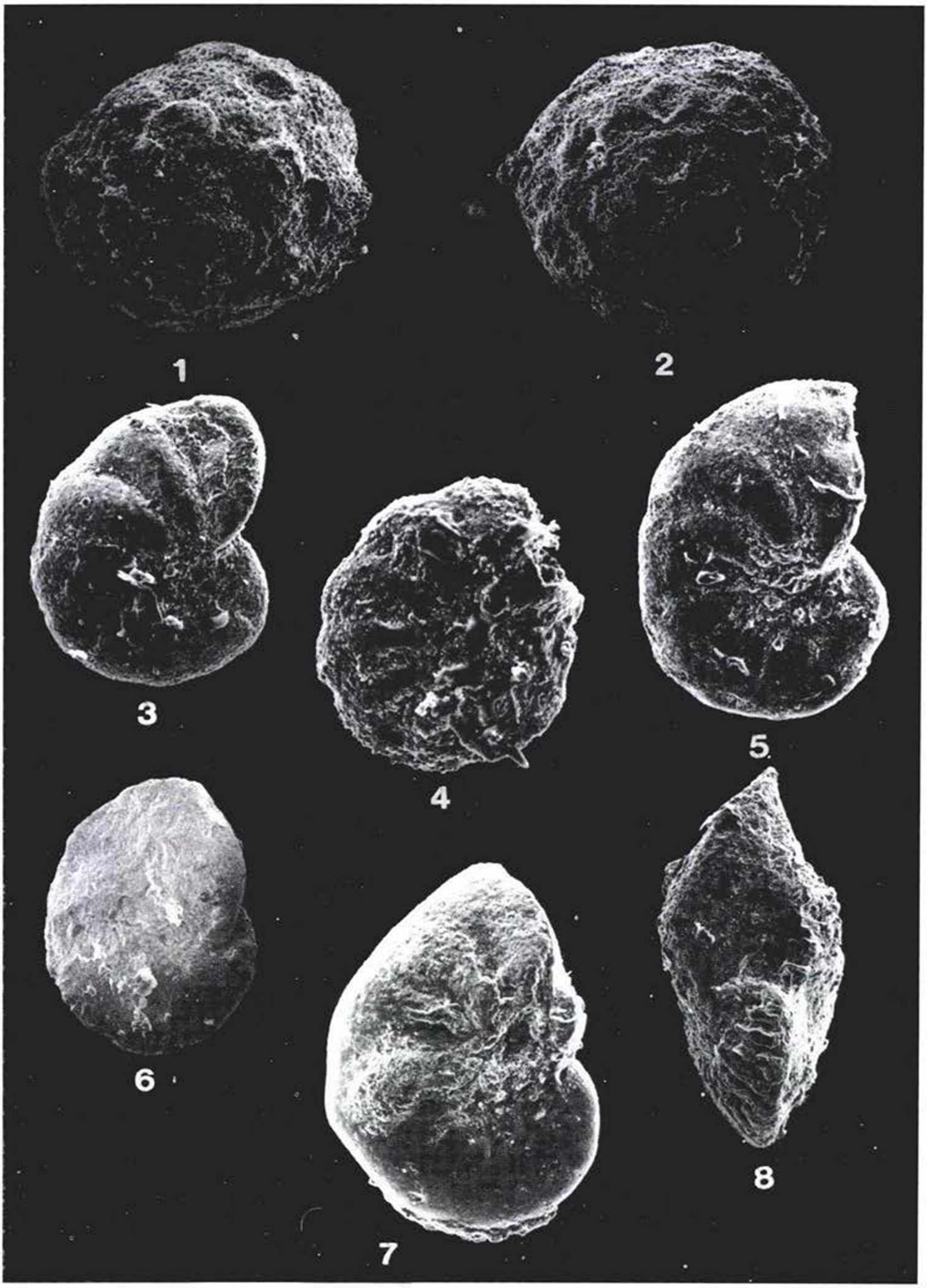

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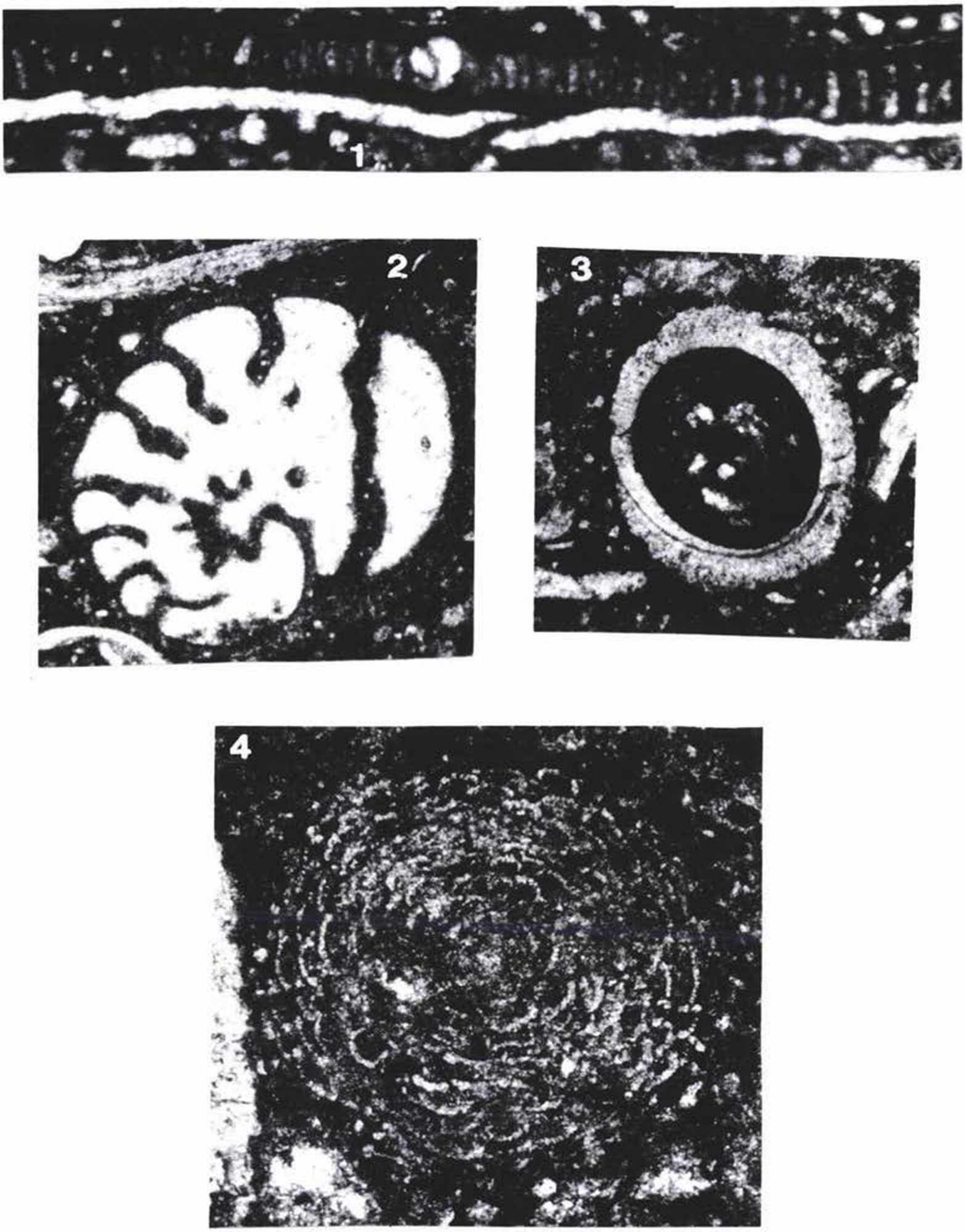

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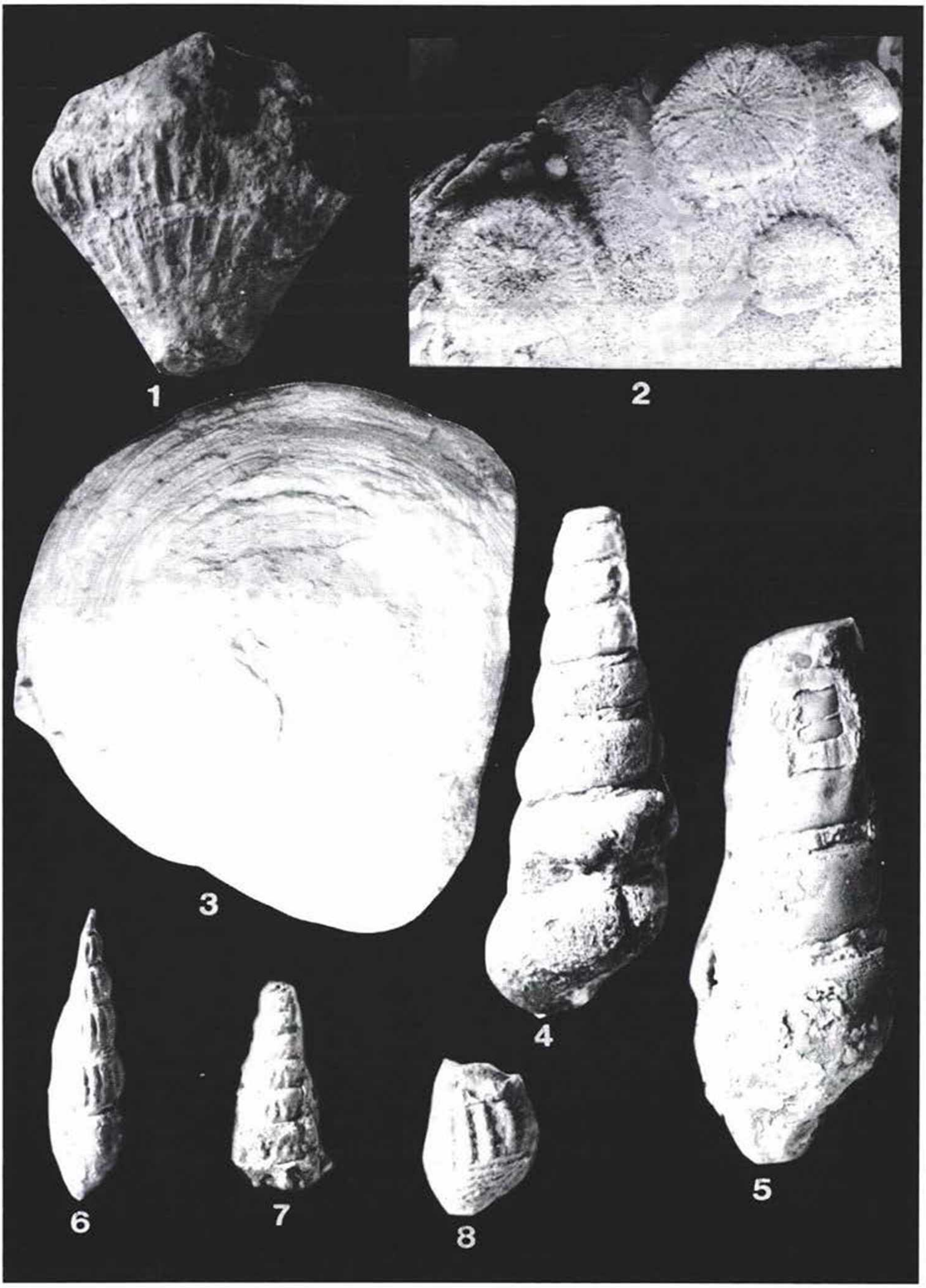

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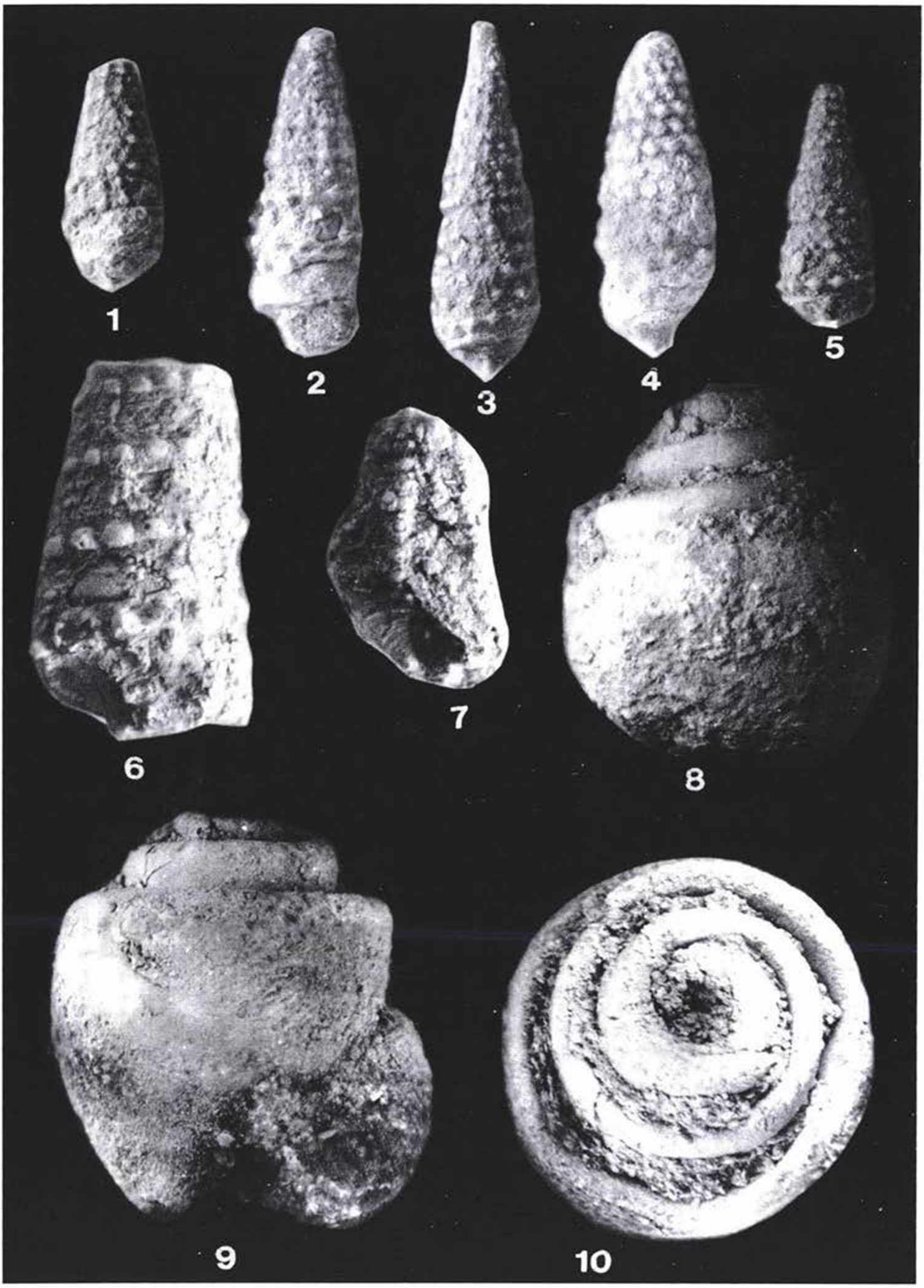

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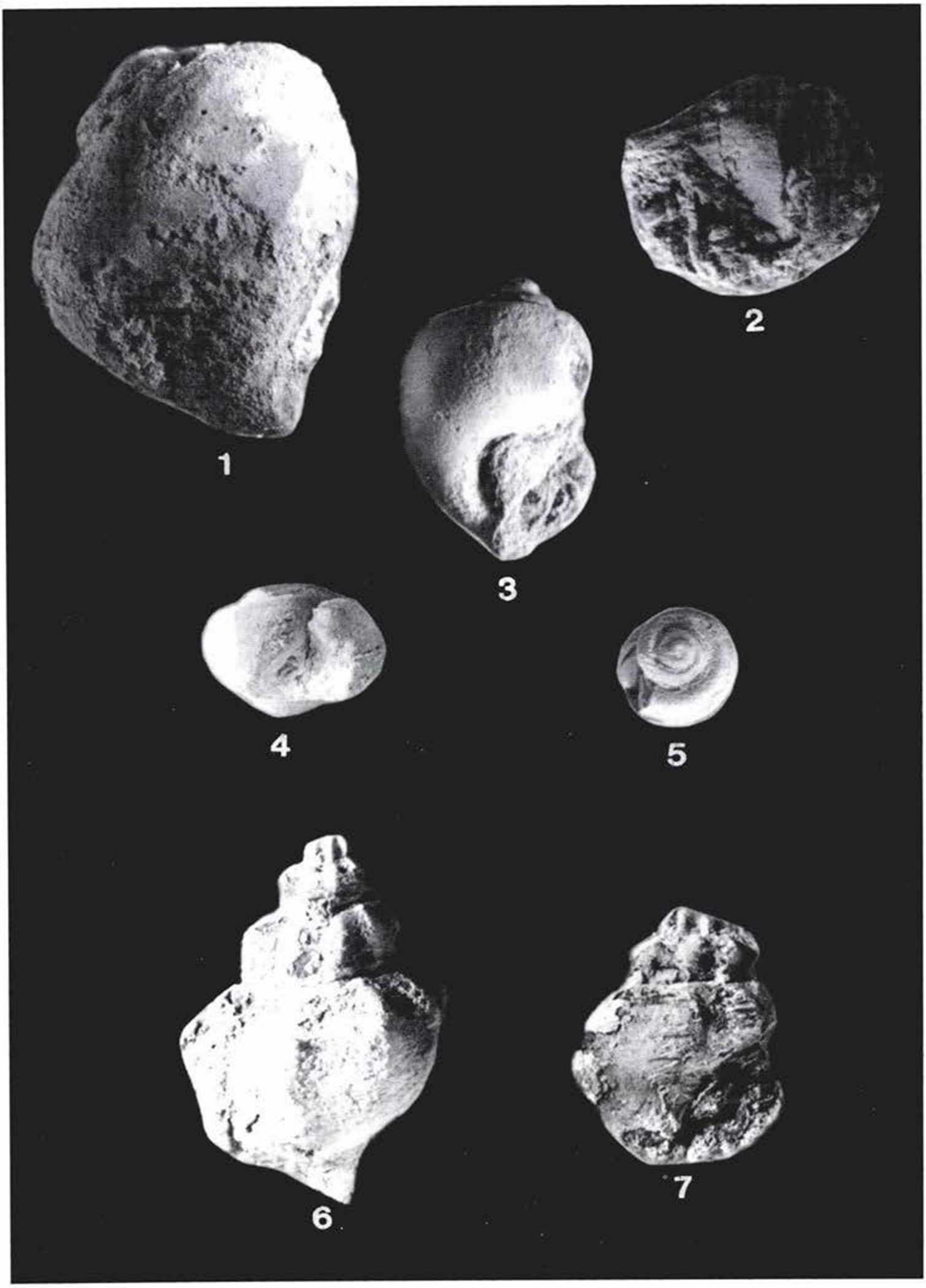

Plate 10

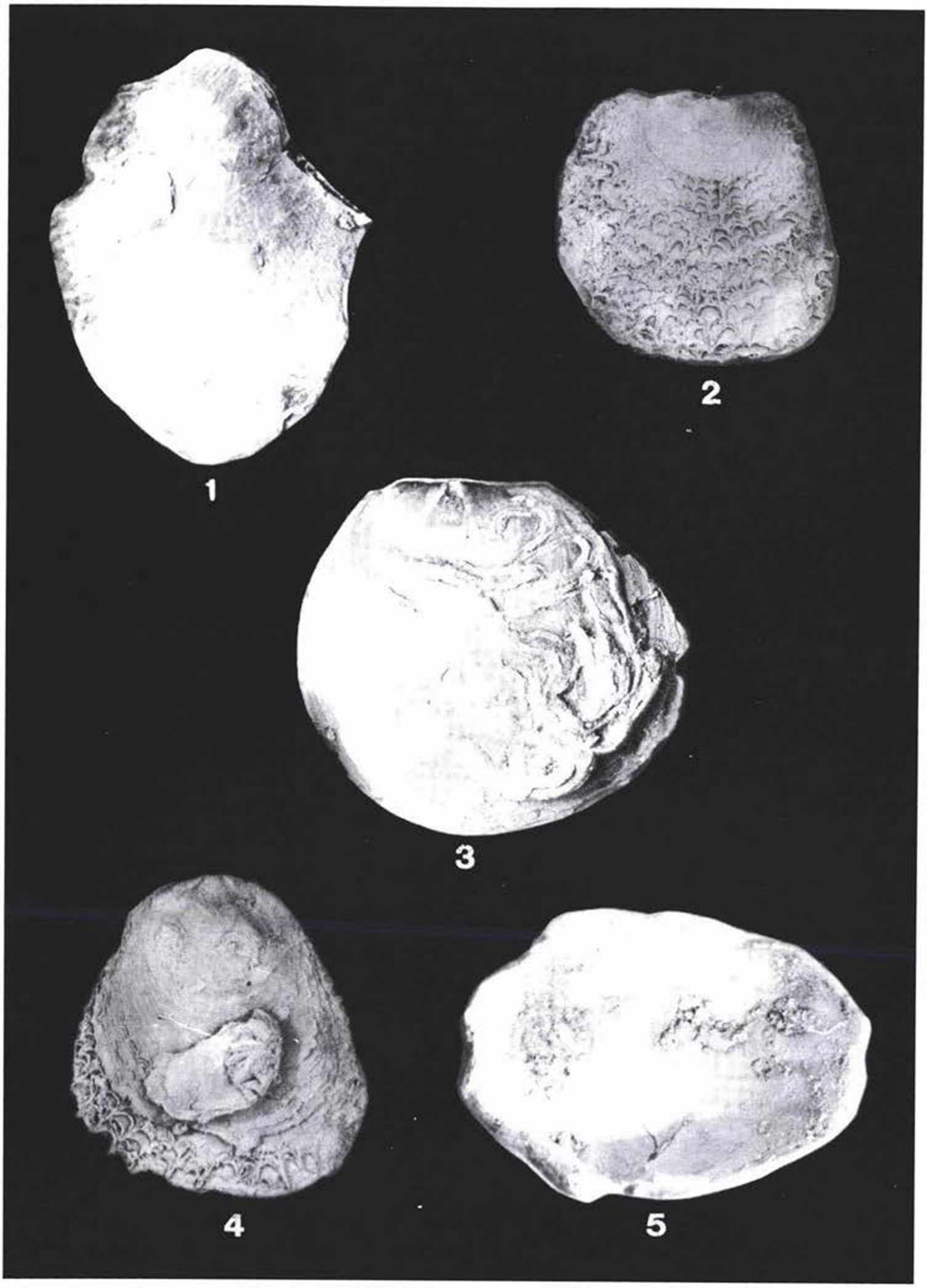

Plate 11

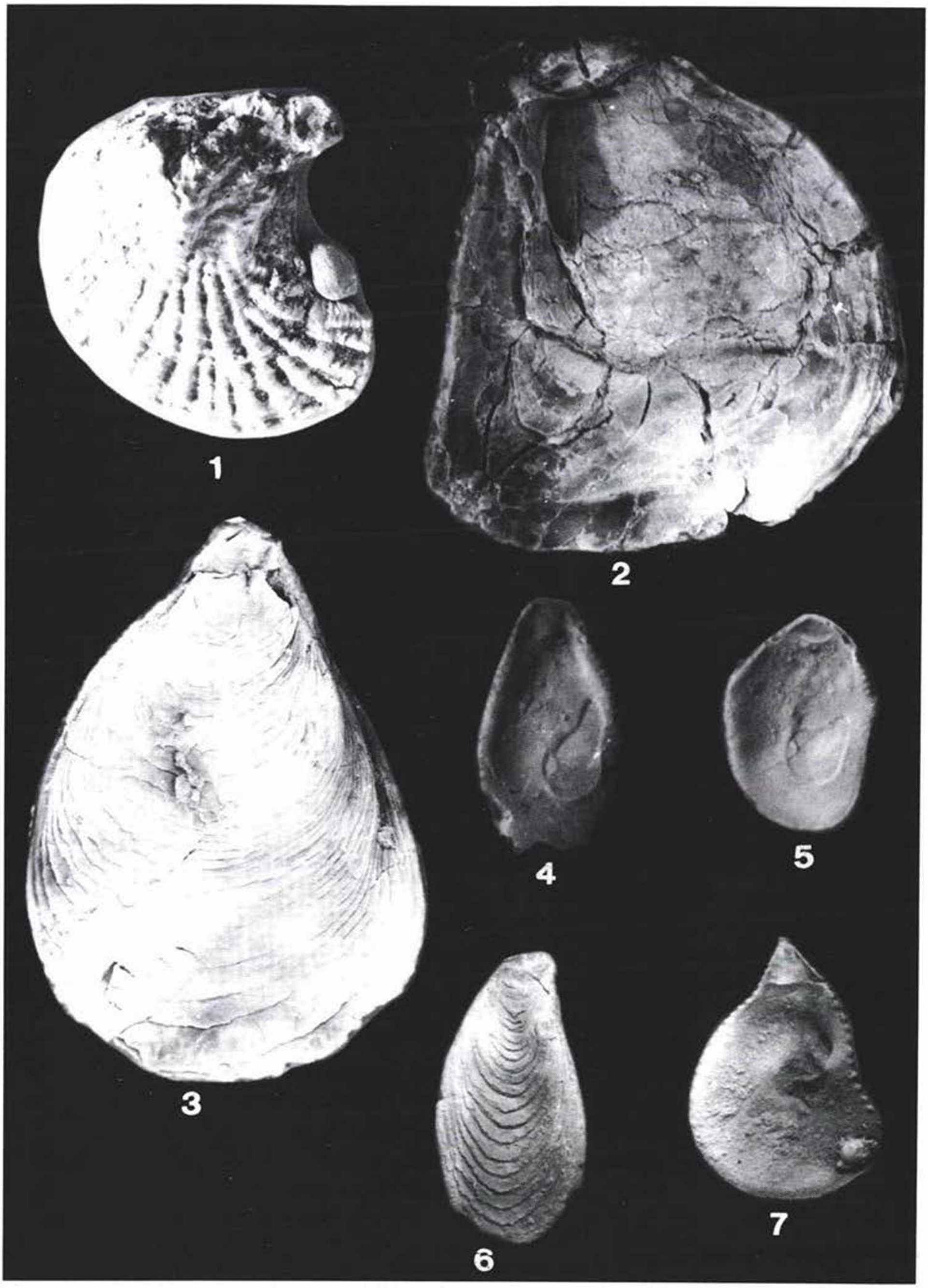

Plate 12

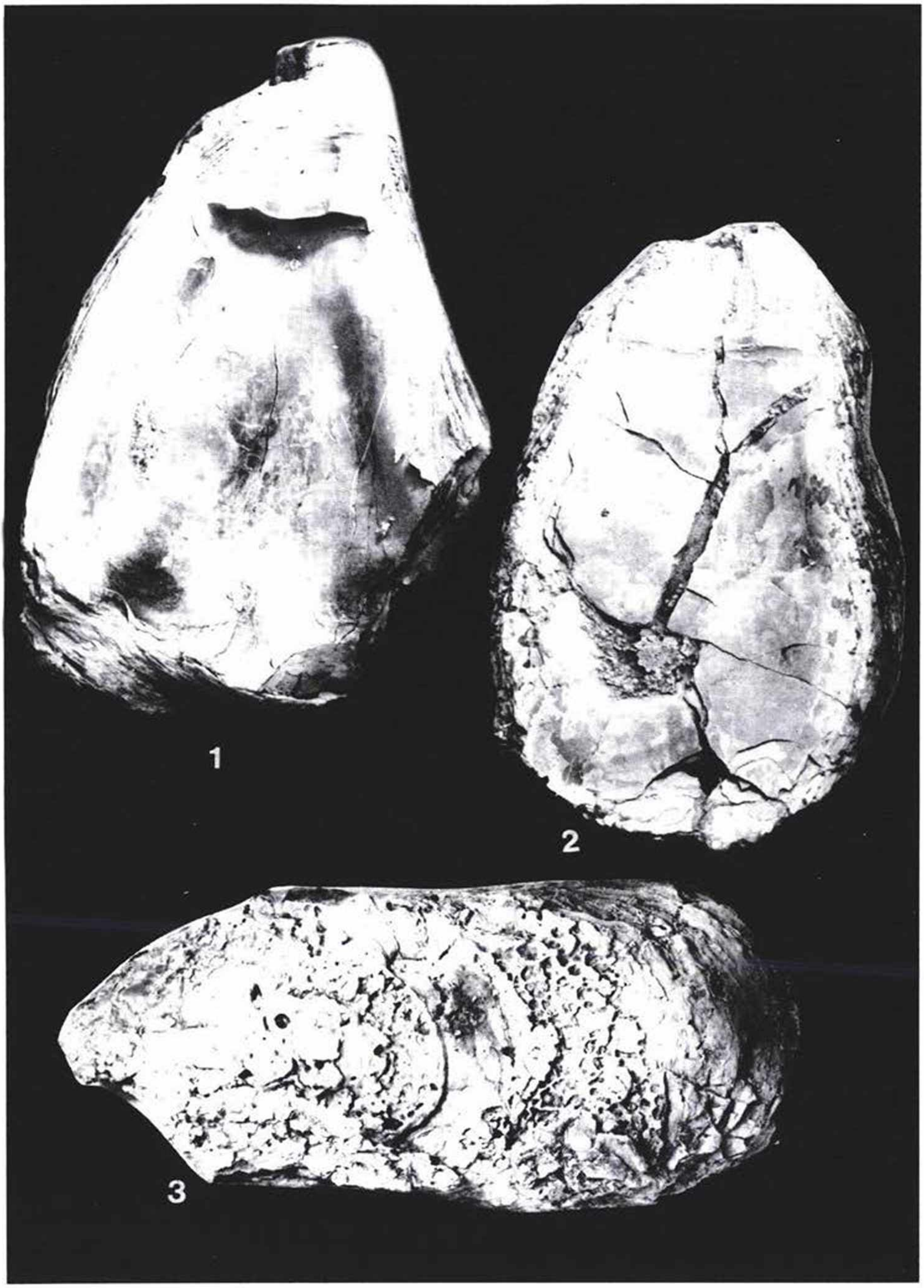

Plate 13

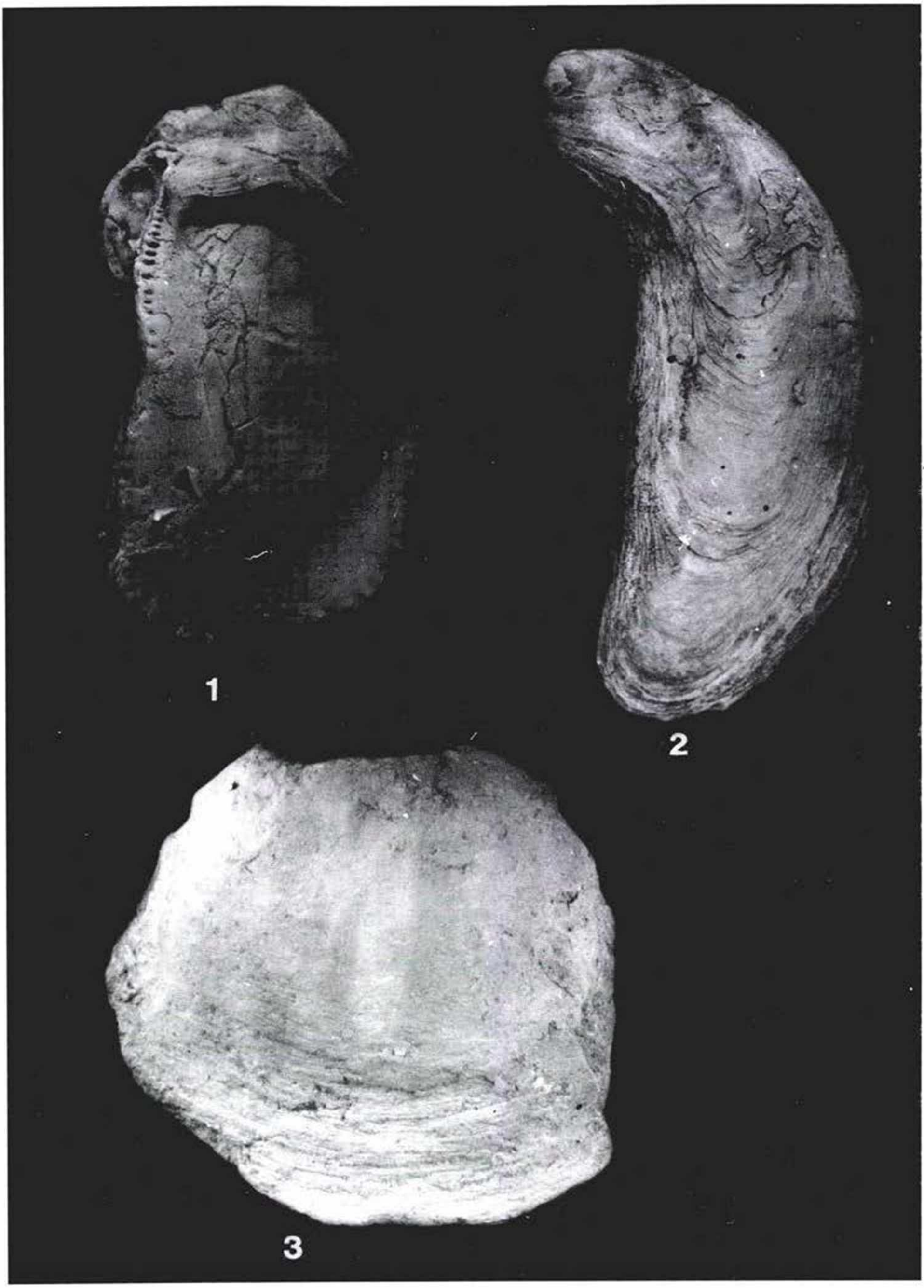

Plate 14

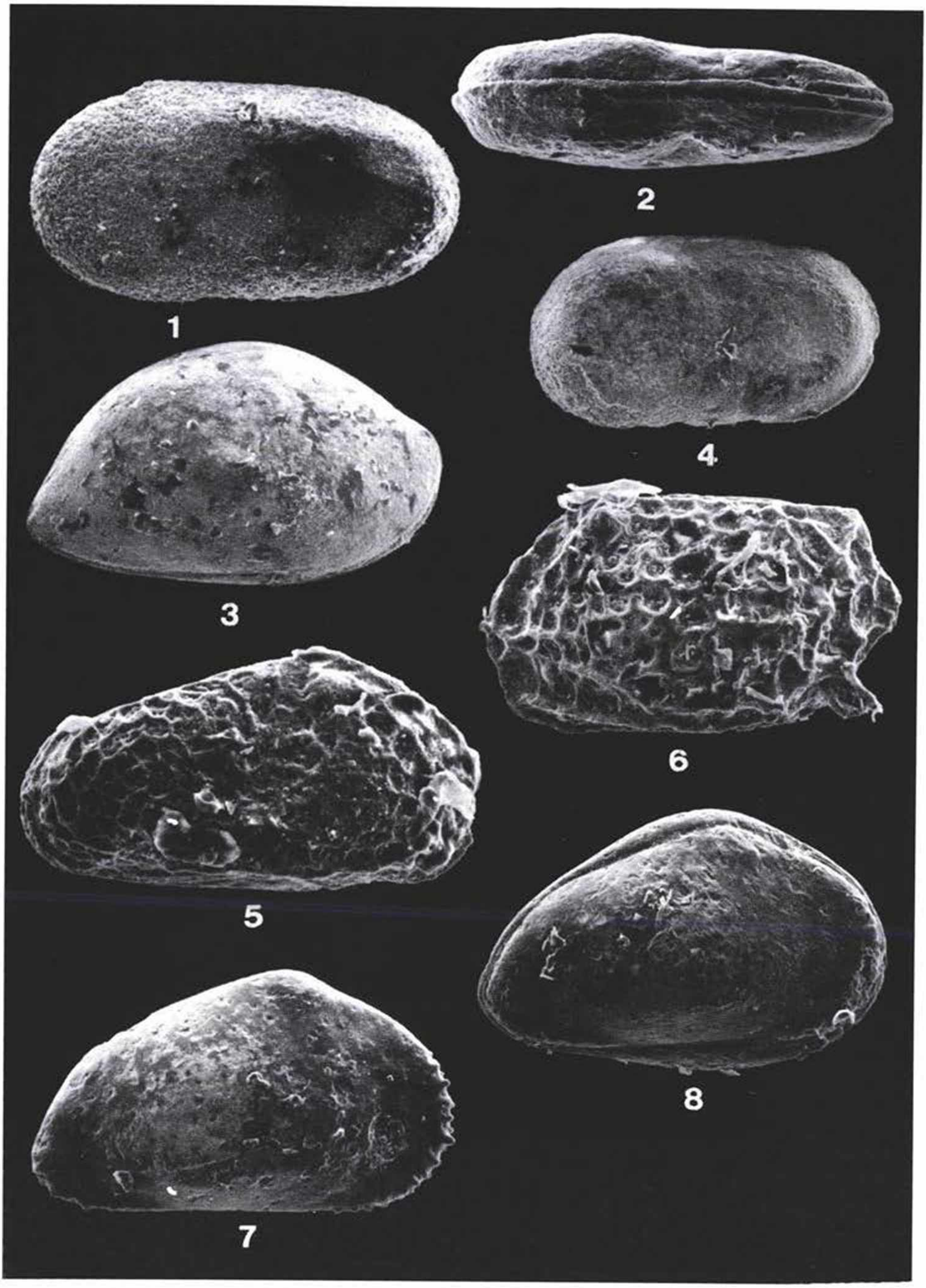

Plate 15