

THE BADENIAN DEPOSITS AT BUITUR

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REZUMAT

Fauna de moluște și asociația de nannoplancton din regiunea Buitur indică prezența unor depozite de vârstă Badenian superioară (Kossovian). Acestea sunt cuprinse între depozite cu gipsuri în bază (Wielician) și depozite de vârstă volhyniană în partea terminală a succesiunii. Fauna de la Buituri este de vârstă Badenian inferioară (Moravian).

The deposits of Badenian age from Buitur and their faunistic content have been studied by numerous researchers: Fichtel (1780), Lilienbach (1833), Boué (1833), Hauer (1837), Zikeli (1851), Hoernes (1856), Neugeboren (1860), Stur (1863), Martonfi (1893), Nemes (1888), Koch (1900), Halavats (1902), Zalanyi (1914), Gertruda Moisescu (1955) a.o.

In the Buituri area deposits of Badenian age are outcropping in the upper part of the brook which crosses the village of Băcia; in the Hunedoara Hill, the Miries Top (383 m), the Cărpiniș Hill (399 m) – north from the Buituri village, as well as at the place called Ion's Well (Spring of the Ion's Brook). In all the profiles to be found in this area, the Badenian consists of marly clays, ash – grey sands and sandy marls.

In the Sîncraiu Valley can be mentioned the presence of a block of gypsum in the base of the deposits, covered by coarse micaceous sands, with intercalations of gravel, followed by clays and then again by sands.

A lot of wellknown fossiliferous points, where from rich mollusc assemblages were collected in the past, are unfortunately covered at the

moment. This in the case of the outcrop from Ion's Well where the richest assemblage of bivalves and gasteropodes was collected from.

Further on we intend to present the mollusc assemblage from Buitur, the denomination we use being – as far as possible – adapted to the present synonymy, in accordance with the studies of Strausz (1966), Baluk (1975), Steininger et al. (1978), Svagrovsky (1981), Studencka (1986), Studencka & Studencki (1988), Baluk (1995).

BIVALVIA

Nucula nucleus Linne

Nuculana (Sacella) fragilis Chemnitz

Anadara (Anadara) diluvii (Lamarck) (= *Arca diluvii* Lamarck)

Barbatia (Barbatia) barbata Linne (= *Arca barbata* Lamarck)

Glycymeris (Glycymeris) deshayesi (Mayer) (= *Pectunculus pilosus* Hoernes = *Pectunculus (Axinea) deshayesi* Mayer)

Glycymeris cf. *obtusatus* (Partsch) (= *Pectunculus obtusatus* Partsch)

Megaxinus ef. *globulosa* Deshayes (= *Lucina globulosa* Hoernes)

Megaxinus incrassatus Duboi (= *Lucina incrassata* Hoernes)

Lucina (Linga) columbella Lamarck (= *Lucina columbella* Lamarck)

Loripes (Loripes) dujardini Deshayes (= *Lucina dujardini* Hoernes)

Divaricella (Lucinella) ornata Agassiz (= *Lucina ornata* Hoernes)

Tellina (Moerella) donacina Linne (= *Tellina donacina* Lamarck)

Glans (Glans) tourmoueri (Mayer)

Pitar (Callista) chione Linne

Cordiopsis gigas Lamarck

Venus (Ventricoloidea) burdigalensis Mayer (= *Venus burdigalensis* Mayer)

Venus (Ventricoloidea) multilamella Lamarck

Venus (Ventricoloidea) cincta Eichwald

Circomphalus basteroti Deshayes (= *Venus basteroti* Hoernes = *Chione (Clausinella) basteroti* Deshayes)

Lutraria (Lutraria) cf. oblonga Chemnitz

Acanthocardia (Acanthocardia) turonica (Hoernes) (= *Cardium turonicum* Mayer)

Cardium (Acanthocardia) preechinatum Hilber

- Cardium hians* Brocchi
Cardium cf. *fragile* Brocchi
Trachycardium (Trachycardium) multicosatum (Brocchi)
Laevicardium (Discors) *herculeus* Dollfus, Cotter et Gomez
Cerastoderma multicosatum Brocchi (= *Cardium multicosatum* Lamarck)
Cardites partschi (Goldfuss) (= *Cardita partschi* Goldfuss)
Megacardita jouanetti Basterot (= *Cardita jouanetti* Basterot = *Cardita (Megacardita) jouanetti* Basterot)
Glans (Glans) tournoueri Mayer (= *Cardita (Glans) tournoueri* Cossm. & Peyr.)
Glossus (Glossus) hoernesii (Dall) (= *Isocardia cor* Linne)
Panopea (Panopea) menardi (Deshayes) (= *Glycymeris (Panopea) menardi* (Deshayes))
Cubitostrea digitalina (Dubois) (= *Ostrea digitalina* Dubois)
Ostrea cf. *lamellosa* Brocchi
Pecten (Oppenheimopecten aduncus Eichwald (= *Pecten aduncus* Eichwald)
Pecten (Flabellipecten) besseri Andrzejowsky (= *Pecten besseri* Hoernes)
Pecten (Flabellipecten) leythajanus Partsch (= *Pecten leythajanus* Partsch)
Chlamys tigrina obsoleta Sowerby
Corbula (Corbula) carinata Dujardini
Corbula (Varicorbula) gibba Olivi
Corbula (Corbula) basteroti Hoernes
Leda nitida Brocchi
Anomia ephippium ornata Schaffer
Anomia ephippium pergibbosa Sacco
Anomia ephippium rugulosostriata Bronn (= *Antomia costata* Hoernes)
Anomia cf. *rugosa* Schaffer
Tapes (Callistotapes) vetulus Basterot
Chytherea discrepans Basterot

GASTROPODA

- Haliotis volhynica* Eichwald
Oxystele orientalis Cossmann & Peyrot (= *Trochus patulus* Dubois)
Cerithium vulgatum Bruguiere
Cerithium crenatum Brocchi

- Cerithium rubiginosum* Eichwald
Cerithium (Ptychocerithium) bronni Partsch (= *Cerithium bronni* Hoernes)
Cerithium (Ptychocerithium) crenatum Brocchi (*Cerithium crenatum* Brocchi)
Potamides (Terebralia) bidentatus Defrance (= *Cerithium bidentatum* Grat.)
Potamides (Piranella) pictus mitralis Eichwald (= *Potamides mitralis* Eichw. *Cerithium mitrale* Eichw.)
Terebralia lignitarum Eichwald (= *Cerithium lignitarum* Eichwald)
Turritella (Archimediella) turreis Basterot (= *Turritella turreis* Hoernes)
Turritella (Archimediella) pythagoraica Hilber
Turritella (Torculoidella) bicarinata Eichwald
Turritella (Torculoidella) subangulata polonica Friedberg
Turritella (Torculoidella) subangulata pseudoscalaria Moisescu
Turritella tethis erronea Cossmann (= *Turritella archimedis* Hoernes = *Turritella (Torculoidella) erronea* Cossmann)
Lemintina arenaria Sacco (= *Vermetus arenarius* Linne)
Vermetus cf. *clathratus* Deshayes
Natica (Lunatia) catena helicina Brocchi (= *Natica helicina* Brocchi)
Natica millepunctata Lamarck
Neverita josephinia Risso (= *Natica josephinia* Hoernes)
Polinices redemptus Michelotti (= *Natica redempta* Michelotti)
Melanopsis cf. *aquensis* Grateloup
Crepidula (Crepidula) gibbosa Defrance
Sigaretus striatus Cossmann & Peyrot (= *Sinum striatum* De Serres)
Aporrhais pespelecani Linne (= *Chenopus (Aporrhais) pespelicani* Linne)
Semicassis (Semicassis) miolaevigata Sacco (= *Cassis saburon* Eichwald = *Phalium (Cassidea) saburon* Lamarck)
Phalium (Cassidea) cypraeiformis Borson
Ficus (Ficus) condita Brongniart (= *Pirula (Ficula) condita* Brongniart)
Ficus geometrus Borson
Murex tortueosus Sowerby
Typhis fistulosus Brocchi
Hexaplex (Phyllonotus) pomiformis (Eichwald) (= *Murex (Phyllonotus) hoernesji* Eichw.)
Vitularia lingauabovis (Basterot) (= *Murex (Vitularia) linguabovis* Basterot)
Strombus (Strombus) bonellii Brongniart (= *Strombus coronatus* Defrance)
Nassa obliqua Hilber (= *Buccinum miocenicum* Hoernes)

- Nassa dujardini* Deshayes
Nassa korobkowi Moisescu
Nassa restitutiana buiturica Moisescu
Nassa (Tiritia) rosthorni Partsch (= *Buccinum (Tiritia) rosthorni* Partsch)
Nassa (Tiritia) serraticosta Bronn (= *Nassa (Hima) serraticosta* Bronn)
Nassa (Hima) granulare Borson
Nassa (Phrontis) dujardini schoenni Hoernes & Auinger (= *Buccinum (Niotha) schoenni* Hoernes & Auinger)
Buccinum (Niotha) subquadrangulare Michelotti
Buccinum coloratum Eichwald
Columbella (Tetrastomella) astensis Bellardi
Columbella (Atilia) fallax Hoernes & Auinger
Voluta (Athleta) ficulina haueri Hoernes (= *Voluta haueri* Hoernes)
Mitra bouei Hoernes & Auinger
Mitra striatula Brocchi
Mitra (Nebularia) scrobiculata Brocchi
Sveltia lyrata Brocchi
Cancellaria suessi Hoernes
Cancellaria (Calcarata) calcarata Brocchi (= *Cancellaria (Trigonostoma) calcarata* Brocchi)
Cancellaria (Sveltia) varicosa dertovaricosa Sacco (= *Cancellaria (Narona) varicosa* Sacco)
Cancellaria westiana Grateloup
Fusus hoessi Partsch
Latirus valenciennesi (Grateloup) (= *Fusus valenciennesi* Grateloup)
Conus (Lithoconus) friedbergi Moisescu
Conus (Chelyconus) enzesfeldensis Hoernes & Auinger
Conus (Chelyconus) sturi Hoernes
Conus (Chelyconus) fuscocingulatus Bronn (= *Conus (Lithoconus) fuscocingulatus* Bronn)
Conus (Chelyconus) miovoeslanensis Sacco (= *Conus (Chelyconus) ventricosus* Bronn)
Conus (Chelyconus) ponderosus Brocchi (= *Conus (Rhizoconus) ponderosus* Brocchi = *Conus (Lithoconus) ponderosus*)
Conus (Conolithus) dujardini Deshayes (= *Conus (Leptoconus) dujardini* Deshayes = *Conus (Conuspira) dujardini* Deshayes)
Conus (Conolithus) dujardini brezinae Hoernes & Auinger (= *Conus (Leptoconus) brezinae* Hoernes & Auinger = *Conus (Conuspira) brezinae* Hoernes & Auinger)

- Conus (Conuspira) antideluvianus buiturica* Moisescu
Surcula reevei Bellardi (= *Pleurotoma (Surcula) reevei* Bellardi)
Surcula reevei buiturica Moisescu
Pleurotoma (Clavatula) olgae Hoernes
Pleurotoma (Clavatula) justinae Hoernes
Pleurotoma (Drillia) angustae Hoernes
Mangilia bujturana Bottger
Terebra (Subula) fuscata Brocchi (= *Terebra (Acus) fuscata* Brocchi)
Terebra fuscata buiturica Moisescu
Terebra bistrata Grateloup
Terebra basteroti Nyst
Terebra neglecta Michelotti (= *Terebra (Acus) pertusa* Michelottu)
Terebra (Acus) hochstetteri Hoernes
Ringicula (Ringicula) auriculata buccinea Brocchi (= *Ringicula buccinea*
Hoernes = Ringicula auriculata Menard)
Scaphander lignarius Linne (= *Bulla lignaria* Hoernes)

Certain Echinidae are mentioned from Buitur, such as *Echinolampas hemisphaericus* Lamarck and *Scutella vindobonensis* Laub.

In order to precisely determine the age of the studied deposits from Buituri we also effected several studies on nannoplankton. The following species have been determined:

- Braarudosphaera bigelowii* (Gran et Braarud) Deflandre
Coccolithus pelagicus (Wallich) Schiller
Coccolithus miopelagicus Bukry
Coccolithus eopelagicus (Bramlette & Riedel)
Cyclicargolithus floridanus (Roth & Hay) Bukry
Calcidiscus sp.
Discoaster exilis Martini & Bramlette
Discoaster brouweri Tan emended Bramlette & Riedel
Helicosphaera carteri (Wallich) (Kamptner)
 (= *Helicopontosphaera kamptneri* Hay & Mohler)
Helicosphaera wallichi (Lohmann)
Reticulofenestra pseudoumbilicus (Gartner) Gartner
Sphenolithus moriformis (Broennimann & Stradner) Bramlette &
 Wilcoxon
Sphenolithus abies Deflandre
Syracosphaera histrica Kamptner

Triquetrorhabdulus rugosus Bramlette & Wilcoxon

This assemblage indicates the presence of the NN6 Zone – with *Discoaster exilis*, therefore Upper Badenian age of the deposits from Buituri. There was no trace found of *Sphenolithus heteromorphus*, the index species for NN5 Zone, this being typical for the Lower and Middle Badenian.

Therefore, the gypsum we mentioned previously should belong to the Middle Badenian – Wielician.

Thus, the deposits from Buitur are of Upper Badenian age, while those from Lăpugiu de Sus are of Lower Badenian age.

In the upper part of the profile from Ion's Well we also identified some species of gasteropodes: *Cerithium rubiginosum*, *Potamides bidentatus*, *Melanopsis cf. aquensis*, which indicate a brackish environment, and consequently the transition from Badenian to Sarmatian. N. Mészáros also mentions rare forms of *Discoaster kugleri* included in these deposits, which might indicate the terminal part of Badenian and the base of Volhynian.

Although the fauna of molluscs does not play essential role in establishing the age of the deposits, the absence of certain species, such as *Ancilla glandiformis*, most frequent in the mollusc assemblage from Lăpugiu de Sus, backs the observation regarding the age of the deposits, based on the study of nannofossils.

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