

cover of the internal dacides) marks this event while preceding it". The calcareous olistolites could be related to certain formations situated in front of such nappes and probably represent the only proof for the existence of certain calcareous Tithonian-Aptian formations in their area of origin.

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SOME DETAILS CONCERNING THE DISCOVERY OF
BRACHYPOTHERIUM BRACHYPUS (L A R T E T) AT
PETROS, HUNEDOARA DISTRICT.

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Abstract A maxillary fragment, with two teeth, was discovered at the end of the XIX-th century, at Petros (Hunedoara district). It was assigned by A. Koch (1891, 1900 a, b) to „*Aceratherium cf. Goldfussi*”. The fossil was not found *in situ*, but reworked in the Crivadia Valley thalweg. The material was now restudied. It belongs to *Brachypotherium brachypus* (Lartet) and is probably originated from the Valea Răchiții Formation (lower Badenian) deposits. The nannoplankton content of the bone matrix, with *Spaenolithus heteromorphus*, proves this possibility. It is the only evidence about the presence of this species in the Romanian paleofauna.

Key-words: *Vertebrate paleontology; Middle Miocene; Brachypotherium brachypus; Petros; Romania.*

Introduction. At the end of the XIX-th century, in the second half of the ninth decade, a paleontologic material of great interest was included in the geologic collection of the Transylvanian Museum from Cluj. The fossil we refer to represents a rhinocerotid remain offered by Adam BUDA to professor Anton KOCH, at that time a prominent figure of the geologic school from Cluj.

The fragment was discovered in the neighbourhood of Petros (= Petrosz; today a village from com. Baru Mare, Hunedoara district). From a fragmentary letter, probably adressed by A. Buda to Koch, which we had the opportunity to consult, it is easy to conclude that Adam Buda considered the fossil to belong to an *Antracotherium*, underlying that: „the teeth of *Antracotherium* are not from the Jiu Valley but from the Strei Valley, above Petrosz“.

Initially, A. Koch (1886) included the fossil in the genus *Aceratherium* only, to mention later that it probably belongs to *Aceratherium cf. goldfussi* Roger (A. Koch. 1891, 1900 a, b).

The material can be examined now in the collection of the Museum of the Transylvanian Basin (TBM), at the „Babeș-Bolyai” University, registered with n°. 1492. Except of the original fragment, in the same collection can be also examined a cast of plaster, made up in Koch's time. Thus it is possible to notice that from the moment where the cast was made till now, the outer wall of one of the molars (M1/) was slightly damaged.

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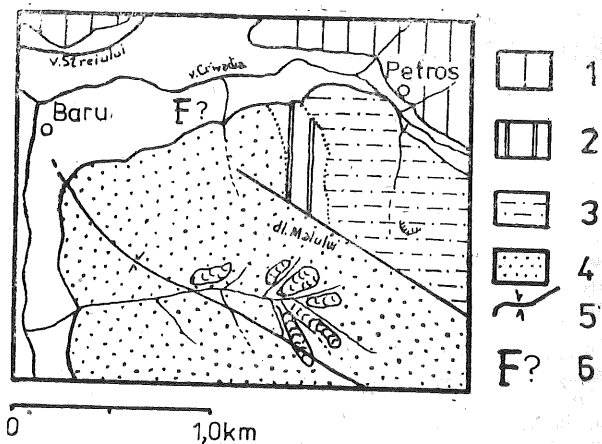


Fig. 1 — Location on the map for the supposed place of the discovery. (after V. Moisescu, 1985, with modifications).

1. Series of Sebeș (Upper Precambian); 2. The Rusești Formation (Acvitanian); 3. The Valea Mialului Formation (Chattian); 4. Axis of syncline; 5. The supposed place of discovery.

As Koch didn't provide his discovery with a description or illustration, we considered it is absolutely necessary to reanalyze the fragment, whose significance is of extreme importance for the Romanian paleofauna.

Grandorder *Altungulata* Prothero & Schoch, 1989

Order *Perissodactyla* Owen, 1848

Parvorder *Ceratomorpha* Wood, 1937

Superfamily *Rhinoceroidea* Owen, 1845

Grandfamily *Rhinocerotida* Owen, 1845

Family *Rhinocerotidae* Owen, 1845

Subfamily *Rhinocerotinae* Owen, 1845

Tribe *Teleocerotini* Hay, 1902

Genus *Brachypotherium* Roger, 1904

Brachypotherium brachypus (Lartet, 1848) (Pl. I.)

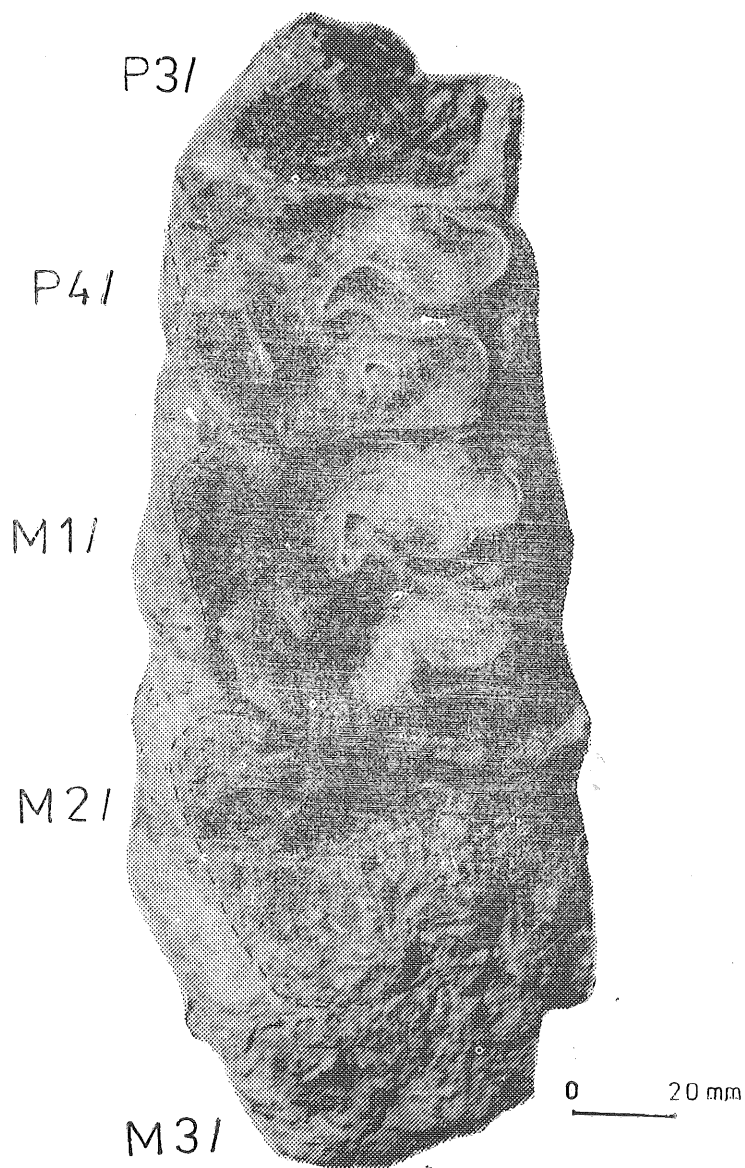
1886 — *Aceratherium* sp. — A. Koch, p. 22

1891 — *Rhinoceros* (*Aceratherium*) *cf. Goldfussi* — A. Koch, p. 459.

1900 a — *Aceratherium cf. Goldfussi* — A. Koch, p. 547

1900 b — *Aceratherium cf. Goldfussi* — A. Koch, p. 49

P 4/ — trapezoidal contour. The ectoloph damaged on the anterior segment; the paracone and the parastyle are missing. In the remaining fragment, in spite of an advanced flattening of the ectoloph, a slight



Pl. I — *Brachypotherium brachypus* (Lartet) (TBM 1492). Petros.

bulge of the metacone can be noticed. The simple crochet is present; crista and antecrochet are absent. Narrow median valley still larger than that of **M 1/**. The triangularly shaped postfossette shallower than the median valley. Anterior cingulum present. External cingulum perceptible on the entire length of the preserved ectoloph as a tuberculi — formed strip of granular aspect. Palatally there is also a cingulum obturating the entrance to the median valley. However this cingulum does not exist on the entire palatal length. No constriction of the protocone is visible.

M 1/ — rectangular-trapezoidal contour. The ectoloph damaged like the premolar. But, in this case, the flattening of the outer wall is obvious. The basis of the ectoloph under the metacone is turned up, winglike. On this segment, an external cingulum, more visible than that of **P 4/** can be noticed. The protocone constriction is drastic. So, at the level of the occlusional surface, the palatal ending of the protoloph is trefoil-shaped. Simple crochet present, crista and antecrochet are missing in this case, too. Cingulum present both mesially and distally. Palatally, a rest of cingulum blocks the entrance of the median valley. A part of this cingulum protrudes quite deeply on the direction of the median valley to the posterior groove of the constricted protocone. Therefore, this groove is not confluent with the median valley as it were natural in case of a missing cingulum. The postfossette extremely shallow, much more superficial than the median valley.

Dimensions (mm):

	Length	Width	
		anterior	posterior
P 4/	49.0*	±62.0	58.0
M 1/	54.0*	±65.0	58.0
M 2/	56.0*		

* = estimated

Comparisons and discussions. The occurrence of the genus *Brachypotherium* in Europe is located during the upper Oligocene at the level La Milloque (M. Brunet, 1979). It will last, for a long span during the Neogene, the extinction taking place only in Vallesian. For the Neogene, J. Viret (1961) proposes the following phylogenetic line: *B. aurelianensis* (Nouel) / Orleanian / → *B. stehlini* Viret / Orleanian — lower Astaracian / → *B. brachypus* (Lartet) / middle Astaracian — upper Astaracian / → *B. goldfussi* (Kaupe) / Vallesian / .

Generally, the fossil remains of *Brachypotherium* are rare. Because of this, the comparisons are usually based on a rather modest range of samples from a quantitative point of view. From what is known, the tendency toward an increase in size is to be taken into consideration in the course of geologic time. If we refer to size, the material from Hațeg can be compared, without many reserves with the middle-upper Astaracian species. However, a greater size is to be noticed for the fossil

from Romania if compared with the forms from Leoben (MN 5; A. Zdářsky, 1909) or Mugla and Catakbagyaka (K. Heissig, 1976).

Within the context of specific determinations it is necessary to remember that to distinguish the species *brachypus* from that of *goldfussi* is a highly difficult task. Owing to this, C. Guérin (1980) presents the data concerning the two species without making any further distinctions. That's why, for a better clarification of the specific determination, some details concerning the age of the geologic deposits it comes from are to be considered. Still, the stratigraphic position is uncertain, as A. Koch (1891) himself pointed: „The exact place where the fossil was found is not specified, so the Mediterranean age is not sure but very probable“ (page 459). The fragment of rock containing the skeletal remain was found reworked in the alluvial deposits from Crivadia Valley thalweg.

We tried to obtain additional information by analyzing the rock in which the fossil was incorporated. It is a slightly assorted conglomerate having angular subcentimetric boulders made up of quartzite elements and metamorphic rocks (pegmatites, quartzose schists) set in a gritty arenitic matrix with carbonatic cement. On certain parts, the conglomerate becomes a microconglomerate of subarkosian character with marked angularity. The heavy fraction is dominated by amphiboles, garnets, epidote, disthen, staurolite. Thus, an area source is supposed to exist, represented by mezometamorphites, rich in pegmatoid rocks with a process of rapid burial of sediments in conditions of deposition and/or active subsidence. From place to place, the cement is phosphatic, the rock tending to be a francolite.

The analysis of paleontologic content in the matrix proved relevant regarding the presence of nannoplanktonic forms such as: *Discoaster variabilis*, *Helicosphaera kampneri*, *Coccolithus pelagicus*, *Dictiococccites abisectus*, *Sphaenolithus moriformis*, *Pontosphaera multipora*, *Syracosphaera hystrica*, *Rhabdosphaera sp.*, *Rheticulophaenestra sp.* The presence in this association of the species *Sphaenolithus heteromorphus*, indicator of the NN 5 biozone, suggests a lower badenian (Moravian) age for these deposits. The association indicates a sequence located under the Dej Tuff from the Transylvanian Basin.

In order to try an identification of the originating deposit, an analysis of the zonal geological situation is required. Fr. Laufer (1925) considered the deposits between Baru and Petros as „Pliocene gravels“ initially called by Fr. Nopcsa (1905) „Ploștina gravels“. M. A. Mămulea (1958), in his map, illustrates the same point of view. Later, the age of these deposits was amply controverted. G. Iliescu & al. (1977) attributes an aquitanian age. More recently, H. Stilla (1985) has a somewhat similar opinion, including them in the Paleogene — early Miocene. Regarding the badenian deposits, he showed that they have „a limited area of development“ being encountered only in the occidental half of Hațeg Basin. Almost in the same period, V. Moisescu (1985) offers a much more diversified map. Between Baru-Petros-Crivadia-P. Mîndrului he signalled the following formations: Va-

lea Mialului Formation (Chattian), Rusești Formation (Aquitanian) and Valea Răchiții Formation (lower Badenian, i.e. Langhian). The last one represents a synclinal filling, whose axis could be situated approximately between Baru-Marconi-P. Mîndrului. The langhian age was determined for the first time by Gh. Popescu (in M. Pavelescu & al., 1977). Lithologically it is a formation dominated by sandstones and conglomerates of crossed stratification, to which sandy marls and clays are added. Thus, we have enough reasons to suppose that the fragment of rhinoceros belongs to this formation. The map examination stimulates us to consider that the place of discovery was probably situated somewhere upstream of Petros, and not downstream.

Genus *Brachypotherium* usually constitutes a good paleoecologic indicator. Unfortunately, in Hațeg we don't know other forms associated with this fossil which could help us in shaping a more accurate reconstruction of the badenian environment. However, from the data accumulated in Europe (C. Guérin, 1980) we know that in this case we deal with a representative frequentig a swampy biotope, in a well-forested landscape.

Up to this moment this fossil is the only one to prove relevantly the presence of this species in Romania. A. Koch (1900) notified the existence of the same form at Rîpa Roșie (Sebeș — Alba), a fact contradicted later by Fr. Nopcsa (1905). Nopcsa denied even the mammalian origin of the bones found at Rîpa Roșie, attributing them to some dinosaurians from late Cretaceous. At present, the topic cannot be discussed because the materials from Sebeș later disappeared and our attempts to find them had no positive result.

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DICERORHINUS ETRUSCUS BRACHYCEPHALUS
(PERISSODACTYLA, MAMMALIA)
FROM THE PLEISTOCENE OF SUBPIATRĂ (ȚEȚCHEA
VILLAGE, BIHOR COUNTY, ROMANIA)

VLAD CODREA*, ZOLTAN CZIER**

ABSTRACT — Some dental and post-cranial pieces belonging to the *Dicerorhinus etruscus brachycephalus* subspecies are described. They were discovered in the filling of a small pot-hole located in the neighborhood of the Subpiatra village (Țețchea, Bihor county) completely destroyed by the mining works in a quarry with mesozoic limestones. The deposit age is included into the MmQ—3b biozone (J. Agusti & alt., 1987), taking account both the accompanying micomammalian fauna (M. Venczel, 1990) and the stage rather advanced of the rhinoceros subspecies.

Introduction The Enterprise for Cement and Building Agents from Aleșd (Bihor county, W. Romania), one of the most important of this kind in Europe — if the existing capacity is taken into consideration — is located at about 40 Km east of Oradea, on the railroad linking Oradea from Cluj (Fig. 1).

The limestone necessary for the fabrication process is extracted from a big quarry situated in the proximity of the enterprise, at about 5 Km south-west of Aleșd, on a hill called „Coasta cu pietriș”. In this area, the relief developed on mesozoic limestones is marked by the presence of some karstic phenomena: several caves, insurgences and exurgences, a.s.o., being already known.

The limestone is obtained from the quarry by dynamiting large amounts of rock in charging galleries. In June 1989, with the occasion of such an explosion, besides the usually displaced limestone blocks, some breccia fragments, containing a great number of vertebrate fossil remains, especially mammals, could be also noticed. The information obtained later from the miners performing the task, indicated that the explosion affected a small pot-hole. The explosion practically blew to pieces the small karstic recipient and the filling material was spread on a vast surface of the open-pit-bench. The pot-hole, which we called the Subpiatra pot-hole is not mentioned in the Romanian speologic inventory (C. Goran, 1982), so we don't have any mapping to illustrate its morphologic aspect. Moreover it's not impossible that the pot-hole referred to, be already filled up.

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