

***Tetralophodon* (Mammalia: Proboscidea) from the vicinities of Varna, Northeast Bulgaria**

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MARKOV G. N, VERGIEV S. 2012. *Tetralophodon* (Mammalia: Proboscidea) from the vicinities of Varna, Northeast Bulgaria. – *Historia naturalis bulgarica*, **20**: 151-156.

Abstract. A previously unpublished molar fragment from the collections of the Varna Regional Museum of History – Department of Natural History, is referable to *Tetralophodon*, a genus represented in the fossil fauna of Bulgaria by the Turolian species *T. atticus*. In its morphology, however, the molar differs from the few known specimens of *T. atticus* and is closer to *T. longirostris*, a species common in pre-Turolian localities of Europe but so far not known from Bulgaria – despite previous reports based on misidentified materials. No Turolian localities are known from the area around Varna – which has yielded proboscideans of certain pre-Turolian age – and the specimen described here is the only find from Bulgaria so far which could belong to *T. longirostris*.

Key words: Proboscidea, Elephantoidea, *Tetralophodon*, Miocene, Bulgaria

Introduction

The collection of the natural history museum (Varna Regional Museum of History – Department of Natural History) in Varna, Northeast Bulgaria, stores some proboscidean fossils of Neogene and Quaternary age (VERGIEV & MARKOV, in prep.). One of the specimens, a molar fragment of unknown precise locality in the vicinities of Varna, displays morphological characters of genus *Tetralophodon* and could represent the first find in Bulgaria of its type species, *T. longirostris*, previously reported from the country on the basis of misidentified finds most of which belong in *Anancus*, and one is an amebelodontid (see MARKOV, 2004a, 2004b, 2008a). Another species, the Turolian *Tetralophodon atticus*, is present in the fossil fauna of Bulgaria (MARKOV, 2004a, 2004b, 2008b).

Institutional abbreviations:

VRMH: Varna Regional Museum of History – Department of Natural History.

MNHN: Museum National d'Histoire Naturelle, Paris.

NHM: Natural History Museum, London.

NHMW: Naturhistorisches Museum Wien, Vienna.

Material and methods:

Material: VRMH 169, m3 sin fragment (first three lophids), Varna region, precise locality unknown.

Methods: Dental nomenclature follows TASSY (1996). Measurements in mm.

Systematic palaeontology

Tetralophodon Falconer, 1857

Tetralophodon cf. *T. longirostris* (Kaup, 1832)

Description and discussion:

Only the first three lophids of VRMH 169 (Fig. 1) are preserved. Dentine is exposed on all three. The first pretrite semilophid bears a strong posterior conule, on the second, anterior pretrite conule and mesoconelet are fused. On the third pretrite semilophid additional conules are weak; thus, no symmetrical pretrite trefoil is observed on the specimen. Posttrite semilophids bear no ornamentation except for a weak posterior posttrite conule on the first lophid, posttrite main cones and mesoconelets are in line. The distal displacement of the pretrite main cones (see SAEGUSA et al., 2005) is weak on the second lophid. Interlophids are narrow, no traces of cement. Length of the fragment: 144; width: 87/94.5/94; height: >61 (on 3rd posttrite); enamel thickness: 5.5 – 7 mm.



Fig. 1. VRMH 169, m3 sin of *Tetralophodon* cf. *longirostris*, vicinities of Varna (precise locality unknown). Scale bar: 5 cm

Shape of the preserved part of the crown as well as size of the fragment indicates a third lower molar rather than m₂; reduction of central pretrite conules permits allocation to *Tetralophodon* (see SAEGUSA et al., 2005). In some aspects (e.g. presence of pseudo-zygodont crests on the posttrite side – a character which is observable in some *Tetralophodon* specimens too) VRMH 169 resembles material referred to *Gomphotherium steinheimense* by GÖHLICH (1998); however, it differs from the latter species in the absence of symmetrical pretrite trefoil pattern (see TASSY, 1985; GÖHLICH, 1998).

In Europe, there are two named species of the genus *Tetralophodon* – *Tetralophodon longirostris* (Kaup, 1832) and *Tetralophodon atticus* (Wagner, 1857) (finds from the Spanish locality Crevillente 2, MN11, originally described by MAZO & MONTOYA, 2003 as “*Tetralophodon* cf. *longirostris* ‘grandincisivoid form’” apparently represent yet another, unnamed species: H. Saegusa & G. N. Markov in MARKOV, 2008b). *T. longirostris* is common in the Vallesian and is also known from late Astaracian localities, with a possible occurrence of the species (or a closely related form) in MN6: TASSY (1985), ANTOINE et al. (1997). In the Turolian, the genus is represented in numerous European and West Asian localities by the still poorly known species *T. atticus* (see MARKOV, 2008b). While no m₃s of *Tetralophodon atticus* have been described as such in the literature, there are several specimens from various European localities which seem to belong to that species. Among them are an unpublished m₃ in a mandible fragment from Ezerovo, Bulgaria (MARKOV & KOVACHEV, in prep.), and the m₃ (DD3162) from the German locality Dorn-Dürkheim 1 figured by GAZIRY (1997, Pl. 5, Fig. 1; holotype of “*Stegolophodon caementifer*”) which should rather be allocated to *T. atticus*: MARKOV (2004b, 2008b). Also worth noting is a molar from Pikermi in Greece (type locality of *T. atticus*), originally published by VACEK (1877) and discussed in detail by TASSY (1985, 2005). While all publications regard it as an upper third molar, the specimen might actually be a lower m₃, judging from the position of its pretrite cusps and the curvature of the crown. In these specimens, the lophids are mesio-distally compressed, and the main cone of the first posttrite semilophid is displaced mesially in relation to the posttrite mesoconelet. VRMH 169, on the other hand, does not display the latter character¹, and the mesio-distal compression of the lophids is less pronounced. Safe allocation of an isolated molar fragment of unknown age is certainly problematic, but morphology of VRMH 169 is closer to *T. longirostris*.

As said above, *Tetralophodon longirostris* has been reported from Bulgaria by previous authors but all finds are misidentified – most belong in *Anancus* and one, a lower third molar from Galata near Varna, is an amebelodontid (MARKOV, 2004a, 2004b, 2008a). Thus, VRMH 169 is the only specimen from Bulgaria known so far which might indeed belong to *T. longirostris*. Since the find is an isolated molar fragment of unknown locality and age, a determination as *Tetralophodon* cf. *longirostris* seems more suitable.

Most of the few finds of pre-Turolian proboscideans (and land vertebrates in general) from Bulgaria come from localities in the Varna area (see MARKOV, 2008a), so a find of *T. cf. longirostris* from that area would not be too surprising. In marked contrast to the rest of

¹ Obviously, considering the scarce material attributable to *T. atticus*, the diagnostic value of this character is far from certain. Still, such a displacement of the posttrite main cone is generally not seen in *T. longirostris* material from the Dinotheriensande or other Vallesian European localities (GM, pers. obs. MNHN 2005, NHMW 2006, NHM 2006).

the country, no Turolian localities are known from the vicinities of Varna, and the specimen described above does not contradict the possible middle Miocene age suggested for the area by MARKOV (2008a).

Summary and conclusions

An isolated molar fragment, VRMH 169, from an unknown precise locality in the vicinities of Varna is referable to the elephantoid genus *Tetralophodon*, displaying a morphology closer to the Astaracian / Vallesian species *T. longirostris* rather than the Turolian *T. atticus* which is present in the fossil fauna of Bulgaria. VRMH 169 is the only find from the country that might indeed represent *T. longirostris*, a species erroneously reported for Bulgaria by previous authors. Pre-Turolian proboscideans are known from several localities around Varna, so an occurrence of *T. cf. longirostris* in this area is not unlikely. The specimen further emphasizes the potential significance of the fossiliferous area around Varna yielding pre-Turolian taxa which are rather rare in Bulgaria.

Acknowledgements

Prof. P. Tassy and Dr. C. Sagne (MNHN); Drs. J. Hooker and A. Curren (NHM); Drs. G. Daxner-Höck and U. Göhlich (NHMW) for access to collections, Pascal Tassy and Haruo Saegusa for valuable discussions and shared information. GM gratefully acknowledges NHMW, NHM and the financial support of the European Union for visits to Vienna (SYNTHESYS AT-TAF-1640) and London (SYNTHESYS GB-TAF-1641), and support from the exchange program between the Bulgarian Academy of Sciences and CNRS, Direction des Relations Internationales, for visits to MNHN – Paris.

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Received: 24.07.2009

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***Tetralophodon* (Mammalia: Proboscidea) от района на Варна**

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(Резюме)

Статията описва непубликувана досега находка от колекциите на Регионалния исторически музей – Варна – Отдел „Природа“. Фрагментът от трети долен молар с неизвестно точно находище от района на Варна се отнася към елефантоидния род *Tetralophodon*, демонстрирайки белези, характерни по-скоро за типовия вид на рода, *T. longirostris*, отколкото за представения във фосилната фауна на България слабо познат туролски вид *T. atticus*. Разпространен в средния миоцен и валезия на Европа, *T. longirostris* е съобщаван за България от предишни автори на базата на погрешно определен материал. Описваната тук находка е единствената от страната, която би могла наистина да представлява *T. longirostris*. Предвид фрагментарния характер на находката и несигурната ѝ възраст, тя е отнесена от авторите към *Tetralophodon* cf. *longirostris*. Малкото находки на предтуролски хоботни от България са предимно от района на Варна, така че евентуалното намиране на предтуролски *Tetralophodon* във Варненско не е неочаквано. Новоописаната находка не противоречи на предположението за средномоценска възраст на находищата около Варна и отново демонстрира значителния потенциален интерес, който представлява този район – средномоценската гръбначна фауна на България продължава да е практически непозната.