

## Fossil record of Tapirs (*Tapirus* Brünnich, 1772) (Tapiridae Gray, 1821 - *Peryssodactyla* Owen, 1848) in Bulgaria

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**Abstract.** Fossil record of the tapirs in Bulgaria covers 7 taxa (4 unspecified), the oldest one of Turolian age: *Tapirus arvernensis*, *T. jeanpivetoui*, *T. balkanicus*, as well as *Tapirus* sp. – 1, 2, 3, and 4 of 10 Late Miocene localities. All records came from Southwest Bulgaria (South of the Balkan Range and West of the Rila-Rhodopes mountain massif). Cranial fragments (mandibulae and maxillae) are the most often among the identified remains. It is concluded that the Balkans were the region of the most varied tapirid megafauna in the Late Neogene (Miocene) in Europe.

**Key words:** Tapiridae, Balkans, Neogene.

### Introduction

In the recent fauna tapirs (*Tapirus* Brünnich, 1772) survived through five species. All they have tropical distribution. Four species are spread in the Neotropical and Indomalayan Realms (Medici 2011, Cozzuol *et al.* 2013).

Territory of Bulgaria, Balkans and all Europe lies out of the recent range of Tapiridae. Although many records of fossil tapirs from Europe documented very well the former distribution of these perissodactyls in the Western Palearctic in the Paleogene (Oligocene) and Neogene (Miocene and Pliocene), data from Bulgaria and Balkans complete their last presence in the extratropics of the Old World before the drastic range restriction to South-East Asia today. Thus, all data on the Miocene distribution of tapirs in Bulgaria have an important significance for tracing the final history of tapirs in the Balkans and South-East Europe. Present study aims to collect all scattered information on the fossil history of tapirs in Bulgaria.

### Results

#### *Tapirus arvernensis* Croizet & Jobert, 1828

(1) Hrabarsko (Sofia Region). Late Miocene (Pontian; Bakalov & Nikolov 1962). Abandoned coal mines; Gnilyanska formation (Nikolov 1985). Cranial fragment with right maxilla and teeth. Whereabouts: Vertebrates Department, NMNHS - BAS.

(2) Baldevo (Blagoevgrad Region). Late Miocene (Pontian). Kanina coal mine (Baldevska formation; Nikolov 1985). Udescribed and unpublished finds (Geraads *et al.* 2011). Whereabouts: Unknown.

(3) Stanyantsi (Sofia Region). Late Miocene (Turolian, 5.80-5.35 Mya /Miocene-Pliocene boundary/) (Bohme *et al.* 2013). Udescribed and unpublished finds (Geraads *et al.* 2011). Whereabouts: Vertebrates Department, NMNHS - BAS.

***Tapirus jeanpiveteaui* Boeuf, 1991**

(4) Hadzhidimovo – 1 (Blagoevgrad Region). Late Miocene (Meotian, Nevrokop formation; Spassov 2000). Late Miocene (Turolian - Late Meotian, end of MN 11 - beginning of the MN 12 zone; dated ca. 7.5 Mya; Spassov 2002). Whereabouts: Vertebrates Department, NMNHS - BAS.

***Tapirus balkanicus* Spassov & Ginsburg, 1999**

(5) Hrabarsko (Sofia Region). Late Miocene (Pontian – Upper Turolian). Maxilla dex. with P1-M3, P1-P2 incomplete, and P3-P4 sin. Whereabouts: Paleontological Museum of Sofia “St. Kliment Okhridski” in Sofia (Spassov & Ginsburg 1999).

(6) Balsha (Sofia Region). Late Miocene (Middle Pontian). Fragment of a hemimandibula dex. (Spassov & Ginsburg 1999). Whereabouts: Vertebrates Department, NMNHS - BAS.

***Tapirus* sp. – 1**

(7) Gaber (Sofia Region). Coal mine Beli Breg near the Gaber village. Whereabouts: Unknown. Undescribed and unpublished finds (Geraads *et al.* 2011).

***Tapirus* sp. – 2**

(8) Gabra (Sofia Region). Middle Miocene. Coal mine Chukurovo near Gabra village (Nikolov 1985). Whereabouts: Unknown.

***Tapirus* sp. – 3**

(9) Strumyani – 2 (Blagoevgrad Region). Late Miocene (Turolian). Near the Strumyani village (Geraads *et al.* 2011). Whereabouts: Vertebrates Department, NMNHS - BAS.

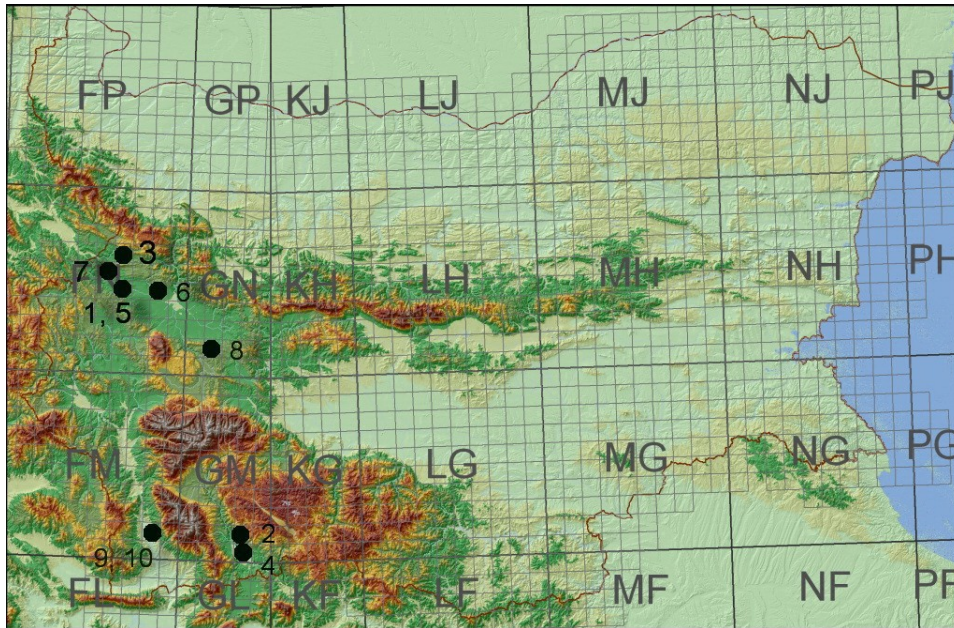
***Tapirus* sp. – 4**

(10) Ploski (Blagoevgrad Region). Late Miocene. Undescribed and unpublished finds (Geraads *et al.* 2011). Whereabouts: Unknown.

**Conclusions**

Fossil and subfossil records of tapirs in Bulgaria covers 7 taxa (4 unspecified) from 10 localities, the oldest one of Turolian (ca. 11-7 Mya). All localities of tapirs in Bulgaria are located in the Southwest part of the country in two regions – Sofia (5) and Blagoevgrad (4). All of them are located South of the Balkan Range and West of the Rila-Rhoropes mountain massif, i. e. in the late Neogene Sofia Lake and the valleys of the larger rivers in the region, Struma and Mesta (Fig. 1). All sites completely confirm locations of the s. c. “Pontian” (late Miocene) 6 large water basins (freshwater inland lakes) after Kojumdzieva (1989) – basins of Stanyantsi, Beli Breg, Aldomirovtsi, Sofia (lacustrine-palustrine sediments), and basins of Sandanski and Gotse Delchev (proluvial sediments).

The variety of forms strongly confirms the former conclusion of Geraads *et al.* (2011), that “... Bulgaria and the northern Balkan area [were] the region with the largest number of Turolian *Tapirus* remains in Europe.” (p. 459). Besides undescribed finds of Gaber, Gabra, Strumyani – 2, and Ploski, the three identified species (*Tapirus arvernensis*, *T. jeanpiveteoui*, and *T. balkanicus*) allow to summarize that the Balkans were the region of the most varied tapirid megafauna in the Late Neogene (Miocene) in Europe.



**Fig. 1.** Localities of fossil tapirs (*Tapirus* spp.) in Bulgaria: Hrabarsko (1, 5), Baldevo (2), Stanyantsi (3), Hadzhidimovo – 1 (4), Balsha (6), Gaber (7), Gabra, (8), Strumyani – 2, (9), Ploski (10).

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