



SCIENTIFIC ANNALS of the School of Geology,
Aristotle University of Thessaloniki

SPECIAL VOLUME 102



GREVENA
SIATISTA
GREECE 2014

VIth International
Conference
on Mammoths
and their Relatives

ABSTRACT BOOK

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THESSALONIKI, MAY 2014

Early elephant remains from NW Greece

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Recent advances in elephant (subfamily Elephantinae) evolution and dispersion highlight the Balkans as an important reception area in the path of these legendary mammals from Africa to Eurasia. Nevertheless, the taxonomy of early Eurasian elephants and their relationships with their African forerunners remain rather obscure (Lister et al., 2005; Markov, 2012 and refs. cited). Fossil elephants are common elements of the Quaternary mammal faunas of both continental and insular Greece but findings, especially from the mainland, are usually isolated, fragmentary, and often lacking crucial stratigraphic information (e.g., Doukas and Athanassiou, 2003). A significant number of these findings come from NW Greece, in sites located along the post-molassic morpho-tectonic valleys of the upper Haliakmon river-system and the Florina-Ptolemais basin. Numerous straight-tusked elephant (genus *Elephas* (*Palaeoloxodon*)) and mammoth (genus *Mammuthus*) fossil remains are recorded from this area (e.g., Steensma, 1988; Doukas & Athanassiou, 2003; Tsoukala et al., 2011; Koulidou, 2013), though their study is not yet complete.

A partially preserved right maxilla with M2 and M3 and three isolated and partially preserved lower molars from NW Greece, housed in the Museum of Geology and Paleontology of the Aristotle University of Thessaloniki (LGPU), are the subject of this study. Most specimens come from the Plio-Pleistocene fluvial deposits exposed SE of Tsotyli village, whereas a single specimen originates from the neighboring lignite-pits of Ptolemais sub-basin. In the absence of adequate stratigraphic information, all these specimens are indirectly and tentatively dated to the middle-late Pliocene (between 2.7-3.5 My), a time-frame that marks the invasion of elephants in Eurasia (Lister et al., 2005). Analysis of the morphometric characters of this molar sample reveals particularly primitive features such as a low number of plates (x8x for M3 and x4 for M2), low lamellar frequency (≤ 4.5) and high enamel thickness (with maximum values ≥ 5 mm in all specimens), features that are by far beyond the variation ranges of the predominant Plio-Pleistocene European species *M. meridionalis* and *E.(P.) antiquus*. Instead, this combination of characters closely matches that of early Eurasian elephants referred either to *Mammuthus* or to *Elephas* lineages, i.e., *Mammuthus rumanus* and *Elephas planifrons*, both of little known morphology and questionable relationships. The studied upper molars also appear to be more primitive than those of African *Mammuthus africanavus* and similar to those



Fig. 1. Right maxilla LGPUT-MP04 showing M2 and M3 in fairly occlusal view. Scale bar equals 10 cm.

of *M. subplanifrons*. Comparison of the Greek sample with those from surrounding areas (Bulgaria, Romania) referred to *M. rumanus* (Markov, 2012), indicates strong similarities but allocation to a particular taxon necessitates in our opinion a critical overview the early Eurasian elephant record.

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Citation:

Kostopoulos, D.S., Koulidou, I., 2014. Early elephant remains from NW Greece. Abstract Book of the VIth International Conference on Mammoths and their Relatives. S.A.S.G., Special Volume 102: 95.