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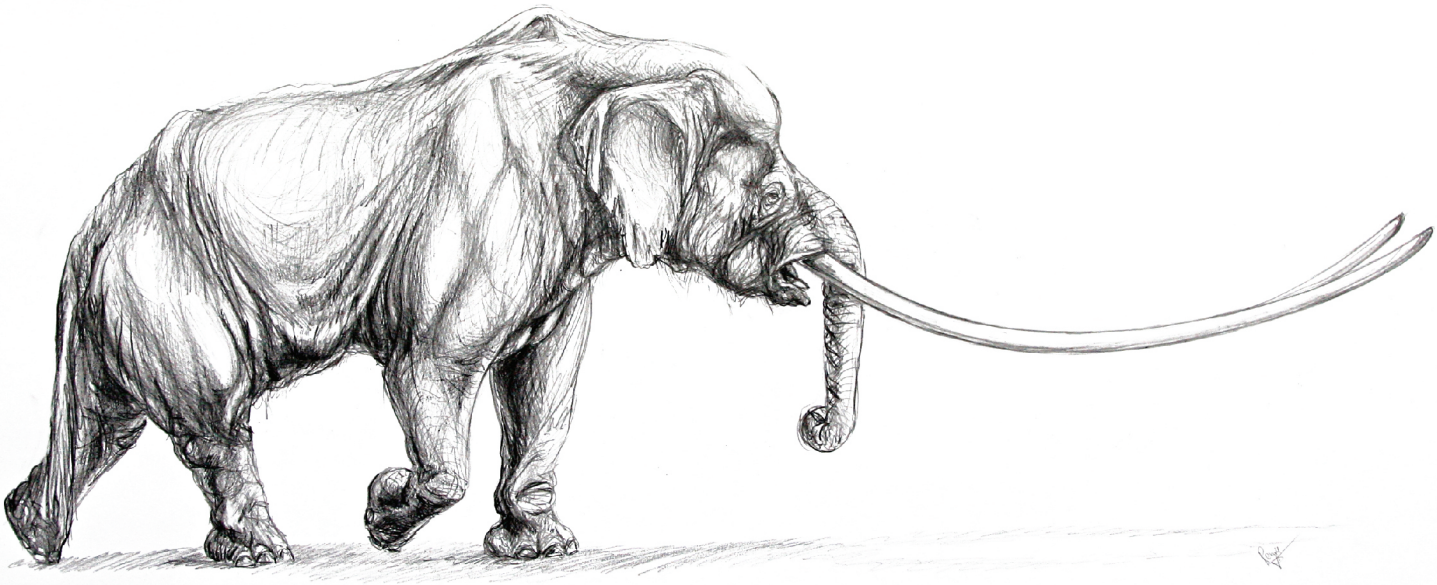

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ABSTRACT BOOK

Editors:
Dimitris S. KOSTOPOULOS, Evangelos VLACHOS, and Evangelia TSOUKALA

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New discoveries of woolly mammoth and woolly rhinoceros from Northern Iberia

Diego J. ÁLVAREZ-LAO ✉

Cold adapted large mammal faunas reached the Iberian Peninsula, which constituted the south-western boundary of their Eurasian distribution, during the coldest episodes of the Late Pleistocene (Álvarez-Lao and García, 2010, 2011a). Findings of woolly mammoth (*Mammuthus primigenius*) and woolly rhinoceros (*Coelodonta antiquitatis*), although they are not abundant, have been noticed in a number of Iberian sites, especially coming from the northern areas (Altuna, 1996; García and Arsuaga, 2003; Álvarez-Lao and García, 2011a, 2011b, 2012). In the last three years, two very interesting new discoveries have been added: Jou Puerta and Rexidora caves, both coming from the province of Asturias (NW Spain) and located 24 km away each other.

Jou Puerta site (Llanes, Asturias) corresponds to a cave placed under a sinkhole, discovered in April 2011 during the excavation works for a highway (Álvarez-Lao, 2014). An amount of 1064 fossil remains corresponding to 10 large-mammal species was recovered. The origin of the bone accumulation is related to a natural trap, so most of the fossils were unusually well preserved. The chronology of the fossils ranges from 36.6 to 30.2 Cal ka BP. The faunal association included one of the largest (n=105) and best preserved assemblages of woolly rhinoceros remains from the Iberian Peninsula, comprising an almost complete mandible, isolated teeth, scapulae, pelvis, vertebrae, limb bones, carpus, metacarpus, tarsus and phalanges; corresponding to a minimum of three individuals (Álvarez-Lao, 2014). Four teeth remains of a woolly mammoth calf (one small permanent tusk and three isolated plates of a dp4) were also recovered. The age at death of this individual was estimated on 1.5 to 2 years (Álvarez-Lao, 2014). Other ungulate species in the assemblage includes *Cervus elaphus* (red deer), *Megaloceros giganteus* (giant deer), *Capreolus capreolus* (roe deer), Bovini or *Bos/Bison* (aurochs/bison), *Capra pyrenaica* (ibex), *Rupicapra pyrenaica* (chamois) and *Equus ferus* (horse). Carnivores provided one single remain, a deciduous molar corresponding to a felid classified as cf. *Panthera pardus* (Álvarez-Lao, 2014).

Other interesting feature of the Jou Puerta assemblage is the faunal composition: while cold elements (as woolly rhinoceros and woolly mammoth) are present, temperate species (like red deer or roe deer) are predominant in the assemblage. Compared with other Iberian and Western European fossil assemblages where *C. antiquitatis* and/or *M. primigenius* occurred, results showed that temperate ungulate species are predominant at most of the Iberian assemblages whereas, by contrast, Western-Central European ungulate associations were dominated by cold-adapted taxa (especially reindeer *Rangifer tarandus*). This mixture of temperate and cold elements at Iberian sites (including Jou Puerta), which does not reflect the typical faunal composition of the Eurasian mammoth steppe, supports the idea that these cold taxa only reached the Peninsula occasionally, during the coldest episodes of the Pleistocene (Álvarez-Lao and García 2011b, 2012). Consequently, Iberian assemblages reflect a mixing of cold and temperate faunas instead of a faunal replacing, suggesting that the typical mammoth fauna was never completely established in Iberia as it was in mainland Europe and Siberia (Álvarez-Lao, 2014).

The Rexidora Cave (Ribadesella, Asturias), was discovered in 2012. The faunal assemblage is exceptionally well preserved and lacks any evidence of human or carnivore activity, suggesting that the cave was also in connection with a natural trap. The morphology of the cave, placed under a sinkhole, supports this idea. The ongoing excavation works provided, up to date, more than 300 fossil remains corresponding to *Coelodonta antiquitatis*, *Cervus elaphus*, *Rangifer tarandus*, *Bison priscus* (steppe bison), and *Crocuta crocuta* (cave hyena). The woolly rhinoceros assemblage includes numerous unusually well preserved elements as one mandible, one femur and one partially preserved skull from, at least, two subadult individuals. Other environmentally indicative species is the reindeer, which is also present in a number of Iberian sites (Altuna, 1996; Álvarez-Lao and García, 2010, 2011a; Gómez-Olivencia et al., in press), supporting the existence of cold environmental conditions at that time. The steppe bison is the dominant species in the assemblage (with a minimum number of five individuals) providing an outstanding collection of well-preserved elements, that comprises two skulls and numerous limb bones, and constituting one of the best bison assemblages from the Iberian Peninsula. Carnivores are represented by a partially preserved skeleton (including a complete skull) of a cave hyena, that was most probably another victim of the natural trap.

Occurrences of cold-adapted faunas from Iberian sites are becoming more and more frequent in recent years, in connection with the proliferation of road works and construction, evidencing that their presence in such southern areas is not as unusual as it was thought until some years ago.

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✉ dalao@geol.uniovi.es

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