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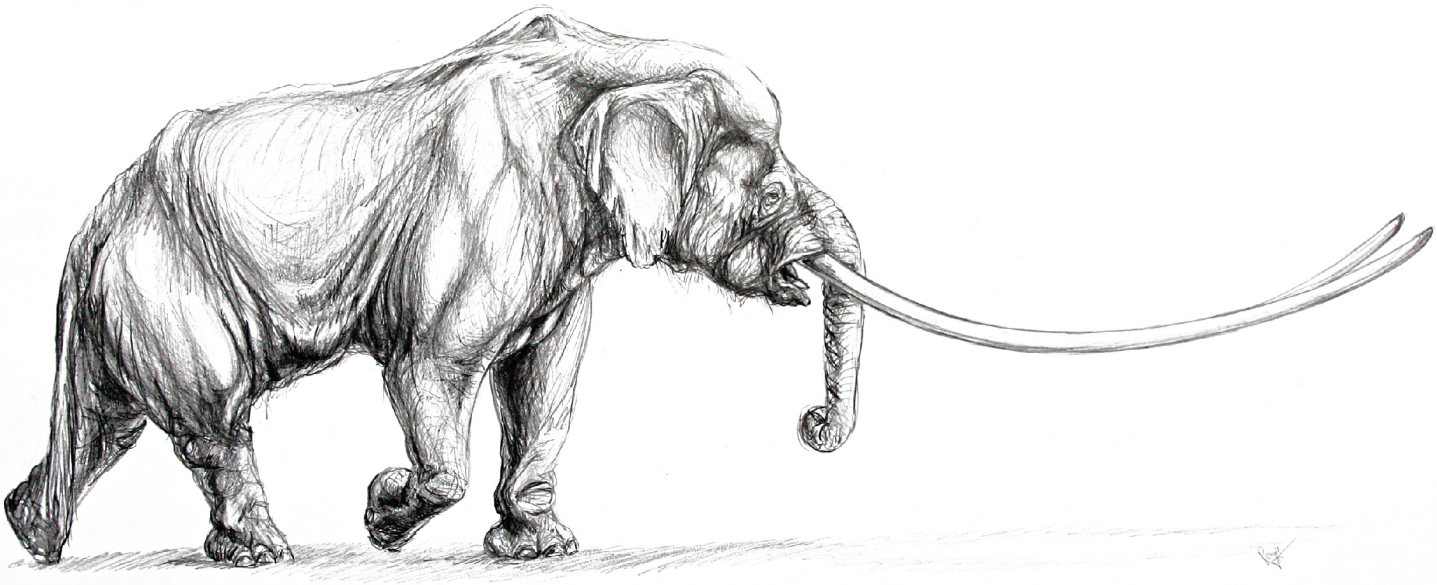

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ABSTRACT BOOK

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New findings about the Akhalkalaki site (Southern Georgia, Caucasus; 0.98-0.78 Ma)

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The early Galerian fauna from Akhalkalaki (Georgia, Caucasus, 0.98-0.78 Ma) was organized, revised and the ecological structure of the large mammal community was examined on a quantitative basis. Furthermore, survey, mapping and palynological sampling of the lacustrine sediments contemporaneous with the Akhalkalaki site were undertaken.

The following taxa were identified in the fossil collection: *Bison* sp., *Capra* sp., *Pontoceros ambiguus, Eucladoceros* sp., *Hippopotamus amphibius antiquus, Stephanorhinus* aff. *hundsheimensis*, *Equus suessenbornensis*, *E. hipparionoides, Mammuthus (Mammuthus)* aff. *trogontherii*, *Panthera onca gombaszoegensis, Pachycrocuta brevirostris, Meles* sp., *Vormela* cf. *peregusna*, *Lutra* sp., *Ursus* sp., *Xenocyon lycaonoides, Canis mosbachensis, Hystrix* sp. (gnaw marks), and *Erinaceus* sp.

We were unable to confirm the presence of some taxa mentioned in previous works (Vekua, 1962, 1986, Sokolov&Vekua, 1966, Hemmer et al., 2001, Tappen et al., 2002) such as *Bos* sp., *Cervus* cf. *Dama*, *Mammuthus (Archidiscodon)* sp., *Vulpes vulpes, Felis silvestris, Homotherium crenatidens, Lepus europaeus, Spermophilus* sp.

The paleoecological part of our study focused on the specialized herbivore community. A suite of ecological variables (body mass and diet) was assessed. The sample is dominated by high abundances (NISP) of *E. suessenbornensis* and provides a strong specialized grazing signal. However, the diversity among the fresh grass grazers is higher than the diversity among specialized grazers because five (vs. a single) species contribute to the signal. A quantitative comparison of the ecological structure and diversity of the specialized herbivore community in the Akhalkalaki assemblage distinguishing six ecological categories of specialized herbivore taxa illustrates that similar faunas are presently found in temperate latitudes and are associated with the temperate mixed broadleaf forest rather than temperate coniferous forests, forest steppe, alpine tundra or other systems at high altitudes. Our reference dataset includes a variety of vegetation densities (based on leaf area indices and/or greenness as proxies).

A rather similar picture is indicated by the palynological studies. Palynological samples were taken from the whitish sandy-clays of the site (site was formed in the fluvio-lacustrine sediments with admixture of colluvial deposits). These samples contained pollen of *Zelkova*, Vitaceae, Poaceae and Apiaceae; among the NPPs large amounts of bone salt crystals, freshwater microalgae – *Geiselodinium*, starch, hairs of aquatic insects, wood remains, and *Glomus* spores were found. Pollen of *Picea* and *Cedrus* were found in the samples from the sediments adjacent to the Akhalkalaki site. NPPs contained: wood remains, aquatic insects, algae, and phytoliths. Samples from the contemporaneous profiles at some distance from the site also confirmed presence of mixed deciduous forest. Pollen of *Cedrus, Fagus, Carya, Juniperus,* Vitacea, *Picea, Betulla, Tilia, Quercus, Alnus* and spores of the deciduous broadleaf forest ferns: *Dryopteris, Asplenium, Pteridium* were found here. Especially rich was the palynological and NPP spectra of the Baraleti profile (North of the Akhalkalaki site): alongside of freshwater algae, a large quantity of tracheal cells of wood was found, indicating the presence of forest. Among the arboreal pollen, pine predominates, the spectrum contains the pollen of cedar, spruce, birch, beech, oak and alder. The amount of pollen of arboreal species is three times higher than that of the herbaceous plants. Poaceae were the dominant grasses among herbaceous species, followed by Asteraceae. In general this vegetation spectrum is similar to temperate mixed forest now found in the Taurus Mountains of the Southern Anatolia and indicates warm and mild climatic conditions.

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