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ABSTRACT BOOK

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Global synthesis of mammoth evolution based on molar morphology

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Molar morphology has played a key role in our understanding of proboscidean evolution generally, and that of the mammoth lineage (*Mammuthus* spp.) in particular. Molar morphometrics has its shortcomings in this regard, especially the occurrence of similar, plesiomorphic form in the early members of different lineages, and their subsequent tendency for homoplasy (parallel or convergent evolution). However, studies of cranial morphology, which would undoubtedly provide much evidence of evolutionary pattern, are hampered by a shortage of sufficiently complete, undistorted finds. Molar teeth are abundant and show striking evolutionary trends, provided full account is taken of practical problems such as the recognition of plate loss through wear, or the inverse relation of lamellar frequency to size (Lister & Joysey 1992). New and updated results will be presented from among the following current issues (cf. Lister et al. 2005):

- The earliest mammoths in Eurasia: *M. rumanus* from the Late Pliocene to earliest Pleistocene of Europe and China, and some enigmatic new finds from the Near East
- The question of a defined intermediate stage ('*M. gromovi*') between *M. rumanus* and *M. meridionalis*
- The Far-Eastern Early Pleistocene origin of *M. trogontherii*
- The interpretation of European assemblages around

the Early to Middle Pleistocene boundary apparently showing co-existence of *M. meridionalis* and *M. trogontherii*, and implied cladogenetic speciation.

— Morphologically complex assemblages in Europe in the Late Middle Pleistocene transition from *M. trogontherii* to *M. primigenius*

— Claimed primitive (*meridionalis*-grade) mammoths in North America, and the Eurasian origin of the *M. columbi* lineage

— The spread of *M. primigenius* and the identity of *M. jeffersoni*

References

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