

**Paleocommunity reconstruction and accumulation of micromammalian remains  
(late Eocene, southern England)**

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**ABSTRACT**

A taphonomic study was conducted on disarticulated micromammalian bones and isolated teeth from a late Eocene assemblage in the Headon Hill Formation (Solent Group, Hampshire Basin, Isle of Wight, United Kingdom). The aim was to understand accumulating mechanisms and additional postmortem agents that influenced and potentially biased the assemblage. Skeletal elements (N = 4296) belong to three marsupials, two glirid and two theridomyid rodents, two chiropterans, three nyctitheres, two omomyid primates, one pantolestid, and one apatothere. Surface modifications (i.e., etching, breakage, splitting, and impact marks) occur on bone, enamel, and dentine. Qualitative and quantitative analyses of surface modifications of each individual taxon resulted in recognition of several taphonomic agents. Predation of two theridomyid and at least two marsupial species by the mammalian carnivore *Cynodictis* cf. *lacustris* (also present in the fauna) is indicated by high proportions of etched remains, broken bones, and puncture marks. Variations within the assemblage in proportions of modified specimens or numbers of individuals are interpreted as reflecting differences in cause of death, habits, locomotor adaptations, and predator-prey relationships. The rodents, marsupials, and probably the nyctitheres are judged to have been living close to the site of deposition, justifying their previous use for isotope-based paleoclimate studies and demonstrating their participation in the local paleocommunity.