

Co-occurrence of the pliopithecoid and hominoid primates in the fossil record: an ecometric analysis

L. SUKSELAINEN¹, M. FORTELIUS¹ AND T. HARRISON²

¹*Department of Geosciences and Geography, University of Helsinki, 00014, Helsinki, leena.sukselainen@helsinki.fi*

²*Department of Anthropology, New York University, 25 Waverly Place, New York, New York 10003, U.S.A.*

Both pliopithecoid and hominoid primates were widely distributed throughout Eurasia during the Miocene, but are known to have coexisted only at a few localities. Special environmental conditions have been suggested as a reason for the rarity of this co-occurrence. Here, we study their co-occurrence using taxonomically-based palaeoecological diversity of associated fossil mammals as well as direct ecometric analysis based on hypsodonty of mammalian herbivores. Our results show that pliopithecoids had more persistently humid occurrence contexts compared to other primate groups studied, suggesting an inability to adapt to changing environmental conditions. The opportunity for co-occurrence of hominoids and pliopithecoids appears to have been restricted by this niche conservatism in the latter group. Co-occurrence is seen under apparently even more humid conditions than the occurrence of pliopithecoids alone, but the difference is not statistically significant. Direct ecometric analysis gives a better separation of the ecological preferences of primate clades than do analyses of taxonomically-based community structure.

References:

Sukselainen, L., Fortelius, M., Harrison, T., 2015. Co-occurrence of pliopithecoid and hominoid primates in the fossil record: an ecometric analysis. *Journal of Human Evolution*, 84, 25-41.