

TAXONOMIC AND PHYLOGENETIC IMPLICATIONS OF THE CRANIAL MORPHOLOGY OF *PIEROLAPITHECUS CATALAUNICUS* (PRIMATES: HOMINIDAE)

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The facial anatomy of the Middle Miocene hominoid *Pierolapithecus catalaunicus* from Spain (ca. 11.9 Ma) provides a lot of valuable taxonomic and phylogenetic information. Several features enable to distinguish it from other contemporary genera, such as *Dryopithecus* and *Anoiapithecus*, thus reflecting the significant role of the Western Mediterranean in the early radiation of the great-ape-and-human clade (Hominidae). *Pierolapithecus* can be interpreted as a stem great ape, given the possession of hominid synapomorphies (frontal processes of the maxillae, nasals and orbits on the same plane; flat nasals that project anteriorly beneath the lower level of the orbital rims, high zygomatic root, high nasopalveolar clivus, deep palate, and broad nasal aperture widest at the base), combined with a primitive facial profile (e.g. low face with a posteriorly situated glabella). Here we report new data based on computed tomography regarding the development of paranasal sinuses in this taxon. The maxillary sinus of *Pierolapithecus* is restricted, situated well above the apices of the dental roots and not surpassing the level of posterior M1; this condition, further displayed by *Anoiapithecus*, can be interpreted as a primitive feature shared with kenyapithecines. However, unlike *Anoiapithecus*, *Pierolapithecus* lacks any trace of frontal sinus; this is a pongine derived feature that might be alternatively interpreted as suggesting a basal position for this taxon within the *Pongo* clade—rather than being a stem Homininae, as suggested by some authors. Further analyses are required in order to clarify the phylogenetic position of *Pierolapithecus* and other Eurasian Middle Miocene apes.

Keywords: *Pierolapithecus catalaunicus*, Miocene, Sinuses, Phylogeny.