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New pliopithecoid findings from several localities of Abocador de Can Mata (ACM), recovered during the 2004, 2005 and 2007 field campaigns, are reported. The local stratigraphic series of ACM, situated in els Hostalets de Pierola (Vallès-Penedès Basin, Catalonia, Spain), comprises more than a hundred of vertebrate localities distributed throughout about 300 m with magnetostratigraphic dating (Alba *et al.*, 2006; Moyà-Solà *et al.*, in press). There are currently 20 records of pliopithecoids from 6 different sites (C3-B2, C5-C3, C4-Cb, C5-C2, C5-A8 and C4-A1), ranging from mandibles and maxillary fragments to isolated teeth, which correspond to a minimum number of 8 individuals. All these localities span from ca. 11.9 to 11.6 Ma (subchron C5r.3r, Late Aragonian, Middle Miocene). The oldest one (C3-B2) corresponds to the *Megacricetodon ibericus*+*Democricetodon larteti* local biozone and can be correlated to MN7, whereas the remaining ones correspond to the *M. ibericus*+*D. crusafonti* local biozone and can be correlated to MN8.

The pliopithecoid remains from ACM display a pliopithecine-like dental morphology with well-developed pliopithecine triangles on M/2 and M/3. This, together with other occlusal details, discards an attribution to *Pliopithecus* (*Epipliopthecus*). Albeit slightly smaller, the ACM remains are most similar in size to *P. piveteaui* and *P. antiquus*. Among the latter, several occlusal details (much greater development of the buccal cingulid in lower molars) and dental proportions (M/3 much longer than M/2) indicate greater similarities with *P. antiquus* from Sansan (MN6; type locality) and La Grive PB A (MN8; type locality of *P. antiquus chantrei*, considered a junior synonym of the former).

The pliopithecoid remains from ACM, however, differ from the material of both French localities regarding dental proportions and several occlusal details of the lower molars, such as the position of the protoconid and hypoconulid, and the development of the mesial fovea and buccal cingulid. These differences indicate that the material from ACM represents a new species of *Pliopithecus* s.s. Previous pliopithecoid findings from the Vallès-Penedès Basin previously attributed to *P. antiquus*, such as those from Castell de Barberà, are neither attributable to *P. antiquus* nor correspond to *Pliopithecus* sp. nov. from ACM.

Alba D.M., Moyà-Solà S., Casanovas-Vilar I., Galindo J., Robles J.M., Rotgers C., Furió M., Angelone C., Köhler M., Garcés M., Cabrera L., Almécija S. & Obradó P. (2006) – *Los vertebrados fósiles del Abocador de Can Mata (els Hostalets de Pierola, l'Anoia, Catalunya), una sucesión de localidades del Aragoniense superior (MN6 y MN7+8) de la cuenca del Vallès-Penedès. Campañas 2002-2003, 2004 y 2005*. Est. Geol., 62, 295-312.

Moyà-Solà S., Köhler M., Alba D.M., Casanovas-Vilar I., Galindo J., Robles J.M., Cabrera L., Garcés M., Almécija S. & Beamud E. (in press) – *First partial face and upper dentition of the Middle Miocene hominoid Dryopithecus fontani from Abocador de Can Mata (Vallès-Penedès Basin, Catalonia, NE Spain): taxonomic and phylogenetic implications*. Am. J. Phys. Anthropol.

***Pierolapithecus* and the phalangeal morphology of Miocene apes: paleobiological and evolutionary implications**

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The partial skeleton of the Middle Miocene hominoid *Pierolapithecus catalaunicus* (Moyà-Solà *et al.*, 2004) provides the oldest unequivocal evidence of orthograde, thus providing a unique opportunity for understanding the transition from pronograde to orthograde. We compare the morphology and proportions of the proximal and intermediate phalanges of *Pierolapithecus* with those of other Miocene apes - *Proconsul*, *Sivapithecus*, *Hispanopithecus* and, most notably, the Paşalar specimens that are most likely attributable to *Griphopithecus* (Ersoy *et al.*, 2008) - in order to make paleobiological inferences on locomotor evolution. In particular, we investigate the orthograde/pronograde evolutionary transition, in order to test whether the acquisition of vertical climbing and suspension was decoupled during evolution.

Our results indicate that the manual phalanges of Miocene apes are much more similar to one another than as compared to living apes. In particular, Miocene apes primitively retain palmigrady-related features on the basal portion of the proximal phalanges, together with other features from the shaft and trochlea further indicating powerful-grasping capabilities. These features indicate that above-branch, powerful-grasping palmigrady, inherited from stem hominoids, constituted a significant component of the locomotor repertoires of different hominoid lineages at least until the Late Miocene. Nonetheless, despite their striking morphological similarities, several Miocene apes do significantly differ regarding phalangeal curvature and/or elongation. *Hispanopithecus* uniquely departs by displaying markedly-curved and elongated phalanges, like extant arboreal suspensory apes, which agrees with several features indicating orang-like suspensory capabilities (Almécija *et al.*, 2007). The remaining Miocene apes, on the contrary, display a low to moderate phalangeal curvature, and short to moderately-elongated phalanges, indicating that they lacked suspensory adaptations.

The transition from a pronograde towards an orthograde bodyplan, likely documented by differences between Paşalar and *Pierolapithecus*, as far as this anatomical region is concerned is merely reflected in somewhat more elongated phalanges, which can be functionally related to enhanced vertical-climbing capabilities. Our results therefore agree with the view that locomotor hominoid evolution largely took place in a mosaic fashion. Just like taillessness antedated the acquisition of an orthograde bodyplan, the emergence of the latter—apparently only related to vertical climbing—preceded the acquisition of suspensory adaptations, as well as the loss of primitively-retained, palmigrady-related features.

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Rudabánya: analysis of a fossil hominid site

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The middle to late Miocene deposits at Rudabánya, Hungary, were laid down in a shallow valley sloping northwards from a range of hills and opening out into the Pannonian lake. Rise and fall of lake level gave rise to varying conditions, from dry land with soil formation to swamp and lake. The stratigraphic and palaeontological succession has been investigated at one of the sites, Rudabánya 2, where two cycles of deposition are represented, with soil formation, swamp conditions with lignite formation and periods of extended high lake level succeeding each other. Both mammal and plant fossils are present in several levels. Taphonomic modifications in the Rudabánya 2 vertebrate faunas include losses through carnivore selection, fluvial sorting at some levels, and post-depositional destruction by leaching and/or acid soils. The lowest level, the lower lignite, has few fossils. The fossil mammals from the level above, the grey marl, are the least modified but they are mixed with abraded bone fragments transported in and more complete specimens resulting from near-lake deaths. Carnivore action is indicated, but the specimens were too broken post-depositionally for the impact of