

FYI #1 (also sent as e-mail)

Date: 3/2/06
From: "Harry V. Merrick"
Subject: 3.987 FYI #1 - Oreopithecus

Hi folks,

I threatened you with some spam about *Oreopithecus*, a possible Miocene bipedal ape. Well here it is.

As I mentioned one of the really interesting recent discoveries is that there may have been another genus of now extinct apes which independently developed bipedalism. The candidate is *Oreopithecus* a 9 to 7 million year old genus of European apes, however, your textbook authors don't provide any real discussion of this evidence or this possibility. The genus *Oreopithecus* has been recognized for over 130 years, it being one of the first fossil apes to be discovered and described. Below are several references and abstracts of relatively recent papers which have reanalyzed the *Oreopithecus* remains and have somewhat controversially proposed that *Oreopithecus* was a habitual biped. It is clear that even if *Oreopithecus* turns out to be a biped, other physical features strongly suggest that it wasn't in the ancestral lineage leading to humans.

H. Merrick

Köhler, Meike and Salvador Moyà-Solà

1997 Ape-like or hominid-like? The positional behavior of *Oreopithecus bambolii* reconsidered.
Proc. Natl. Acad. Sci. USA Vol. 94, pp. 11747-11750, October 1997

Abstract:

Comparative morphological and functional analyses of the skeletal remains of *Oreopithecus bambolii*, a hominoid from the Miocene Mediterranean island of Tuscany-Sardinia (Italy), provides evidence that bipedal activities made up a significant part of the positional behavior of this primate. The mosaic pattern of its postcranial morphology is to some degree convergent with that of *Australopithecus* and functionally intermediate between apes and early hominids. Some unique traits could have been selected only under insular conditions where the absence of predators and the limitation of trophic resources play a crucial role in mammalian evolution.

Rook, Lorenzo, Luca Bondioli, Meike Köhler, Salvador Moyà-Solà and Roberto Macchiarelli

1999 *Oreopithecus* was a bipedal ape after all: Evidence from the iliac cancellous architecture.
Proc. Natl. Acad. Sci. USA Vol. 96, Issue 15, 8795-8799, July 20, 1999

Abstract:

Textural properties and functional morphology of the hip bone cancellous network of *Oreopithecus bambolii*, a 9- to 7-million-year-old Late Miocene hominoid from Italy, provide insights into the postural and locomotor behavior of this fossil ape. Digital image processing of calibrated hip bone radiographs reveals the occurrence of trabecular features, which, in humans and fossil hominids, are related to vertical support of the body weight, i.e., to bipedality.

Moyà-Solà, Salvador, Meike Köhler and Lorenzo Rook

1999 Evidence of hominid-like precision grip capability in the hand of the Miocene ape *Oreopithecus*.
Proc. Natl. Acad. Sci. USA Vol. 96, Issue 1, 313-317, January 5, 1999

Abstract:

Functional and allometric analyses of the hand of the late Miocene ape *Oreopithecus bambolii* (Tuscany, Italy) reveal a series of features that reflect an improved grasping capability including firm pad-to-pad precision gripping that apes are unable to perform. Related features such as hand length, relative thumb length, a deep and large insertion area for the tendon of the long thumb flexor, and the form of the metacarpal 2/capitate articulation are not present in extant or fossil apes. In these features, the *Oreopithecus* hand closely matches the pattern of early hominids, presumably as a response to similar functional demands.