

By E. Delson

REPRINTED FROM:

Encyclopedia of Human Evolution and Prehistory, 2nd ed; E. Delson, I. Tattersall, J. A. Van Couvering and A. S. Brooks, eds. Garland: New York. 2000

WITH THE COMPLIMENTS OF:

Eric Delson
Department of Vertebrate Paleontology
American Museum of Natural History
New York, NY 10024

Hominini

Tribe containing taxa on the human lineage after its separation from any apes; corresponds to Hominidae of many previous authors. In this work, Hominidae and related taxa are used in a strictly cladistic sense, and if a term is required to denote the broadest concept of humans, it is *Hominini*. This tribe includes the genera *Ardipithecus*, *Australopithecus*, *Paranthropus* and *Homo*, each of which is discussed in detail.

In briefest outline, fossils and molecular studies indicate that the last common ancestor (LCA) of a hominin and an ape probably lived in Africa 8–5 Ma—paleontologists would often prefer an older date within this range, molecular anthropologists a younger. This common ancestor presumably was similar in many ways to a chimpanzee, in that hominins are derived compared to African apes in almost all studied features of morphology. Two functional complexes of some interest are less clearly understood, however. The modern chimpanzee and gorilla share locomotor adaptations to knuckle-walking, which most morphologists consider one or more detailed synapomorphies (shared derived characters). If that is the case, it is unlikely that the LCA had this adaptation, but others have suggested that knuckle-walking was indeed present in the LCA and lost in the (first?) hominins. Similarly, the morphocline and polarity of molar enamel thickness and formation speed is not clear among hominoids. For some years, it was thought that thick, fast-formed enamel characterized early hominids as compared to a thin, fast-formed enamel in hylobatids, proconsulids, and many other higher primates; thinner or more slowly formed enamel among hominids would thus be derived. But more recent studies have not confirmed this model for either modern taxa or fossils. For example, kenyapithecines include forms with thin enamel (*Otaviapithecus*), thick enamel (*Griphopithecus* and *Afropithecus*), and in between (*Helio-pithecus* and perhaps *Kenyapithecus*); the supposed early hominine *Graecopithecus* has very thick enamel nearly comparable to that found in *Paranthropus* species. *Ardipithecus ramidus* is distinguished from *Australopithecus* species by rel-

atively thin enamel, although this is based upon observation rather than precise measurement. If the polarity of enamel thickness within Homininae runs from thick to thinner (or hyperthick in *Paranthropus*), then the LCA of humans and apes might have had relatively thick tooth enamel like *Homo* and *Australopithecus*; in this case, *Ardipithecus* is anomalous and might represent a convergence toward African apes, perhaps related to its forest habitat. But if the pattern were random, or if thin enamel were ancestral for modern hominines, the LCA might have had thin enamel like *Ardipithecus*.

Whatever the morphology of the African ape-hominin LCA, by ca. 4.5 Ma at the latest some of the hominin features or trends had become established, including reduction in the canine-premolar complex and anterior shifting of the foramen magnum. Soon after, species of *Australopithecus* document the development of bipedalism as the typical hominin locomotor pattern, with all of its attendant derived morphological modifications. Further dental and postcranial modifications and, eventually, increased brain size and complexity and tool use continued to characterize the successive lineages of the Hominini into the Pleistocene.

See also *Ardipithecus ramidus*; *Australopithecus*; Brain; Hominidae; Homininae; *Homo*; Locomotion; Molecular "vs." Morphological Approaches to Systematics; Paleolithic; *Paranthropus*; Teeth. [E.D.]

Further Readings

- Begun, D.R. (1994) Relations among the great apes and humans: New interpretations based on the fossil great ape *Dryopithecus*. *Yrbk. Phys. Anthropol.* 37:11–63.
- Conroy, G.C., Lichtman, J.W., and Martin, L.B. (1995) Brief communication: Some observations on enamel thickness and enamel prism pattern in the Miocene hominoid *Otaviapithecus namibiensis*. *Am. J. Phys. Anthropol.* 98:595–600.