

## Oldest fossil ape may be human ancestor

Newly discovered fossils in Uganda from a more than 20-million-year-old, apelike creature, combined with previously unearthed remains, establish the find as the oldest known ancestor of modern humans, apes, and gibbons, a team of researchers now contends.

Two characteristics of the African animal, which weighed between 45 and 90 pounds, solidify its pivotal evolutionary standing, according to the scientists—skeletal signs of a relatively upright posture and a shoulder that allowed for hoisting the body and swinging through the trees.

The ancient ape rates a new genus and species, *Morotopithecus bishopi*, assert anthropologist Daniel L. Gebo of Northern Illinois University in DeKalb and his colleagues.

"This is the earliest evidence for a significantly apelike body plan in the primate fossil record," says anatomist Laura MacLatchy of the State University of New York at Stony Brook, a member of Gebo's team.

After finding parts of its face, teeth, and spinal column at Uganda's Moroto

site in the early 1960s, researchers classified the prehistoric animal as any of several established fossil apes that lived in Africa between 25 million and 15 million years ago. These include *Proconsul* and *Afropithecus*.

Excavations in 1994 and 1995 by Gebo's group yielded additional remains from the same animal's upper leg and shoulder. The leg bones are extremely thick and would have allowed for cautious climbing, as seen in living orangutans and lorises, the team contends. The shoulder shows evidence of enhanced mobility, suggesting that *Morotopithecus* used its arms to hang or swing from branches.

Prior studies of its vertebrae had indicated that it had a relatively short, stiff back, consistent with knuckle-walking while on the ground.

Together, the old and new Ugandan material suggests a creature whose anatomy differs markedly from that of other fossil apes, MacLatchy says.

Analysis of the decay rate of a radioactive form of the element argon in volcanic ash at Moroto dates fossils at the site to at

least 20.6 million years ago, she and her coworkers report in the April 18 *SCIENCE*.

Knowledge of the anatomy and evolutionary relationships of fossil apes that inhabited Africa and Asia from 25 million to 10 million years ago remains fragmentary, and *Morotopithecus* has both backers and doubters.

Monte L. McCrossin of Southern Illinois University in Carbondale suspects that the Ugandan specimens belong to *Afropithecus*, which has been found in western Kenya and dates to about 17 million years ago.

Additional shoulder fossils will be needed to certify the Moroto ape as an arm-swinging, McCrossin argues.

He and his colleagues have found fossils of a 15-million-year-old African ape, *Kenyapithecus* (see p. 240). That creature was more closely related to living African apes and humans, in their view.

William J. Sanders of the University of Michigan in Ann Arbor tentatively accepts the new classification of the Ugandan finds. Sanders had previously studied vertebrae from *Morotopithecus*.

Either the creature is a tree-climbing ancestor of living apes, humans, and gibbons, or it died out after evolving several features in common with later apes, Sanders remarks.

"The early age assigned to *Morotopithecus* requires us to interpret these fossils cautiously," the Michigan anthropologist adds. — B. Bower



Pieces of two upper-leg bones belonging to 20-million-year-old fossil ape.

## Aged garlic could slow prostate cancer

A compound derived from aged garlic dramatically diminishes the growth of human prostate cancer cells, according to data from a new test-tube experiment.

Researchers from Memorial Sloan-Kettering Cancer Center in New York worked with a line of cells that retains many of the features characteristic of those in the diseased prostate. For instance, they multiply faster when exposed to testosterone, the primary male sex hormone, or to DHT, a far more potent analog that the body produces from testosterone.

The cultured cells also produce compounds characteristic of human prostate tumors, making them a good model of human disease, explains Richard S. Rivlin, Sloan-Kettering's director of clinical nutrition.

His group exposed the cells to S-allylmercaptocysteine (SAMC), a sulfur compound that forms as garlic ages. It caused the cancer cells to break down testosterone two to four times more quickly than normal—and through a route that does not produce DHT, notes John T. Pinto, a coauthor of the study. In this sense, he told *SCIENCE NEWS*, the garlic-derived compound "is doing the same thing that testosterone deprivation would do."

At concentrations that could develop in the blood of people taking commercially marketed aged-garlic pills, SAMC slowed the cancer cells' growth by as

much as 70 percent, compared to the rate in untreated cells. Pinto and Rivlin reported their findings in *New Orleans* last week at the Experimental Biology '97 meeting.

The compound offered a few other bonuses. It cut the production of two proteins (including prostate-specific antigen, or PSA) exuded by the cells and often used in blood tests for prostate cancer (see p. 240). However, Rivlin notes, the garlic-induced PSA decrease was greater than expected, "out of proportion to the decrease in cancer growth." This might further retard a tumor's growth, Pinto says, since PSA itself can promote cancer cell proliferation.

From the results achieved at the low exposures in this study, SAMC "looks promising," says Maurice Bennink of Michigan State University in East Lansing.

John A. Milner of Pennsylvania State University in State College, who heard the SAMC data reported in *New Orleans*, agrees. Especially with so few treatments available for prostate cancer, he says, "I think [the new study] is significant—no question about it."

The results don't suggest there's any new value in flavoring entrees generously with garlic. "It is unlikely you could obtain [potentially therapeutic doses of SAMC] from eating fresh garlic," Rivlin points out. The bulbs need to have been commercially aged for at least a year. — J. Raloff



### Emperor's new clothes?

Flouting the usual tuxedo look, an all-white Emperor penguin chick stands out from the colony. Gerald Kooyman of the Scripps Institution of Oceanography in La Jolla, Calif., spotted the rare, non-albino bird while taking a census of the Antarctic population.