African find moves ancient apes southward

Four fossil hunters searching a hillside in Namibia have chanced upon part of a jaw that may represent one of the last ancestral species common to modern African apes and hominids, the evolutionary family that includes humans.

"This is the first pre-hominid, ape-like creature found in southern Africa," says anthropologist Glenn C. Conroy of Washington University in St. Louis, who directed the expedition leading to the June 4 find. "It significantly expands the range and distribution of ancestral higher primates."

A preliminary estimate, based on known ages of rodent fossils found at the same site, places the primate jaw at somewhere between 10 million and 15 million years old, Conroy says. Anthropologists have found few remains of ancient African apes that lived between 5 million and 15 million years ago, the crucial period preceding the emergence of hominids. Eastern African sites have yielded the remains of two ancient apes, *Proconsul* and *Kenyapithecus*, dating to roughly 14 million years ago. The earliest known hominids, also found in eastern Africa, date to about 3.5 million years ago.

The new specimen, a lower right jaw, contains all three molar teeth, one complete and one partial premolar tooth, and largely intact roots for a canine and several incisors at the front of the mouth. With the permission of the Namibian government, Conroy took the fossil to St. Louis last week for three years of study. One of his first tasks involves removing rocky sediment from some of the teeth. During the expedition, the team bathed the jaw in vinegar to remove loosely clinging sediment.

The rest of the group consists of Martin Pickford of the College de France and Brigitte Senut of the French National Museum of Natural History, both in Paris, and John Van Couvering of the American Museum of Natural History in New York City. Pickford turned over a rock and found the fossil about 15 minutes into the first day of exploration at the site.

"The new fossil jaw is very exciting indeed," says anthropologist Phillip V. Tobias of the University of the Witwatersrand in Johannesburg, South Africa, who studied the specimen for several hours on June 20. "This creature may be a competitor for the status of one of the last common ancestors of African great apes and the family of man."

Several hominid-like features stand out on the fossil, Tobias says. The short length of the bone suggests the ancient ape had a vertically aligned face without protruding jaws, and the closely bunched tooth roots indicate small incisors with narrow crowns, much like those of early hominids. Although Tobias says the canine tooth's bony root looks "chunky and thick," computed tomography scans of the jaw taken at a Johannesburg hospital last week show that the root does not extend far into the jawbone.

"This suggests that the [tooth] that sat on the canine root was not as fang-like as the canines of modern great apes," Tobias contends.

In contrast, the third molar, or wisdom tooth, displays a relatively rapid tooth-eruption pattern that resembles patterns seen in living apes more than those in humans, he notes. The freshly erupted third molar apparently emerged soon after the first and second molars, which show little enamel wear, he says.

From the admittedly fragmentary piece of jaw, Tobias estimates that the ancient ape reached no more than about 3½ feet tall – around the height of Lucy, a female member of the earliest known hominid species.

As scientists attempt to place the Namibian find within a genus and species, comparisons with *Kenyapithecus* should prove critical, Conroy maintains.

The presence of an approximately 10-million-year-old ape in southern Africa would have important ecological implications, he adds. Researchers generally agree that these ancient primates lived in dense forests. Thus, Conroy suggests, the dry, treeless expanses now dominating the landscape in and around Namibia must have replaced a rainier, more heavily forested region.

Geological studies indicate that much of Africa entered a period of cooler, drier climates and retreating forests around 6.5 million years ago, Tobias says, and the new fossil confirms the vastly different ecological identity of southern Africa prior to that time.

But without a more definitive age estimate, the evolutionary standing of the Namibian jaw remains unclear, Tobias adds.

"We can't really lose, no matter what age this fossil might be," Conroy says. "Nothing like it has ever been found south of the equator." *– B. Bower*

Do some SIDS victims actually suffocate?

At least 37 babies have died while sleeping on bean-bag infant cushions – cloth sacks loosely filled with plastic beads. Many of these babies were found with their faces buried in the soft, pillow-like cushions. Although most autopsy reports concluded they had died of sudden infant-death syndrome (SIDS), the Consumer Product Safety Commission nonetheless recalled the infant bean-bags last year, citing them as a potential asphyxiation hazard. A new investigation of 25 of the deaths strengthens that conclusion with laboratory tests suggesting most of the infants died of accidental suffocation.

"Our findings challenge the basic assumptions used to distinguish SIDS from accidental suffocation and emphasize the need for new safety regulations for [all] infant bedding," assert James S. Kemp and Bradley T. Thach of Washington University in St. Louis.

SIDS and accidental suffocation "are indistinguishable on postmortem examination," they maintain. Physicians generally assume that healthy infants will turn their heads to get air when their bedding threatens suffocation, and "posture is thus considered coincidental" in the sudden deaths of infants found with their faces straight down, the researchers say. Indeed, 20 of the 25 deaths they studied had been attributed to SIDS.

Kemp and Thach began their investigation two years ago when the mother of an alleged SIDS victim came to them with suspicions that one of these cushions had asphyxiated her child. Using cushions from two different makers, the team analyzed the extent to which they would resist the airflow of a child laying face down, how long a rabbit could survive breathing into the cushions, and the extent to which a face-down infant would "rebreathe" exhaled carbon dioxide.

The rabbits died within three hours, their suffocation confirmed by low oxygen levels in the blood. The researchers conclude that both products studied would trap exhaled air, allowing infants to rebreathe potentially lethal amounts of carbon dioxide. Kemp notes that one commonly cited early study suggested that infants will roll their heads to the side if positioned with their faces directly into bedding. But the new work indicates that babies attempting to turn aside from a bean-bag pillow "would only have deepened their rebreathing pocket without gaining access to fresh air," Kemp and Thach write in the June 27 NEW ENGLAND JOURNAL OF MEDICINE.

As retailers pulled the bean-bags from their shelves last year, the Consumer Product Safety Commission issued warnings to the purchasers of the 950,000 infant cushions already sold in the United States: Destroy them or stop using them with infants. Next week, the commission will consider banning the manufacture of the cushions.

Kemp and Thach call for broad-scale revisions in infant-bedding standards to account for the threat of "rebreathed" air. Kemp would begin by limiting the products' softness and ability to conform to a child's head. The team also calls for studies "to reassess the cause of death in the 28 to 52 percent of SIDS victims who are found with their faces straight down." *– J. Raloff*