PALEOANTHROPOLOGY

Oldest Human Femur Wades Into Controversy

PARIS—Tempers flared last week in a sweltering salon at the French Academy of Sciences here* as scientists hotly debated the attributes of anthropology's most famous thighbone, the 6-million-year-old femur of an ancient Kenyan hominid called *Orrorin tugenensis*.

More than 100 scholars packed the academy's opulent, wood-paneled *Grande Salle* to witness the first face-to-face gathering of the discoverers of the three oldest putative hominids. In talks and a panel discussion, the researchers discussed whether *Orrorin* and other contenders for the title of earliest human ancestor walked upright and in what manner. Bipedalism is a traditional hallmark of membership in the human family rather than being an ancestor of chimpanzees, gorillas, or quadrupedal apes.



Walking the walk? Researchers argued over the evidence for the gait used by the owner of this ancient thighbone.

The speakers were particularly interested in learning more about *Orrorin*'s legs. Paleontologist Brigitte Senut of the National Museum of Natural History in Paris presented recently published computed tomography (CT) scans of *Orrorin*'s thighbone (*Science*, 3 September, p. 1450). According to Senut, the scans show that the bone is thicker on the bottom of the subhorizontal neck of the femur, indicating that weight was put on the top of the bone. Other features also suggest that the hips were stabilized in a manner similar to those of modern humans. In fact, Senut proposed that *Orrorin*'s gait was more humanlike than that of the 2- to 4-million-year-old australopithecines. If so, australopithecines would be bumped off the direct line to humans—a dramatic revision of our prehistory.

But paleoanthropologist Tim White of the University of California, Berkeley, immediately attacked this view of *Orrorin*. He said that the resolution of the CT scans was so poor that it was impossible to be certain of the pattern of bone thickness. CT scan expert James Ohman of Liverpool John Moores University in the U.K., who was not at the meeting, agreed that the published scans were taken at the wrong angle.

White further grilled Senut about the fossil analysis, asking if her team had directly measured the internal structure of the bone at a preexisting break, a more reliable means of gathering the data than CT scanning. Senut responded that colleagues had suggested doing the scans to make her case stronger and added in an interview that the bone was broken in a zigzag pattern that made it difficult to photograph. In her view, other features on the bone make it clear that *Orrorin* had walked upright—so there was no need to unglue the bone and measure it.

White accepts that *Orrorin* walked upright and so is one of the first members of the hominid family. But he says Senut has offered little evidence as to *Orrorin*'s gait. "Was it human, an *Australopithecus* pattern, or something different?" he asked. Even standard x-rays would help answer that question. As the discussion grew more heated, White called Senut's displacement of australopithecines "*une position créationniste*," because it suggests that *Orrorin*'s femur was quite modern 6 million years ago, rather than evolving in stages.

Senut declared indignantly that she is not a creationist—and then asked White to provide his own evidence about the mysterious *Ardipithecus ramidus*. A partial skeleton of that 4.4-million-year-old species was discovered by White's team, the Middle Awash Research Project, in Ethiopia from 1994 to 1996, but the bones remain unpublished.

White responded by projecting images of the *Ardipithecus* skull for the first time in public. The CT scans were startling: The skull was so crushed that the top of the vault was smashed almost to the base, forming a slab of hundreds of chalky pieces. White described it as "road kill." The reconstruction uses micro–CT scans to reassemble the specimen. "This is the most fragile hominid skeleton ever found," says White. "We are very sorry it's taken us this long to do, but I think you want the right answer instead of the quick answer." **–ANN GIBBONS**

* Prehistoric Climates, Cultures, and Societies, Paris, France, 13–16 September.

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ScienceScope

Senate Gives NIH 4% Boost

A Senate appropriations committee last week approved a bill giving the National Institutes of Health (NIH) a 2005 budget of $28.9 billion, a 4%, $1.1 billion boost over 2004's. Although modest, the raise surpasses the meager 2.6% increase approved by the House last July, in line with President Bush's request. "We're obviously pleased," says David Moore, head of governmental relations for the Association of American Medical Colleges.

The Senate committee was silent, however, on several controversial moves taken by the House, which had voted to ban future funding for two NIH psychology studies and put a 50-person limit on the number of Department of Health and Human Services staff members sent to foreign meetings. It also recommended that NIH post copies of grantees' research articles in a public archive within 6 months of publication by a journal (*Science*, 10 September, p. 1548). Any further action on these issues, and NIH's ultimate budget number, won't be settled until the two bodies negotiate a final spending bill, which could take months. **–JOCELYN KAISER**

A Cancer Genome Project?

An expert panel offering biotechnology advice to National Cancer Institute (NCI) Director Andrew von Eschenbach expects to propose an ambitious new project that would identify all major cancer genes.

The task force, led by Eric Lander of the Broad Institute in Cambridge, Massachusetts, and Lee Hartwell of the Fred Hutchinson Cancer Research Center in Seattle, Washington, gathered advice from about 50 scientists who met in focus groups from March to June. Last week, Lander told the National Cancer Advisory Board (NCAB) that the group's draft plan includes a "Human Cancer Genome Project" that would analyze tissue samples to compile a database of all genes that are mutated in at least 5% of major cancers. "It is a finite problem," he said.

A second project would pose specific challenges in detection, such as using nipple fluid to detect breast cancer. The panel also wants NCI to set up a permanent technology panel that would produce "actionable" items with timelines and budgets, Lander said. He expects to present the full report at NCAB's December meeting.

Finding money for new initiatives could be difficult. But NCAB Chair John Niederhuber, an oncologist at the University of Wisconsin, Madison, says that by presenting Congress with a "business plan," NCI "might be able to tell a very powerful story." **–JOCELYN KAISER**

Published by AAAS