

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

## No microcephaly for Hobbit

ArticleInfo		
ArticleID	:	5065
ArticleDOI	:	10.1186/gb-spotlight-20050307-01
ArticleCitationID	:	spotlight-20050307-01
ArticleSequenceNumber	:	41
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	3
ArticleHistory	:	RegistrationDate : 2005-3-7 OnlineDate : 2005-3-7
ArticleCopyright	:	BioMed Central Ltd2005
ArticleGrants	:	
ArticleContext	:	130596611

Tabitha M Powledge

Email: tam@nasw.org

---

The tiny brain of LB1, the type specimen of bones from the Indonesian island of Flores that has been at the center of a [controversy over access to samples](#), suggests that the hominid lived a fully human hunter-gatherer life and was not afflicted with microcephaly, according to a [paper published yesterday](#) (March 3) by *Science*.

First author [Dean Falk](#), of the Department of Anthropology at Florida State University, said endocast studies revealed that LB1's overall brain shape was unique, but resembles mostly *Homo erectus*. It possessed primitive features such as small size - a chimp-like 417 cubic centimeters - but also had advanced features she termed "amazing." For example, LB1 had an enlarged Brodmann's area 10 in the prefrontal cortex, which in *Homo sapiens* is thought to handle higher cognitive processes, such as taking initiative and planning. She did not speculate about whether LB1 - which has been called The Hobbit - had language. LB1 demonstrates that brain organization and wiring is more important for sophisticated behavior than size alone, she said during a teleconference yesterday.

Coauthor [Michael Morwood](#) of Australia's University of New England said the implications of the studies were "quite astounding," suggesting that *Homo floresiensis* was a fire-building, elephant-hunting toolmaker who left evidence of these activities at the site 18,000 years ago.

The tools resemble those made by early *H. sapiens* in Europe, however, leading some experts to doubt The Hobbit made them. "As a paleoanthropologist and a paleoneurologist who has worked 40 years on this, it's almost inconceivable to me that a brain that small would produce those kinds of tools," said [Ralph Holloway](#), of the Department of Anthropology at Columbia University, who nevertheless praised the paper.

Some of LB1's anatomical traits are so odd - for example, leg bones resembling australopithecines - that this species may have diverged very early in hominid evolution, Morwood suggested. This hints that hominids may have lived in this part of the world 2 or 3 million years ago, much earlier than had been thought, which would rewrite current ideas about hominid evolution, he said.

Morwood angrily criticized the state of the bones returned to the Jakarta Centre for Archaeology [last week](#) from the lab of Teuku Jacob, professor emeritus at Gadjah Mada University in Java. Jacob had taken them away last November, shortly after *Nature* published [details of the find](#). Morwood, speaking at the teleconference from Jakarta, termed the condition of some bones "absolutely appalling," and charged that some had been almost destroyed. He said the small sample taken out of the country by [Jean-Jacques Hublin](#), of the Max Planck Institute for Evolutionary Anthropology in Leipzig, came from a significant bone, a charge Hublin denied. Hublin said in an E-mail to *The Scientist* that the sample "was a naturally fragmented little piece of bone and not taken from any more or less complete specimen." Hublin praised the careful handling given the many *H. erectus* fossils in Jacob's lab, which he has studied, and said, "I can hardly believe that he would allow any bad treatment of a specimen."

Not all paleoanthropologists agree that the Flores bones are morphologically unique enough to define a new species. "I remain totally unconvinced about the claim for a new species," [Phillip Tobias](#), director of the Sterkfontein Research Unit in Johannesburg, told *The Scientist* via E-mail.

And the endocast studies are not likely to settle the microcephaly question. Falk's team compared LB1 to an example of true microcephaly, as the most common form is known. But critics have never argued that LB1 exemplified this specific form of microcephaly. "In my experience, severe congenital microcephaly is quite heterogeneous, with variable skull and brain shapes," William Dobyys, a neurogeneticist at the University of Chicago, told *The Scientist*. In addition to environmental causes, he estimated that at least 100 genes could be involved. "They could be correct, but if they're correct, it's random," he said. Holloway said, "Using samples of one always makes me uncomfortable in a statistical analysis."

## References

1. T.M. Powledge, "Researchers wrangle over access to *Homo floresiensis*," *The Scientist*, February 28, 2005., [<http://www.the-scientist.com/2005/2/28/14/1>]
2. D. Falk et al, "The brain of LB1, *Homo floresiensis*," *Science*, published online March 3, 2005., [<http://www.sciencemag.org/cgi/content/abstract/1109727>]
3. Dean Falk, [<http://www.anthro.fsu.edu/people/faculty/falk.html>]
4. Mike Morwood, [<http://www.une.edu.au/Arch/ArchStaff.html#MM>]
5. Ralph L. Holloway, [<http://www.columbia.edu/~rlh2/>]
6. T.M. Powledge, "Flores hominid bones returned," *The Scientist*, February 28, 2005. , [<http://www.the-scientist.com/news/20050228/01>]
7. P. Brown et al., "A new small-bodied hominin from the Late Pleistocene of Flores, Indonesia," *Nature*, 431:1055-61, October 28, 2004.
8. Jean-Jacque Hublin, [<http://www.eva.mpg.de/evolution/staff/hublin/>]
9. Phillip Tobias, [<http://www.roundtable.wits.ac.za/tobias.htm>]
10. William B. Dobyys, [<http://www.uchospitals.edu/physicians/william-dobyys.php>]