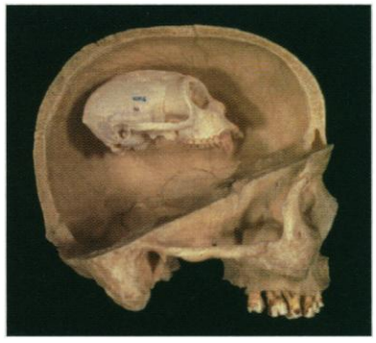
Neandertals Left Speechless?

Could Neandertals have chatted about the weather or the mammoth that got away? Last year, scientists at Duke University proposed that these heavyset hominids, who vanished about 35,000 years ago, might have been able to talk like modern humans, based on the large size of a pair of bony passages that channeled nerves to their tongues. But a new study suggests that the size of so-called hypoglossal canals says little, if anything, about speech capability.

David DeGusta, a graduate student in the Laboratory for Human Evolutionary Studies at the University of California, Berkeley, and colleagues did cross-section measurements of the hypoglossal canals in skulls of 75 nonhuman primates, four extinct hominids called australopithecines, and 104 modern humans.



This monkey skull has larger hypoglossal canals than does the human skull.

They found that canal size varied widely in the humans, from 4.4 to 36.5 mm^2. When the researchers measured the canals of the 3.2-million-year-old australopithecines, a hominid to which few anthropologists would attribute the gift of speech, they found that one had an area of 17 mm^2, decidedly above the average for modern humans. The nonhuman primates also undermined the theory: Canals in 40 of these specimens were within the human range "both absolutely and after correction for oral cavity size," the authors report in the 19 February *Proceedings of the National Academy of Sciences*. "Despite all the sound and fury," says DeGusta, "the size of the hypoglossal canal signifies nothing."

The Duke team demurs. DeGusta's analysis "amounts to saying" that so long as there is any overlap between species, there's nothing significant about the mean differences, says Duke anthropologist Richard Kay. He draws an analogy with brain size comparisons. Human cranial capacity ranges from 800 to 1250 cubic centimeters, a range that encompasses the smaller-brained *Homo erectus*. "But no one argues that there's not a significant difference" in mental ability between the two hominids.

Anatomist Jeffrey Laitman of Mount Sinai Medical Center in New York says he finds the hypoglossal canal theory "tantalizing," but that the new study raises a cautionary note, highlighting risks of drawing conclusions from "a relatively limited sample [and] a relatively limited part of the body."

First close-ups of Eros.

Eros Spared Rough-and-Tumble Life

The asteroid Eros appears to have avoided the pummeling that turned a sister asteroid into a flying pile of rubble, according to an analysis released last week by the Applied Physics Laboratory in Laurel, Maryland. The finding, which comes from the NEAR spacecraft's flirtatious flyby of Eros on 23 December, gives mission controllers a better idea of what to expect when NEAR (for Near Earth Asteroid Rendezvous) returns for a closer tête-à-tête next year.

Planetary scientists got a look-see at Eros after a failed burn of NEAR's rocket forced the spacecraft to sweep by the asteroid rather than orbit it as planned. Passing within 3830 kilometers of the 40-kilometer-long, oblong body, NEAR felt the gentle tug of its feeble gravity, which subtly shifted the pitch of the spacecraft's radio signal. Inferring Eros's mass from the radio's Doppler shift and its volume from images of the slowly spinning asteroid, scientists calculated Eros's density at about 2.3 grams per cubic centimeter, according to team member Donald Yeomans of the Jet Propulsion Laboratory in Pasadena, California.

The new density "puts Eros right on the borderline" between an intact rock and a disrupted one, says Yeomans, "but it doesn't make it a rubble pile like Mathilde"—the 66-kilometer asteroid NEAR flew by 20 months ago.

Typhus Reemerges as Plague Suspect

For centuries scholars have debated the cause of the Great Plague of Athens, which devastated the war-torn city in 430 B.C. An intriguing hypothesis—that plague victims were felled by the Ebola virus—has gained favor in the last few years (*Science*, 14 June 1996, p. 1591). But at a forum last month at the University of Maryland, College Park, an old contender surged to the fore: typhus.

Every year, academics and physicians gather at the university to diagnose a historical figure. This year, the subject was Pericles, anonymously described to conferees as a 65-year-old man who died after 11 days of an illness marked by bouts of high fever, chest pain, vomiting, diarrhea, fetid breath, and a bumpy red rash. Forum host David Durack, an infectious disease specialist at Becton Dickinson Biosciences in Baltimore, contended that the symptoms best fit typhus, spread by the feces of infected body lice. Typhus, however, would not explain the diarrhea, so Durack proposed an additional illness—perhaps Lassa fever—to loosen the bowels. Durack and his co-host, classicist Robert Littman of the University of Hawaii, Manoa, rejected the Ebola theory, arguing that the hemorrhaging the virus causes "would not have escaped" the notice of plague chronicler Thucydides.

The chief promoter of the Ebola hypothesis, San Diego–based Navy physician Patrick Olson, is sticking to his guns. All of Pericles's symptoms fit Ebola, in which visible bleeding is not all that common, he says. Olson is leading a drive to settle the ancient dispute by retrieving genetic material from plague-era corpses discovered in an Athens cemetery (*Science*, 22 November 1996, p. 1307). But that enterprise is currently on hold, stalled by Greek officialdom.

Scientists Not So Special

"... all professions look bad in the movies ... why expect scientists to be treated differently?"

—Author Michael Crichton, speaking at the AAAS annual meeting last month in Anaheim, CA.

CREDITS: (TOP) DAVID DEGUSTA; (BOTTOM) NEAR