of Britain's Institute of Animal Health in Compton, Berkshire. But he cautions that the need for fast fixes "should not be at the expense of basic research." Bostock points out that the Weissmann report emphasizes that "we know very little about these diseases."

This program has been a long time in the making. The European Parliament has called several times for a pan-European research program to tackle the problem of BSE, which has been confirmed in more than 160,000 U.K. cattle, but in no more than a few hundred cattle in other European countries. And in early October, research ministers from the 15 EU member states agreed to go ahead. They even agreed on the size of the program, but they fell out over whether the money should come from the commission's internal budget or from the EU's 1994 to '98 research program, known as Framework IV. A compromise was reached last week in which $20 million would come out of current research funds and the remainder from a separate fund that can be added to this year's Framework budget in special circumstances. Research ministers will gather again on 5 December to give the final go-ahead to the project, and meanwhile finance ministers will be asked to approve the use of the special funds.

Once the program is up and running, the funds will be awarded on a competitive basis, with the division of funds among the five priority areas depending on what projects are approved, rather than an equal split. Aguzzi expects no shortage of proposals. He says that as a referee of grant proposals submitted to the Framework program, he sees many good projects turned away.

–Claire O'Brien

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PALEOANTHROPOLOGY

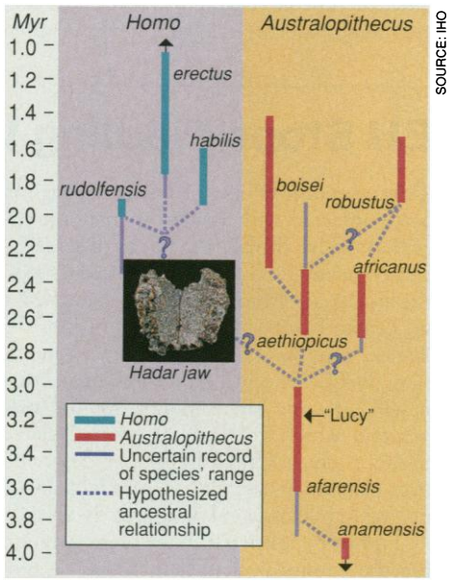
A Rare Glimpse of an Early Human Face

Sometime between 2 million and 3 million years ago on the grassy plains of Africa, the first members of our lineage were born—but they were not alone. Several different types of early humans roamed the landscape at this remarkable time, including three different species of our own genus, *Homo*, as well as several species of their apelike ancestors, the australopithecines. Yet, only a few fragments of bones and teeth illuminate the evolution of *Homo* during this critical time, making it difficult to pick out our line of descent from the bushy hominid family tree. Now, researchers have an important new fossil that will help fill in this gap.

This week, an international team of American, Ethiopian, and Israeli scientists, led by paleoanthropologists William H. Kimbel and Donald C. Johanson and geochronologist Robert C. Walter of the Institute of Human Origins in Berkeley, California, announced a *Homo* jaw that is reliably dated by radiometric techniques at about 2.33 million years old. A few other *Homo* fossils may be this ancient, but all have uncertainties in their dating or identity, making this upper jaw or maxilla "the oldest securely dated *Homo*," says University of Liverpool paleoanthropologist Bernard Wood. The new jaw, which will be published in the December issue of the *Journal of Human Evolution*, offers a tantalizing glimpse of the mysterious face of early *Homo* and gives anthropologists some hard evidence that the genus was indeed on the scene in Africa when most scenarios of human evolution predict that it should be. "If you have a hypothetical lineage leading to humans, it's a good idea to have empirical evidence supporting it," says Pennsylvania State University paleoanthropologist Alan Walker. And although this single specimen isn't enough to determine which species of *Homo* came first, it may help determine which anatomical traits were inherited from an australopithecine ancestor and which ones arose in *Homo* itself, says Kimbel.

The jaw was found in November 1994 on a barren slope at Hadar in northern Ethiopia, only 5 kilometers from the site where Johanson and colleagues discovered the famous fossil "Lucy," the most complete skeleton of the small-brained, big-jawed *Australopithecus afarensis* that lived 3.0 million to 3.8 million years ago. But when Kimbel fit together the two halves of the new jaw, he knew right away that this was no australopithecine: "It's *Homo*. There's no question about it."

For example, the new maxilla has a broad dental arch and a short, flat snout like those of younger *Homo*, rather than the projecting face and narrow palate of an australopithecine. Although one of the 10 teeth found with the jaw, a premolar, is broad like that of an australopithecine, another tooth—a first molar—is elongated and resembles that of *H. habilis*, a species that appeared about 400,000 years after the new specimen. This and other features lead Kimbel to say that the maxilla looks like *H. habilis*, but he cautions that more fossils are needed before the specimen can be assigned to a particular species. Indeed, three *Homo* species have been recognized close to this time: *H. habilis*, the more modern-looking *H. erectus* (whose African form is considered by some to be a separate species, *H. ergaster*), and *H. rudolfensis*, a species that most resembles the australopithecines and lately has been the leading contender for the first *Homo*. If the ancient maxilla could be classified, it would help sort out which species gave rise to the others—and reveal which features arose first in our genus and which were inherited from the australopithecines.



SOURCE: IHO

New relation. Upper jaw from Hadar, Ethiopia, helps fill in a crucial period in human evolution.

Another clue to the new fossil's identity might be an assemblage of 34 Oldowan stone tools found near the jawbone. At other sites, such tools have been considered the handiwork of *H. habilis*, but for now the team can't rule out the idea that another species made them.

Although questions remain about the jaw's precise identity, there is little doubt about its age. Using what most paleontologists agree is a reliable technique, the single crystal laser fusion method of potassium-argon dating, Walter and colleagues at the University of Toronto dated volcanic rock from the site at 2.33 million years ± 70,000 years.

All this gives the new specimen claim to the status of earliest *Homo*, because the other candidate fossils have problems in either their dating or their identity. For example, a mandible from Malawi is "a dead ringer" for *H. rudolfensis*, says Wood. But the date of 2.5 million to 2.1 million years is based only on other fauna, not on radiometric methods. A partial temporal bone from central Kenya is dated securely at 2.45 million years, but many researchers aren't sure that it is *Homo*.

To learn more about the species represented by the new jaw, and perhaps pin down its australopithecine ancestor, the team plans to return to Hadar next fall for more fossils. Notes Wood: "The important thing about this is we've started to discover fossiliferous strata of the right sort of age. Now that they've found one hominid, my guess is they will find more specimens. The main message is, watch this space."

–Ann Gibbons