

# 40 Percent of Lucy After 3 Million Years

The Americans call her Lucy; the Ethiopians, Denkenesh. She stands scarcely a yard in height and she's been dead for more than three million years, but researchers with the Afar Research Expedition are more than happy with the 40 percent that remains of what one member calls "the earliest, most complete hominid skeleton ever found in the world."

Lucy consists of a few skull parts; a mandible with some teeth; most of the right arm; some hand, wrist and ankle bones; ribs; parts of a backbone and a half-pelvis, together with the sacrum that connects the pelvis to the spine. She was discovered at the Hadar site in northeastern Ethiopia, a paleontologist's paradise in which, two months ago, the same team found some hominid jaw bones and teeth possibly dating back as far as four million years (SN: 11/2/74, p. 276). Lucy's remains were found scattered over 20 square yards in a sandstone layer that has been dated at between 3.01 and 3.25 million years.

Despite their enthusiasm over their find, the Afar researchers are being cautious, mindful of the controversy that seems to attend most discoveries from the dawn of human time. "For the moment," reads a carefully prepared statement, "a scientific identification of this specimen's affinities has not been attempted. We prefer to reserve judgment until all parts of the skeleton can be studied and compared to other specimens."

In the mists of antiquity, the line between man and "near man" is indistinct. It is not even certain that it is a matter of discovery, rather than simply of agreement. According to Afar expedition co-leader D. Carl Johanson of Case Western Reserve University in Cleveland, "At the moment there is really no consensus." Genus *Australopithecus*, for example, is considered a near man, while genus *Homo* is the category reserved for "true man." Yet, says Johanson, it is still likely that he, Richard Leakey and others "are going to have to get together and work up a definition of what *Homo* really is." Leakey, with his father, the late Louis S. B. Leakey, has found remains more than 2.5 million years old in Kenya and Tanzania.

One problem is that the Leakeys, whose finds are probably the most famous in their field, have maintained that the only way to be sure of a specimen's genus is to examine its skull. Although the Leakeys have never found

remains as complete as Lucy's, the Afar group, which has unearthed parts of 10 different hominids (man or man-like creatures) from five different periods in 10 sites, has yet to find a complete cranium. Richard Leakey has visited the Afar site—ironically he left just one day before Lucy was discovered by Johanson and one of his students, Thomas Gray—and is said to have reached an agreement with Johanson and Afar co-leader Maurice Taieb of the French National Center for Scientific Research on the dating and genus (*Homo*) of the jawbone finds from two months ago. The impressive completeness of Lucy's remains, however, despite—or because of—the lack of a complete cranium, reopens the possibility of dispute. Thus Johanson announced plans to visit Leakey in Nairobi to discuss the find's implications before returning to the United States.

For all its lack (so far) of complete skulls, the Hadar site is one of the most exciting known for the study of early

man. In addition, its sandstone strata have yielded the fossilized remains of numerous other creatures, including the forerunners of pigs, elephants and gazelles, as well as apparently amphibious and aquatic creatures such as early crocodiles and crabs. "The geological setting and the animals living with the [site no.] 288 specimen [Lucy]," said the team's statement, "suggest that the environment was related to a beach of a vast lake that existed in the Afar [region] three million years ago."

Because finds from Kenya, Tanzania and Ethiopia have been increasingly older with their distance to the north, the Afar researchers have even tentatively offered the outside possibility that the real "cradle of humanity," if there is one, may lie not in Africa at all, but across the Red Sea in the Middle East. The idea of an isolatable single source, however, may turn out to be simplistic, much as has that of a single "missing link" between man and ape. The question looms ever larger. □

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## A step closer to a male 'pill'

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One man's bone disease has led to another man's contraception in an investigation by two Australian biochemists. Michael and Maxine Briggs of Alfred Hospital in Melbourne report in the Dec. 13 *NATURE* the successful control of sperm production with a combination of synthetic hormones used to treat porous bone disease.

The husband and wife team, studying two men being treated for osteoporosis with synthetic hormones, found them to be temporarily infertile. They decided to see if the hormone combination would exert a similar contraceptive effect on healthy adult males. And it worked, without significant side effects.

They administered a synthetic androgen called methyltestosterone and a synthetic estrogen called ethynylestradiol twice daily to five married men. By the 12th week, sperm production had stopped in four of them, and by the 18th week, it stopped in the fifth. Libido and potency were about normal. Three men reported mild nausea, but this could have been partly psychological since some of the nausea occurred during the first two weeks of the test when a placebo was being administered. The team reports no changes in skin, hair, breasts or urination. The contraceptive effects lasted

15 weeks after the men stopped taking the hormones, and normal sperm production was found after 35 to 40 weeks without treatment.

The Briggs team recommends that these drugs, already on the market, could be used for male contraception, and should be further studied so that doses and administration regimes can be worked out. Commenting on the study, Gabriel Bialy, the acting chief of the contraceptive development branch within the National Institutes of Health, says the idea "is perfectly all right and makes scientific sense, but I'm not sure it's very practical." Using a male hormone to offset the effects of the estradiol is necessary (without this, Bialy says, "the man is not a very good male"), but methyltestosterone has a short half-life and is "not a very good androgen."

NIH currently is sponsoring research on both physical approaches to male contraception (such as sperm duct valves) and chemical approaches (such as administering hormones). Research on sperm duct valves turned out to be more complicated than initially predicted, Bialy says, so "speaking personally, I would bet some type of drug approach" would be available sooner. But Bialy agrees that further study is needed on the Briggs' approach. □