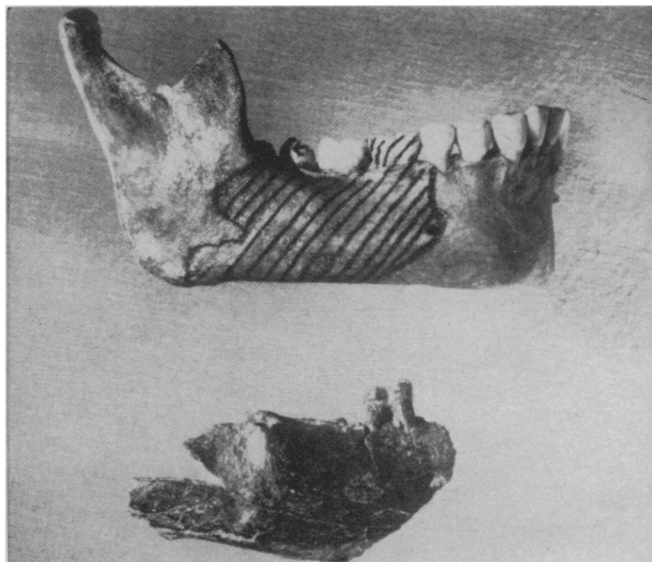


## More complete view of man's ancestors

**A fossil from Kenya extends the line of *Australopithecus* back 5.5 million years**



Harvard

*Lothagam find (below) and jawbone of modern man.*

Man and ape share a common ancestry. That idea is no longer questioned. But our picture of the nature of a common ancestor, the point in evolution where the hominid line diverged from the pongid or ape line, and of the course of evolution of man-like life forms is cloudy.

New discoveries, however, have consistently pushed back scientific estimates of when man's ancestors originated. Almost 50 years ago, the skull of an infant primate was discovered in South Africa and given the name *Australopithecus*. The skull was found in deposits of ages of less than a million years. Since then, numerous other *Australopithecus* specimens have been unearthed. Somewhat later, Dr. Louis S. B. Leakey discovered in Olduvai Gorge in Tanzania a specimen that some experts classify as *Australopithecus*, and others maintain is instead a *Paranthropus*, another form of early hominid, that was 1.75 million years old. He originally called it *Zinjanthropus*, or nut-cracker man. An arm bone fragment from Kanapoi near the southern end of Lake Rudolf in northern Kenya dated in 1967 at 2.5 million years old has recently been found to be actually more than 4 million years in age.

But there is still a large gap between these forms and the man-ape *Ramapithecus*, the oldest form that most authorities admit to the hominid line. *Ramapithecus* is 14 million years old.

On a 1967 expedition to the Lake Rudolf region, a team led by Prof. Bryan Patterson, Agassiz Professor of Vertebrate Paleontology at Harvard University, discovered a jawbone fragment from the oldest specimen of the *Australopithecus* line yet recovered. After careful analysis of the specimen and dating of the sediments at Lothagam Hill where it was found, the

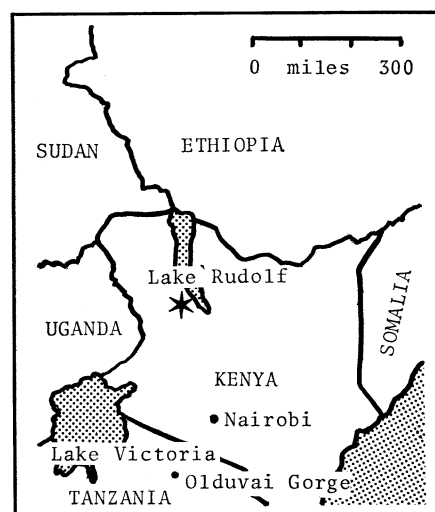
scientists announced last week that the jaw fragment is about 5.5 million years old.

This age, though significantly older than previous finds, "is not unexpected now" says Dr. T. Dale Stewart, a physical anthropologist at the Smithsonian Institution. Scientists have steadily been pushing back the ages of *Australopithecus* ever since the first specimen was discovered.

The specimen, found by Arnold D. Lewis, head of the preparation laboratory of Harvard's Museum of Comparative Zoology, which sponsored the expedition, is part of the right half of a lower jaw. Prof. Patterson believes that the jaw represents a species close to *Australopithecus africanus*, of which numerous specimens are known from areas in South Africa.

The bone belonged to a being that, says Prof. Patterson, "we would recognize as closely related to ourselves if we were to see it alive today." The age of locations where *A. africanus* has been found is not precisely known, but it now appears that they were older than the Olduvai succession. If so, the researchers say, *A. africanus* could have been an ancestor of the form that appears at the base of that succession, *Homo habilis*. The other hominid of that period, *Paranthropus* (late Pliocene-early Pleistocene), had a different gait from the lineage that ultimately led to modern man and is now known to have had a long history independent of the *Australopithecus* line. The new specimen, says Dr. Patterson, appears to be distinct from *Paranthropus*, suggesting that the two lineages may have diverged in the early Pliocene, which began 13 million years ago.

Prof. Patterson tentatively identifies the jawbone fragment as a female's, as the jaw appears slightly smaller than in other *Australopithecus* finds. The



Robert Trotter

*Lothagam site is near Lake Rudolf.*

fragment's single tooth is well worn, indicating, he says, a mature individual and an abrasive diet. The creature was probably omnivorous.

The find is the oldest member of the hominoid family yet found in deposits of Pliocene-Pleistocene age. It was the Pleistocene epoch that saw the advances and retreats of the glacial ice sheets. The immediately preceding epoch, the Pliocene, began about 12 million years ago. It is now evident, the paleontologists say, that the human lineage was evolving throughout this stretch of time and that the beginnings of the hominid line occurred still earlier.

The Lake Rudolf area, says Dr. Stewart, is the only place in Africa where such accurate dating is possible, because of volcanic deposits that permit potassium-argon dating. The area also yields many mammalian fossils, particularly elephants, which were evolving rapidly at that time and provide relatively accurate age indications. □