

ANTHROPOLOGY

Past, Modern Man Linked

Neanderthal man may have built structures, indicating that he was far more advanced than formerly believed and implying that he may have evolved into Cromagnon man.

► A POSSIBLE LINK between Neanderthal man and modern man has been found deep in Russian soil.

Evidence uncovered at the Molodova site in the Ukraine implies that Neanderthal man evolved into anatomically modern man instead of disappearing off the face of the earth, Dr. Richard G. Klein of the University of Chicago told anthropologists attending their 64th annual meeting in Denver, Colo.

The evidence is a circle of mammoth animal bones stretching over an eight-by-ten-meter area. Some 27,000 pieces of flint date the site to the time of Neanderthal man, some 50,000 to 70,000 years ago.

Directly above this site are similar bone circles dating from a later age, less than 35,000 years ago, when man had already made his appearance. Post holes in these later sites indicate that modern or Cromagnon man would cover a large area, 44 yards in diameter with one single structure.

No post holes can be found at the Neanderthal level, said Dr. Klein. However, the bone circles are like those of later date. It is logical to assume that the early "man" also built structures. If he did, he was far more advanced than scientists have believed, Dr. Klein stated.

No evidence that Neanderthals built struc-

tures has been found elsewhere. The Molodova site, for the first time, offers more than stone tools with which to understand the nature of these man-like animals.

Russian scientists have constructed a "fantiful" duplication of the structure, said the anthropologist. They believe it was semi-circular, constructed of wood and bone, covered by skins.

Dr. Klein will make a second visit to the site this winter. His first visit a year ago provided him with material for a doctoral thesis.

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PALEONTOLOGY

Oldest Great Ape Jaws Found in Sahara Desert

► FOSSIL FRAGMENTS of the jaws and limbs of the "oldest undoubted great ape" and a gibbon-like creature, both about 33 million years old, have been uncovered at the eastern edge of the Sahara Desert in Egypt.

The bone fragments, which included the first relatively complete upper jaws of an ancient ape, will shed new light on ancestors of monkeys, apes and men, said Dr. Elwyn L. Simons of Yale University's Peabody Museum of Natural History.

Fossilized upper jaws are more difficult to find than lower jaws, mainly because they are less compactly constructed and less resistant to damage and destruction.

The bones belonged to two primates recently named by Dr. Simons—*Aegyptopithecus*, an ape, and *Aelopithecus*, a smaller animal somewhat like a gibbon. These animals form a connecting link between the more modern Miocene monkeys and apes, which lived about 25 million years ago, and the primitive primates of the early Tertiary period, about 70 million years ago.

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AGRICULTURE

Corn Pollen in Swamp Hints Early Agriculture

► AGRICULTURE may have come to North America's East Coast earlier than was believed, judging by five fossil maize-pollen grains found in southern Virginia, which date from about 235 B.C.

The grains indicate that there may have been a cleared area in Virginia's Dismal Swamp where maize, or Indian corn, was actually cultivated. They were found about 20 inches below the surface, just east of Lake Drummond, which is in the swamp.

Although Dismal Swamp seems like an unlikely spot for a cornfield (almost six feet of forest peat cover the soil at the site

of the core sample), the concentration of grains in the area seems to rule out the possibility that they were carried there at random by the wind, reported Dr. Donald R. Whitehead of the department of biology, Williams College, Williamstown, Mass., in *Science*, 150:881, 1965. No maize pollen at all was found in a sample taken from Lake Drummond itself, about 1.2 miles away.

In addition to the pollen, traces of several swamp shrubs were found, suggesting that at one time there was a small clearing that was later overgrown by the shrubbery.

If the dating of the grains is correct, they existed during the Early Woodland Adena culture in the area, which extended from 1000 B.C. to about 200 A.D. This is the oldest evidence of maize in the Middle Atlantic region. However, this is not proof that humans made the clearing.

The clearing could have been caused by spontaneous burning of the peat layer, pointed out Dr. Whitehead. The swamp forest does not regenerate such burned-out areas immediately, and they develop into "lights," in which smaller, shrubby vegetation dominates the area.

Why the people of the time would choose to farm a forested swamp is a mystery. Perhaps the clearing was caused by a natural fire and then farmed simply because it was available and convenient.

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PALEONTOLOGY

Advanced Animals Lived Earlier Than Believed

► SMALL CREATURES similar to worms and clams may have lived 720 million years ago, 120 million years earlier than scientists believed such animals existed on earth.

The fossil remains of small clam-like animals were well preserved, with two interlocking paper-thin shells ridged with growth lines, reported their discoverer, Dr. Andrew H. McNair, Dartmouth College, Hanover, N.H.

The fossils were found in ancient rocks that have been little disturbed by geological upheavals through the ages, he reported to the 78th annual meeting of the Geological Society of America in Kansas City, Mo. The rocks are in the Shaler Mountains on Victoria Island, north of the Canadian mainland.

This discovery may constitute a breakthrough in man's knowledge of life during the earliest geologic period.

Several fossilized tracks and trails made by burrowing worm-like animals were also found in the ancient sedimentary rocks, as well as small straight tubes and curved spines of an unknown species of animal.

Scientists formerly thought that advanced forms of animals with specialized organs and tissues evolved only about 600 million years ago when a sudden major change in the earth's physical environment may have taken place, creating more atmospheric oxygen available for animal life.

The expedition undertaken last summer was supported by the National Science Foundation and the Canadian Department of Mines and Technical Survey.

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Yale University

AELOPITHECUS—Dr. Elwyn L. Simons, associate professor of geology at Yale University, studies the jawbone of *Aelopithecus*, one of two 33-million-year-old primates which he discovered, a connecting link between the Miocene monkeys and apes and the primitive primates of the early Tertiary period.