

ANTHROPOLOGY

Neandertal Man in Africa

Fragments of human fossils discovered in a cave in North Africa prove that this extinct race was not confined to Europe and Asia, as previously believed.

See Front Cover

➤ NEANDERTAL hunters, the low-brows of the Old Stone Age, prowled North Africa while Ice Age glaciers held most of northern Europe in their cold grip. Evidence of the presence of Neandertal man in Africa has been discovered in a cave near the north-western corner of that continent by an expedition under the direction of Dr. Hugh Hencken, director of the American School of Prehistoric Research at Cambridge, Mass.

The cave is one of a group known as the Caves of Hercules, because of their proximity to the traditional Pillars of Hercules, on the Strait of Gibraltar. Human fossils were limited to several teeth and part of the upper jaw of a Neandertaler. These, with similar fragments found at Rabat in French Morocco by French scientists, constitute the first proof that Neandertal man ever lived in Africa. Previous finds of this extinct race have been confined to Europe and Asia.

Another race of prehistoric hunters who occupied the cave during the Ice Age have been given the name Aterians. With beautifully flaked weapons of flint they hunted such game as elephant, rhinoceros and giraffe, now wholly unknown in this part of Africa. Reason for their presence some 75,000 years ago is that while the glaciers occupied much of Europe the climate of North Africa was much more humid than it now is, so that vegetation capable of supporting such big game could grow in what eventually became semi-arid and even wholly desert land.

Neandertalers and Aterians were not the first human occupants of the land. Dr. Hencken and his colleagues found crude stone handtools indicating the presence of a primitive human population as much as 150,000 years ago, during a warm interlude in the Ice Age when sea level was 60 feet higher than it now is. No skeletal remains have been found of these earlier peoples.

The Aterians were eventually displaced by a new invasion from the East, some 5,000 or 6,000 years ago. These

newcomers were no longer hunters, but a farming and pastoral people, believed to be the ancestors of the Berbers now found in the area.

On the cover of this week's SCIENCE NEWS LETTER are shown Prof. Carle-

BIOCHEMISTRY

Steps in Photosynthesis

➤ ALL chemical steps in photosynthesis, fundamental food-making process in green plants, are now believed to be known, thanks to the use of radioactive carbon as a tracer element, Dr. Melvin Calvin, University of California chemist, reported in a lecture at Western Reserve University in Cleveland.

Working with Dr. Andrew Benson, Dr. Calvin recently identified the last two intermediate compounds prior to sugar formation as phosphoglyceric acid

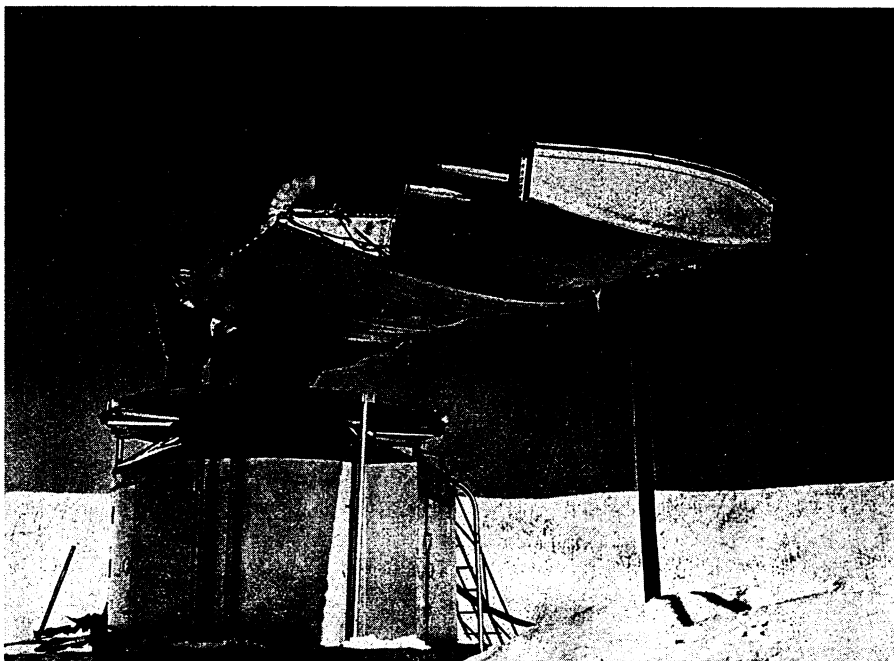
ton S. Coon of Harvard, a member of the expedition, and his Arab assistant, Mustapha. They are digging for remains of Neolithic man in one of the caves.

The American School of Prehistoric Research occupies quarters on the Harvard University campus, and its director, Dr. Hencken, is also curator of European archaeology in the University. The work of the School in Europe, Asia and Africa has been supported in part by grants from the Viking Fund and from the American Philosophical Society.

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and triose phosphate. The latter is itself a simple sugar.

Last year, the Berkeley scientists demonstrated that intermediate products in photosynthesis include amino acids, which are building-blocks of proteins; other organic acids such as succinic, fumaric and malic; and neutral sugars. Compounds unidentifiable at that time turned out to be the two reported by Dr. Calvin now. He said that the biggest problem now confronting scientists in



HELICOPTER JETS—Jet propulsion for helicopters uses small jet engines on the rotor blades that give lift and forward motion to the aircraft. They are being tested for the U. S. Air Force by General Electric engineers at Schenectady. The first Air Force rotary-wing aircraft to use a jet power plant is the McDonnell Little Henry, flight-tested in May 1947.

this field is the explanation of how light is utilized by plants to bring about known transformations. One possibility is that light and chlorophyll set free hydrogen atoms from water in the plant. Then a catalyst, such as a co-enzyme, does the job of combination.

He stated that some of the intermediates in photosynthesis are identical with compounds formed by the same plants, but so far it has been proven impossible to distinguish early intermediates in photosynthesis from fermentation products. But more advanced intermediates can be identified by the positions of radioactive carbon atoms in their molecules, since such carbon atoms reach po-

sitions in these molecules that are impossible to reach by fermentation.

The experiments were performed both in darkness and in light. Pre-illuminated plants exposed to radio carbon in darkness were able to form the same intermediate compounds as plants given 30-second exposure to radioactive carbon in light. Dr. Calvin said that this research further confirms the previous theory that photosynthesis is the reverse of respiration in plants and animals. Intermediates formed in photosynthesis are the same as those formed when animals break down sugars to form carbon dioxide and water but in reverse order.

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the extension of professional knowledge by fellowships, demonstrations and expert advice to governments, through the extension of public knowledge concerning the disease and its method of spread; by the promotion of the eradication of tuberculosis in cattle and particularly, now, by the extension of the use of BCG vaccine.

"The commission has not felt it prudent to wait for the WHO in order to extend the use of BCG vaccine in areas in which tuberculosis is epidemic. It is therefore sending teams to India, at the request of that government, to demonstrate the technique of vaccination in the hope of extending its use there on a wide basis. At the same time it is providing to the International Chil-

PUBLIC HEALTH

WHO Contributor to Peace

U. S. apparently to play only observer's role when full-scale activities begin with the meeting in June of the World Health Assembly.

➤ AN important aid to world peace in which the United States seems destined to play only an observer's role is the forthcoming World Health Assembly, scheduled to meet in Geneva, Switzerland, in June of this year.

The World Health Assembly will mark the beginning of full-scale activity of the World Health Organization. The Soviet Union has become the 24th of the necessary 26 members of the United Nations to join WHO, and two more seem assured. The United States will not be one of them unless the Rules Committee of the House of Representatives reverses its recent action in tabling indefinitely the bill that would enable us to join WHO.

The World Health Assembly will be the first in a series of annual assemblies "which can be an important focus of the world's hope of peace and life," Dr. H. van Zile Hyde, alternate U. S. representative to WHO's interim commission, declared in a recent State Department Bulletin.

The International Health Conference which laid the plans for WHO and the successful course of its interim commission, he said, "have confirmed the historical fact that in the field of health nations can meet together in a spirit of friendship and understanding, and arrive at firm decisions which are carried through to an effective conclusion for the betterment of mankind."

Examples of accomplishments ex-

pected through WHO, and already begun under its interim commission, are found in malaria control, tuberculosis control and improvement of the mental and physical health of the world's children who are its future citizens and potential war or peace makers.

Malaria, which affects the world's food supply as well as its health, can be controlled "even to the point of eradication," Dr. Hyde declared. "What is required is the extension of knowledge and provision of leadership to affected areas. In Greece, for example, where through the centuries malaria has annually attacked 1 to 3 millions of a population of 7.5 million, the disease has been reduced to a minor problem—by Greeks—under the leadership of a handful of experts sent into the country by UNRRA and maintained there now by WHO's interim commission."

On tuberculosis Dr. Hyde declared that, internationally, the final conquest of this great plague is "in the hands of the United Nations itself and those of its specialized agencies concerned with world economic health. Tuberculosis is a disease that can be suppressed by a planned attack. The low death rate of 32 per 100,000 in Denmark, as contrasted with rates of 200 to 400 per 100,000 in several other areas of Europe, is a direct result of such attack.

"The interim commission has recognized that the WHO can contribute significantly towards its control through

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