

ARCHAEOLOGY

11,000-Year-Old Weapons

Mexican finds complete chain linking ancient man with his weapons and with the now long extinct animals he hunted with them.

► THE WEAPONS with which the earliest Mexican, 11,000-year-old Tepexpan Man, hunted elephants now long extinct have just been found in Mexico.

Two arrow heads, a knife, and a scraper chipped from green volcanic glass by the hand of this ancestor of American Indians were found buried with the fossil bones of a mammoth close to where the bones of Tepexpan Man himself were discovered about five years ago.

Significance of the new discovery, according to Dr. Helmut de Terra, discoverer of Tepexpan Man, is that now for the first time at the same site, man-made tools have been found with extinct elephants and also human bones. Thus the chain is complete linking ancient man with his weapons and the long extinct animals he hunted.

The important little green obsidian weapons and mammoth bones were dug up in the dried bed of the lake on which

Mexico City was built. Many other fossil elephant bones have been "mined" at this same site. Evidently many centuries ago a herd of the animals was driven or charged into the lake and became stuck in the mud and, thus trapped, died or were killed there.

Tepexpan Man has been judged to be over 11,000 years old by the radiocarbon dating of the peat layers in which the bones were found. This provides an approximate date for the mammoth bones and weapons found in the same geological location.

The new finds were made by a party of scientists representing the National Museum of Mexico and the University of Denver. Members of the party were: Prof. Pablo Martinez del Rio of the University of Mexico, Dr. Manuel Maldonado-Koerdel and Luis Aveleyra Arroyo de Anda from Mexico's Museum and Dr. Marie Louise Wormington of the University of Denver.

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PHYSIOLOGY

Live Animals Rocketed

► LIVING ANIMALS have, for the first time, been studied in a weightless condition.

This was revealed at a session on "space medicine" of the Aero Medical Association in Washington.

Drs. J. P. Henry and E. R. Ballinger, of the Aero Medical Laboratory at Wright-Patterson Field, Dayton, Ohio, told how five primates, probably monkeys, under anesthesia fell freely in V-2 and Aerobee rockets, achieving the weightless state for periods of from two to three minutes.

Their reactions while free from the force of gravity were telemetered down to the ground. It was found that, in this short period, no significant change took place in the heart and blood vessel system. If the findings can be applied to man, there is some hope that the gravity-free state he will find in space travel will not be as harmful as was heretofore believed.

The two doctors, who did the work along with Drs. P. J. Maher and D. Simons, also studied photographic records of mice who had been through two to three minutes of subgravity.

"As long as foothold was available to the animals," they reported, "they did not appear seriously disturbed. They ran and jumped normally immediately following resumption of an orienting gravity stress."

The scientists concluded that "the sub-gravity state will not lead to any serious psycho-physiological difficulties."

There were hints at the meeting that the weightless state had been achieved on the ground, without the necessity of a free-falling rocket. However, sources suggested, information about this achievement is classified.

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MEDICINE

Chemical Injections Prevent Kidney Stone Formation

► EIGHTEEN OUT of 20 patients have been kept free from kidney stones over a period of 11 to 15 months by treatment with an enzyme chemical, Dr. Arthur J. Butt of Pensacola, Fla., and Dr. Ernst A. Hauser of Massachusetts Institute of Technology have announced.

The enzyme chemical is hyaluronidase. It is given by injections under the skin. The patients treated all had a tendency to rapid kidney stone formation.

Jelly-like chemicals called colloids normally protect against kidney stone formation these scientists have found. Hyaluronidase causes a pronounced increase in urinary

colloids and therefore prevents kidney stone formation.

The importance of colloids in relation to kidney stone formation was announced by Drs. Butt and Hauser at an American Chemical Society meeting (SNL, June 30, 1951, p. 402). At that time, "encouraging results" were reported for the enzyme treatment. The continuing good results are reported to fellow scientists in the journal SCIENCE (March 21).

Discovery of the action of protective colloids, the scientists state, may "open up a new and hitherto neglected field for medical science far beyond the treatment for kidney stones." Their statement is based on findings that formation of protective colloids virtually disappears during times of strong emotional stress.

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BOTANY

Photosynthesis Material Concentrated in Algae

► THE MATERIALS that capture the sunlight's energy in the blue-green algae are concentrated in particles within the living cells, very much as they are in other green plants.

This step toward understanding the mystery of photosynthesis was announced to the scientific world through a letter to the editor of the journal NATURE (March 15) written by Drs. M. Calvin and V. Lynch of the University of California, Berkeley, known for their researches on photosynthesis.

Heretofore it was thought that the energy-capturing pigments, called chlorophyll and carotenoids, were uniformly distributed throughout the whole cell. Smashing the cells with ultrasonics, nitrous oxide treatment and alumina grinding, Drs. Calvin and Lynch separated the materials by centrifuging, showing that these two pigments are in the particles and that phycocyanin, another pigment, is in the solution.

Bacteria that can perform photosynthesis also have their pigments aggregated, experiments of other scientists have shown.

Science News Letter, March 29, 1952

TECHNOLOGY

Electric Plane Circuits Checked Automatically

► FUTURE AIR catastrophes may be reduced by an electric circuit checker.

Known as the Nacelle Tester, the instrument is capable of giving 200 airplane electric circuits the once-over in less than 10 seconds. Hand testing the same number would require hours, reported John A. Herbst, Bogue Electric Manufacturing Co., Paterson, N. J. The instrument checks electric wiring to the propellers, carburetor and other vital parts of airplanes.

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