

GEOLOGY

Pacific Once Over Wyoming, Ancient Skeleton Shows

PACIFIC Ocean waters extended over Wyoming, some 26 million years ago, is the evidence of a fossil skeleton identified by Prof. E. C. Case of the University of Michigan.

The animal was a nothosaur, an amphibious relative of the dinosaurs, about six feet long. It had a strong tail that drove it through the water, and long legs that were most useful in swimming but could also be used on land. It probably lived most of the time in the sea, but came ashore to take sunbaths and to lay its eggs.

The skeleton now at the University, was sent in by Dr. S. H. Knight, director of the Wyoming Geological Survey. It was found near Casper, Wyo., by Don Allsen, University of Wyoming student. It is the first skeleton of its kind to be found in America, all previously known specimens having been reported from Europe.

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ARCHAEOLOGY

Barbecue Scene Unearthed Near Fort Collins, Colo.

AN EARLY American barbecue scene, early indeed since it happened thousands of years ago, has been unearthed in Colorado, where the oldest people of America camped and feasted.

Remains of the ancient picnicking are the latest discovery from the now famous site near Fort Collins, Colorado, where a Smithsonian Institution expedition is digging out the earliest known settlement of human beings in the entire New World.

Dr. Frank H. H. Roberts, Jr., who has just returned from the prehistoric site, found the evidence—a jumbled mass of meat bones flung aside, and charcoal and ashes of a great fire where bison and other big game animals were roasted for the great feast.

New light on the industry that went on at this place, perhaps 10,000 years ago, has also been uncovered by Dr. Roberts' expedition. Folsom Men, as science calls the earliest known inhabitants of America, did not merely camp at this site and move on. They lived and worked there, turning out hunting spears, knives, choppers and other stone implements, and leaving debris of stone scraps and discards on the ground.

Dr. Roberts has unearthed hundreds

of stone tools and weapons from the layer of ground in which they are now buried. This season his collection of Folsom Man's handiwork has shown that the oldest Americans were more versatile than had been heretofore suspected, in shaping stone to useful forms.

He has also learned more about the methods used in this most ancient of American factories. The Folsom Men did not ordinarily work at a chunk of rock until they had knocked off enough to leave a weapon. They reserved that simple technique for big heavy smashing tools, for cracking bone. But for cutting tools they preferred to knock off large flakes from a piece of stone, and these flakes, rather than the original stone itself, were then finished into sharp blades.

The latter method, Dr. Roberts explains, is considered more advanced as Stone Age culture goes, and Folsom Man's preference for the flake technique suggests his progress in stone industry.

New evidence regarding a mysterious type of old stone weapon known as Yuma points, after the place where they were first described, has come to light from this same camp site in Colorado, Dr. Roberts reports. Scientists have long debated whether these slender Yuma points were older than Folsom Man's most typical weapon, a grooved stone blade. Now, Dr. Roberts has found a number of Yuma points in a layer of earth 17 inches above the remains of Folsom Man's existence.

"So far as this site is concerned," Dr. Roberts concludes, "Yuma points were made later than the Folsom type of weapon."

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SEISMOLOGY

Earthquake off Oregon Recorded on Seismographs

AN EARTHQUAKE shook the Pacific Ocean bottom about 300 miles off the Oregon coast early Friday morning, Sept. 25. Seismologists of the U. S. Coast and Geodetic Survey made a preliminary determination of the epicenter as in latitude 43 degrees north, longitude 130 degrees west, on the basis of data supplied through Science Service. Origin was 4:53.4 a.m., Pacific Standard Time.

Observatories reporting were those of Fordham University, New York City; the Dominion Meteorological Observatory, Victoria, B. C.; and the U. S. Coast and Geodetic Survey, Tucson, Ariz.

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IN SCIENCE

BACTERIOLOGY

Ultramicroscopic Virus Blamed for Paper Decay

DECAY of valuable books, documents and other papers is now blamed on a filterable virus, belonging to the same class of ultramicroscopic organisms (if they really are organisms) that cause such diseases as smallpox, hog cholera, and leaf mosaic in plants.

Discovery of a paper-decaying virus is reported by Prof. N. P. Tikhonov and S. L. Zaitsev of the Academy of Sciences of the USSR. The two scientists conducted their researches in the Academy's laboratory for the preservation and restoration of documents. A sheet of new white paper kept for several months alongside of a virus-infected document loses about 80 per cent of its durability.

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PLANT PATHOLOGY

Tobacco Ill's Defeat Promised by Research

TOBACCO mosaic, destructive plant disease that costs tobacco growers the world over many millions of dollars annually, is a step nearer final defeat as a result of research work done by Rupert J. Best of the Waite Agricultural Research Institute of South Australia.

Mr. Best based his experiments on results obtained by Dr. A. W. Petre of the Boyce Thompson Institute for Plant Research, Yonkers, N. Y. Dr. Petre had been able to precipitate the virus causing the disease from a solution obtained from infected plants by using various chemical substances.

Mr. Best found that other proteins were being precipitated by this method as well as the virus. He set to work to find out the "isoelectric" point of the virus. This point is a measure of the acidity of the solution at which only the virus will be precipitated by the various chemical agents used by Dr. Petre.

By this method Mr. Best has obtained a precipitate of 99 per cent of the virus and he is carrying out further investigations into its chemical nature.

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E FIELDS

VITAL STATISTICS

Dozen Years Added to Average Length of Life

ELEVEN years have been added to the average man's life and 12 years to the life of the average woman, it is revealed by life tables of the U. S. Bureau of the Census.

At the beginning of the present century, the average length of life in the United States was 48 years for white men. Now, these new figures give an average life length of 59 years. For women the average lifetime in 1900 was 51 years. Now it is nearly 63 years.

The added years of life are credited to "improved sanitation, higher standard of living, labor-saving inventions in the homes and the advances made in education and in the science and practice of medicine and surgery."

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PHYSIOLOGY

Drunkenness Is Caused By Lack of Oxygen

WHY does alcohol make the imbibitor drunk? That is a question which has puzzled physiologists for many years. The answer is that it deprives the body of oxygen, Drs. R. A. McFarland of Columbia University, and A. L. Barach of the College of Physicians and Surgeons, New York City, conclude as a result of experiments reported in the *American Journal of the Medical Sciences*. They suggest treatment with combined oxygen and carbon dioxide.

The symptoms of drunkenness are familiar enough. The "drunk" sways on his feet. He lacks control over his movements. And, in addition, he may become irrational and lose his capacity for self-criticism, association, and memory. Physiologists have noticed a striking similarity between these symptoms and those of the mountain climber who suffers from altitude sickness and the flyer at high altitudes who is not getting enough oxygen.

Twenty-three students, all but two of them non-drinkers, volunteered to serve as subjects for Dr. McFarland and Dr.

Barach. They went without breakfast to the laboratory and there were treated to a big tumbler full of alcohol, orange juice, and oil of juniper. Control subjects had a similarly flavored drink without the alcohol. Unfortunately, they were not always fooled. They missed the "kick."

Tests were made to determine the amount of alcohol and lactic acid in the blood, and psychological tests to discover the mental condition of each subject. Treatment with oxygen and carbon dioxide lowered the blood's alcohol and lactic acid and improved the mental and motor ability in all but five of the 23 subjects, the experimenters found.

In a number of the cases, the decrease in blood alcohol was more than 50 per cent. Breathing of excess oxygen also tended to decrease the variations in pulse rate and respiration.

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PHYSIOLOGY

Good Mountain Climbers Need Plenty of Red Blood

IT TAKES red-blooded men—or other animals—to stand high altitudes without getting mountainsick or experiencing other unpleasant symptoms when they first reach the heights, it appears from studies carried out as part of the program of the International High Altitude Expedition.

Lack of oxygen in the atmosphere on a mountain top is responsible for most of the unpleasant symptoms. Persons who can enjoy their meals and be in a cheerful frame of mind when first climbing to oxygen-rare high altitudes owe this ability to the stuff which gives the red color to their blood, hemoglobin.

Hemoglobin besides coloring blood red plays the vital role of oxygen carrier between lungs and the rest of the body. Everyone has hemoglobin in his blood, but apparently some kinds of hemoglobin are more efficient at grasping oxygen from the air as it is breathed into the lungs.

Evidence for this was obtained in studies of mountain animals, such as the viscacha, the llama and the vicuña of the Andean highlands, and reported by Drs. F. G. Hall of Duke University, D. B. Dill of Harvard University, and E. S. Guzmán Barrón of the University of Chicago to the *Journal of Cellular and Comparative Physiology* (Vol. 18, No. 3). These animals all had hemoglobin which was more avid for oxygen, and also had more hemoglobin in each red blood cell, than did animals that live at sea level.

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ROENTGENOLOGY

X-Rays Bring Out Full Inner Beauty of Leaves

See Front Cover

X-RAYS are more than simply instruments for detecting injuries, combating certain diseases, and examining metals and other industrial materials. In the hands of a technician who is also an artist, they become the medium of an exquisitely developed expression of beauty.

Pioneer practitioner of this unique X-ray art is Mrs. Hazel Engelbrecht of Des Moines. Her daily work is making diagnostic X-ray photographs for physicians and surgeons and dentists; her all-absorbing hobby is the making of X-ray photographs that bring out, in the same picture, both surface and hidden beauty. The picture of the water-lily leaf shown on the cover of this issue of the SCIENCE NEWS LETTER, for example, gives an idea, not attainable in any other way, of the remarkable network of veins that are at once canals of the plant's life-juices and girders to keep the leaf-blade properly spread and supported.

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CHEMISTRY

Perkin and Industry Medals Given to Noted Chemists

THOMAS MIDGLEY, Jr., of Dayton and Detroit, whose research created the ethyl gasoline industry, and Dr. Walter S. Landis, of New York, leader in fertilizer research, are to be given high chemical honors.

The Society of Chemical Industry's American section has just awarded its 1937 Perkin medal to Mr. Midgley and its 1936 Chemical Industry medal to Dr. Landis.

Tetraethyl lead, which Mr. Midgley applied to make motor fuel anti-knock, adds, the prize committee announced, "forty times as much horsepower annually to American civilization as that which will be supplied by Boulder Dam." His more recent discovery of non-toxic refrigerants is described as equally fundamental in refrigeration and air conditioning.

Dr. Landis is vice-president of the American Cyanamid Company, and he has successfully attacked research problems dealing with nitrogen, cyanamid, cyanide, ammonia, nitric acid, phosphate, hydrogen, alloys, etc. He was responsible for the first large scale production of argon, rare gas used in lamps.

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