

PALEONTOLOGY

Thighbone of Dinosaur Found in Washington, D. C.

DINOSAURS wallowed through swamps where now the National capital rears its monumental buildings. New evidence to this effect has just been uncovered, in the digging up of the broken upper part of a huge saurian thighbone in a new excavation being made for the D. C. filtration plant. Workmen are now keeping a sharp lookout for possible additional fossils.

The bone was identified as belonging to one of the sauropod group of dinosaurs, by Dr. Charles W. Gilmore, curator of vertebrate paleontology at the U. S. National Museum. These creatures lived during Cretaceous geologic time, about 150 million years ago. Two finds of dinosaur bones have previously been made in Washington. They were of rather fragmentary fossils.

Judging from the size of the present fossil, Dr. Gilmore said, the original owner was a lumbering beast about ten feet high at the hips and fifty or sixty feet long, weighing approximately ten tons. The huge reptile was an unaggressive vegetarian, however. Apparently, from the geological evidence, it was trapped in a small pond or mud-hole and so perished.

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MEDICINE

Athlete's Foot Treatment Should Be Left to Doctor

A WARNING against use of the phenol-camphor mixture for athlete's foot by untrained persons is given in the *Journal of the American Medical Association*, (May 9).

The *Journal* states that it has been informed that "a number of investigations are now being conducted to determine the extent of the causticity of the phenol-camphor mixture and its possible benefits and dangers."

"Other factors which have been suggested as meriting consideration," the editorial continues, "are the possible aggravation of an existing irritation and the absorption of phenol if the medication is liberally applied and the affected area subsequently enclosed in bandages."

"Until the studies are concluded, treatment of 'athlete's foot,' ringworm and other fungus infections with a mixture of phenol and camphor or any other potent remedies is best intrusted to the qualified physician."

The phenol-camphor mixture for treatment of athlete's foot was described in a note by Dr. Edward Francis, (retired) of the U. S. Public Health Service, in the Dec. 6, 1941, issue of the *A.M.A. Journal*. The mixture, the *Journal* states, consists of "3 cubic centimeters of U.S.P. phenol and 3 grams of U.S.P. camphor, the entire mass being rubbed together in a mortar until it is liquefied. An alternate formula proposed in the communication was three parts of phenol and one part of camphor. Although the mixture is purported to be non-irritating to the skin, the communication warned that the phenol-camphor preparation should not be applied to the wet skin, since water has been reported to permit a release of the phenol with the result that it becomes caustic."

Science News Letter, May 23, 1942

AGRICULTURE

Fattening Cows Will Mean More Milk to Win the War

MILK to win the war and feed our allies means first fattening up the cows, it appears from a report by Dr. Samuel Brody, of the University of Missouri's Department of Dairy Husbandry (*Science*, May 8).

Daily milk production increases in direct proportion to the weight of the cow, Dr. Brody found.

If the cost of feeding the cow is also directly proportionate to the weight of the animal, then profits should go up as the body weight and milk production increase, he indicates. This is because so large a part of the expense of commercial milk production is for the labor of milking, feeding, cleaning, bookkeeping, housing and so on. It costs no more to milk a big cow than a small one.

Unfortunately, Dr. Brody points out, it is not yet known just how the cost of feeding does vary with body weight. It is possible that a 1,600 pound cow would get less, in terms of milk, out of her feed, because she would waste so much more energy in the effort of moving her heavy bulk around.

On the other hand, the fat animals seem to make fewer and slower movements than do small animals. So the total amount of food-energy used up in exercise may actually be less for the big cows.

"The energy expenditure at approximately physiologically-equivalent work levels parallels the basal-metabolism energy in 1,500-pound horses, 700-pound ponies, and 150-pound men," Dr. Brody states.

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BIOLOGY

Tobacco Mosaic Virus Lives for 28 Years

VIRUS of tobacco mosaic, a serious plant disease, has shown an astonishing longevity in a laboratory bottle, reports Dr. H. A. Allard of the U. S. Department of Agriculture (*Science* May 8). He set a preparation of the virus aside in 1914, with no special treatment to keep it from spoiling or "running down." Tested on healthy young tobacco plants in 1936, and again in 1942, it proved still capable of producing the typical symptoms of mosaic.

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ARCHAEOLOGY

Stone Age Implements Found In Cave

FLINT implements of a New Stone Age race that lived 7,000 or 8,000 years ago have been found in a cave on Mt. Carmel in Palestine by an American expedition. The find was announced by Prof. Millar Burrows, president of the American Schools of Oriental Research, whose home office is at Yale University. The digging was done under the direction of M. Stekelis, resident archaeologist in Palestine.

The finds consist of stone arrow-heads, scrapers, borers, awls, needles and saws. Particularly interesting are wooden sickles equipped with jagged flint teeth. These indicate that the people who lived in the cave had passed from a purely hunting mode of life to the cultivation of grain—they had made the transition from Old Stone Age to New. Another mark of New Stone Age culture is the presence of primitive pottery.

The culture level represented by these remains, already known in other localities, is known to archaeologists as late Natufian.

The caves in Mt. Carmel, famous since Old Testament times for their connection with the story of the prophet Elijah and the 450 priests of Baal, have been inhabited by human beings since very early in the Old Stone Age. Even now, shepherds sometimes use them for refuge in time of storm.

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CE FIELDS

SEISMOLOGY

Earthquake Centered in Mountains of Ecuador

THE EARTHQUAKE that killed more than 100 people in Guayaquil, Ecuador, on Wednesday, May 13, had its epicenter in the high mountains between 60 and 100 miles northeast of the city. The location was determined by seismologists of the U. S. Coast and Geodetic Survey and of the Jesuit Seismological Association in St. Louis, working independently, as approximately 1 degree south latitude, 79 degrees west longitude. The shock, which was a severe one, began at 10:13.3 p.m., E.W.T.

Observatories reporting through Science Service were: St. Louis University, Georgetown University, Fordham University, Spring Hill College at Mobile, Pennsylvania State College, the University of Michigan, the University of Alaska, the station of the U. S. Coast and Geodetic Survey at Ukiah, Calif., and the Dominion Observatory at Ottawa.

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PSYCHOLOGY

Beautiful Nurses Help Pilots Overcome Boredom

"FLYING fatigue," for which the old fashioned name is boredom, is the greatest enemy of military pilots while they are forced to cease flying during convalescence from illness or injury, according to a recent *Bulletin from Britain*.

"The sudden change from the feverish activity of a fighter station to the shrouded immobility of the average hospital would work more harm than the original damage from which the airman is in need of repair," states the British Air Ministry.

"It is during periods of convalescence that the symptoms sometimes appear of what has become known as "flying fatigue"—a sort of lethargy and inertia which at best retards recovery, and at its worst unfits a pilot for further flying duties."

This danger, the *Bulletin* continues, is shared equally by men suffering from

minor illnesses as well as those wounded in action or involved in an accident.

To overcome this boredom, hotels and mansions "in the most beautiful parts of England" have been converted into hospitals which look more like expensive resorts. All sports are provided together with gymnasium. Fliers may entertain their sweethearts or wives.

"If," continues the *Bulletin*, "(the flier) feels that he hates the sight of the nurses—which is well nigh impossible, because they are very pretty nurses—he can go off for a long walk. Instead of irksome restrictions, there has been substituted a code of conduct."

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PHYSIOLOGY

Early Teething May Be Due To Over-Active Adrenals

THE precocious baby whose parents boast about his early teething may owe his precocity to over-activity of his adrenal glands.

Doses of the cortical hormone of these glands, given on their second day of life, made baby rats cut their teeth 24 hours earlier and open their eyes one and one-half to three days earlier than their untreated litter mates, Dr. Michael G. Mulinos and Dr. Leo Pomerantz, of Columbia University, report (*Science*, May 8).

The scientists expect to search for the many other changes which they believe may also take place when the baby rats get the hormone treatment.

They cite the case of a one-year-old baby boy who had a tumor of the adrenal gland cortex and had as many teeth as a three-year-old and the bone development of a five-year-old, reported by Dr. I. Fraser recently in the *British Journal of Surgery*.

This and some of the marked bodily changes in grown-ups who suffer adrenal cortex tumors may be due to excessive amounts of the hormone, the findings on the baby rats suggest. Heretofore it has been supposed that such changes were due to sex hormones produced by the tumors, rather than to the adrenal hormone itself.

This hormone is already known for being able to maintain life, maintain normal levels of carbohydrates in the tissues and maintain water balance and normal levels of salt and potassium in the body. To this may be added, it now appears, the important function of influencing bodily development.

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METALLURGY

Scale on Iron and Steel Prevented in Experiments

DISCOVERIES at the National Bureau of Standards show how iron and steel can be heat treated in airless furnaces to speed production in war industries.

One of the difficulties in hardening or annealing ferrous metals through use of high temperatures in ordinary air has been the formation of oxide scale that must be removed by pickling, grinding or polishing. This costs time and money and delays the flow of production.

Investigations by V. C. F. Holm, metallurgist at the Bureau of Standards, show that if the heating is done in a practically inert atmosphere or in a vacuum furnace, iron and steel can be heat-treated without oxidation.

A rust or oxide film can be removed by heating in a vacuum without wearing away any of the metal, the experiments also showed. Some carbon must be present in the metal and some of this is removed with the rust. Thus pieces of rusty iron that contained a small amount of carbon were brightened in the furnace in 15 to 20 minutes at a temperature of 1,470 degrees Fahrenheit. But rusty high-purity iron could not be brightened at 2,280 degrees. Rust is prevented, however, in either case.

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MEDICINE

Conscientious Objectors May Serve in Hospitals

THE GROWING need of manpower at the Colorado State Hospital for the Insane may be met by the assignment of conscientious objectors, as a possible preliminary test to assigning objectors to this type of work all over the country.

A hospital for the insane is always undermanned, even in peace times, and the Colorado institution, with more than 4,000 patients, has lost many attendants. Five patients have escaped in recent days and this is attributed to lack of manpower by Supt. F. H. Zimmerman.

Col. Lewis F. Kosch, chief of camp operations of selective service, offered Dr. Zimmerman the use of 20 objectors from the Rocky Mountain camp near Colorado Springs. The men would be fed and uniformed by the hospital, and given an allowance of \$2.50 a month each for incidental expenses.

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