

PALEONTOLOGY

Prints of Earliest Feet Found On Slab of Rock

FOOTPRINTS left on a muddy shore by some of the first feet that ever walked the earth have been brought to Mount Union College, Alliance, Ohio, by Prof. George F. Lamb of the geology department. The soft mud on which the long-gone animal walked was buried and hardened into stone ages ago, and the five-foot slab recording their passage was found on a farm near Berlin Center, Ohio.

The animals were members of the primitive amphibian family called Stegocephalians, which came ashore and walked on legs some two hundred million years ago. The slab shows that the animal which made these tracks had four toes on each front foot and five on each hind foot. The line made by the dragging tail is also clearly defined.

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MEDICINE

Cancer Not Hopeless; Over 12,000 Survivors Reported

SUFFERERS from cancer have almost as much chance of being "cured" as persons suffering from any other disease. This is the opinion of experts attending the annual clinical congress of the American College of Surgeons.

The study of cancer has been one of the outstanding activities of the college, which is not a college at all but a great guild of 11,000 of the leading surgeons of the country. The College has collected records of over 12,000 cancer patients who have been "cured" and remained alive and well for over five years.

In spite of this record, the surgeons do not like to speak of cancer as a curable disease in the sense that every case can be cured.

"Cancer is an arrestable disease like tuberculosis, not a curable disease," asserted Dr. Charles A. Dukes of Oakland, Calif. For example, one patient, a 33-year-old woman, had a breast removed because of a large cancer. She lived a normal life for 21 years, raising her family to maturity. When she was past 60 years of age she died of cancer that had attacked every possible organ of her body. But meanwhile she had had 21 years of normal, active, useful life.

"There is nothing more to be ashamed of in having cancer than in having pneumonia or any other disease," Dr. Dukes declared in stressing the importance of early treatment for cancer. He described the case of a man who had for years lived in a hut along the San Francisco waterfront, shutting himself away like a hermit, because he was ashamed to have anyone know he had cancer. When he finally came to the physician, half his face had been destroyed by the cancer, though it was of a kind that yields readily to treatment in the early stages.

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PHYSICS

Yellow Sodium Vapor Light Reveals Colorless Details

FOR REVEALING the details of small colorless objects, the yellow single-color light from sodium vapor is definitely and significantly superior to the ordinary light from incandescent tungsten filament lamps such as are used in everyday lighting.

Drs. M. Luckiesh and Frank K. Moss of General Electric's Lighting Research Laboratory, Cleveland, have reported to the Optical Society of America an appraisal of the visual effectiveness of the new sodium vapor light, about to come into specialized commercial use, as compared with the familiar tungsten filament light.

The advantage of one illuminant over the other depends upon the purpose for which the light is used, the investigators concluded. In addition to revealing details better, the speed of retinal impression is also higher under sodium light for objects that occupy only a very small part of the field of vision.

On the average, the proportion of light reflected by a large variety of colored specimens is practically the same for both illuminants, although there is wide variation in individual colors. Sodium light enhances brightness-contrast between various pairs of colors in more cases than tungsten light does, but there are many exceptions.

The yellow sodium light often plays strange tricks upon eyes that are accustomed to white light, but measurements of nervous muscular tension as a result of reading gave in the reported experiments no indication of a difference in the behavior of the human seeing-machine under the two illuminants.

Science News Letter, October 28, 1933

IN SCIENCE

AERONAUTICS

Government Again Cuts Aeronautic Research

SCIENTIFIC research in aeronautics received a new blow in a further curtailment of funds for this work at the National Bureau of Standards.

At the beginning of the present fiscal year all research work conducted under funds of the Aeronautics Branch of the Department of Commerce was discontinued because of lack of funds. Later a part of this work was restored because it was hoped that the Budget Bureau would allow some additional funds for this urgent work. Fourteen of the 35 men who had been dismissed from this type of research were restored to carry on the development of radio aids to air navigation, such as the devices for blind flying and landing.

Now this staff has been again reduced to but four persons.

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CHEMISTRY

New Foundation Seeks Uses For Neglected Materials

RESearch into the possibilities of raw materials now either unused or put to inferior uses will be the main objective of a new organization, the Northwest Research Foundation, whose founding is announced in *Science*.

The Foundation consists of a group of business men of the Minneapolis-St. Paul territory, who will raise funds to be used by scientists at the University of Minnesota. They will investigate the possibilities of semi-wastes such as casein and low-grade grains, as well as unused natural resources like lignite, peat and aspen trees that grow on cut-over and burned-over lands.

When a profitable discovery is made and patented, the first returns from its exploitation go to reimbursement for the costs of the research project that brought it about, and any further profits are divided between the University of Minnesota and the financing of further researches.

Science News Letter, October 28, 1933

CE FIELDS

PUBLIC SAFETY

Delaware Makes Sleepy Drivers Take Naps

PPULL OVER and take a nap. This is the order that Delaware State Police are giving to sleepy truck drivers that they catch on the Delaware roads.

An active campaign against the menace of over-fatigued drivers is the result of a recent crash between two trucks when one driver fell asleep. Three men were killed in the collision.

All truck drivers are required to carry tickets showing the time they left their starting point and when the last trip was finished. A driver must show this ticket at the weighing scales where police check up on the load a truck is carrying to see that it is not over-weight. No driver or helper may be "connected with a truck" for more than 16 hours out of 24, the regulations now provide.

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ENGINEERING

Underground Oil Processing May Salvage Old Wells

UNDERGROUND distillation and cracking of oil is to be attempted in the Baku oil fields to salvage the 50 to 90 per cent. of petroleum that remains in the ground after an oil gusher has stopped spouting, and after pumping brings forth no more oil.

The new scheme for a second exploitation of oil wells is the invention of a young Russian chemist, A. B. Scheinman, who is assistant to the internationally known inventor of the vapor-phase oil cracking process used in Russia, K. K. Dubrovai.

He tackled the problem from a novel angle. His idea was to increase the temperature within the oil wells to such a degree as to convert the crude oil into gas and vapor within the underground layers. This underground gasification, distillation, pyrolysis and cracking is done with inexpensive heat obtained by burning about four per cent. of the crude oil.

Large scale experiments were carried on at the State Research Petroleum In-

stitute in Moscow where a model of oil well geological formations was used. Impressed by these experiments, the commissariat of the heavy industries has made a financial grant that will allow field experiments in the Baku oil fields on a large scale.

Conventional methods of exploiting oil wells for a second time consist in injecting compressed air to increase pressure, or flooding an inactive gusher with water to lift the crude oil to a pumping level. It is claimed, however, that this second exploitation seldom yields over five per cent. crude oil and for this reason the cost is prohibitive.

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PUBLIC HEALTH

No Signs of Vitamin A Lack in Depression

DEPRESSION diets had no lack of vitamin A, whatever other important food substances they may have been deficient in. Evidence of this has just been obtained by a formal inquiry of leading eye specialists throughout the United States.

Results of the inquiry, reported by Drs. Alfred F. Hess and Daniel B. Kirby of New York City, in the *American Journal of Public Health*, show that there has been no increase in cases of night-blindness or xerophthalmia during the depression. Both these conditions result from lack of vitamin A in the diet, and eye specialists have been watching particularly for them in recent years. Both diseases are extremely rare in the United States.

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MEDICINE

Two Gases Protect Mother After Childbirth

TWO OF the most formidable complications of childbirth may be anticipated with less dread and fear if a new method of treating them lives up to its early promise, anesthetists meeting in Chicago were told by Dr. Roland L. McCormack of Louisville, Ky. He reported successful treatment of convulsions and of hemorrhage after childbirth by inhalations of a mixture of carbon dioxide and oxygen.

The same method was successful in resuscitation of infants suffocated at birth or whose breathing apparatus failed to function properly soon after they were born.

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ENGINEERING

Soviet Plans Train to Run On Giant Ball Bearings

A STREAMLINED electric train running on giant motorized ball bearings in a grooved concrete track will be built in the Soviet Union as the result of successful tests in which a working model of the train attained a speed of 70 kilometers an hour (43 miles per hour). The train is expected to make 300 kilometers an hour (185 miles per hour) according to its inventor, Engineer Yarmanchook.

The train, perfected after eight years' labor, is quiet while running at high speed.

Each car rides on two large balls whose outside edges have been flatted slightly in order to make them serve as wheels. A powerful motor turns the axle of each ball. The "wheels" run in a grooved concrete runway, and the cars have a low center of gravity.

When running slowly the train wobbles slightly from side to side, but at high speed it is extremely comfortable, steady and silent.

One of the construction problems to be faced is that of friction between the concrete runway and the balls. The model was run on a wooden runway.

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VETERINARY MEDICINE

Tongue Vaccination Protects Against Rabies

THE TONGUE is the best place to vaccinate animals against rabies, Drs. John Reichel and J. E. Schneider of the Mulford Biological Laboratories, Glendolen, Pa., have found. They reported to the American Public Health Association, results of their efforts to determine the best methods of protecting animals from this horrible disease.

The relative potency of various rabies vaccines and the length of time protection will last following a prescribed number of injections of vaccine were among the points determined in their investigations. Injection of the vaccine into the brain is nearly always fatal, regardless of the size of the dose used. Other methods, such as injections under the skin or into the veins or muscles, are uncertain and give inconsistent results. Injection into the tongue was finally settled on as most satisfactory.

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