

ASTRONOMY

Movies of Sun Eruptions Made With Tower Telescope

WITH light reflected from the top of a tower forty feet high, astronomers at the McMath-Hulbert Observatory of the University of Michigan will soon be able to make movies of the sun in the light of a single glowing element in its atmosphere. In this way they will record the solar prominences, great flame-like masses of hydrogen that often shoot out from the sun's surface to heights of hundreds of thousands of miles, and solar "bombs" that are occasionally projected high above its surface and then explode.

The tower telescope, now being constructed under the supervision of Robert R. McMath, one of the founders of the observatory, will have two flat mirrors at the top to pick up the sun's light. One will turn with the earth, so as to follow the sun across the sky. The other will reflect the light into a lens immediately below, and this in turn will form a four-inch image of the sun in a building on the ground. Underneath, a pit thirty feet deep will hold the spectroscope through which the sun's light can be analyzed. Similar telescopes have been built at the Mt. Wilson Observatory in California, and in Potsdam, Germany, Arcetri, Italy, and Kyoto, Japan.

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MEDICINE

Surgeon Warns Against Home Remedies for Burns

WARNING against old-fashioned home remedies for burns, such as smearing the burn with butter, grease, ointment, oils or even that old stand-by, Carron oil, was issued by Dr. A. B. Bettman of the University of Oregon Medical School at the meeting of the American College of Surgeons.

Such remedies may make serious burns more serious, Dr. Bettman declared. In minor burns such treatment may do no harm, but as Dr. Bettman put it, "it is a case of the burn getting better in spite of the treatment."

"At the present time," he said, "physicians have learned that the best treatment for a serious burn is to give the patient a narcotic, remove the burned tissue, and apply, first a 5 per cent. solution of tannic acid, and then, immediately, a 10 per cent. solution of silver nitrate. This forms, almost instantly, a black, leather-like, antiseptic, protective dressing. This is dried quickly and

kept dry. No other dressing is applied."

After the actual burns are dressed there must be a comprehensive program of treatment for the patient.

As to first-aid measures in case of burns Dr. Bettman advised:

"The best and safest procedure in extensive burns is to call a physician immediately, in the meantime keeping the patient warm, and if no tannic acid solution is available, to make frequent applications of strong tea, freshly brewed with from eight to ten heaping teaspoonfuls of tea leaves to a pint of water. Non-greasy, tannic acid pastes are also of value."

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PHYSIOLOGY

Feeding Experiments Show Excess Vitamin D Harmless

TAKING large amounts of rickets-preventing vitamin D into the body causes no harm whatever, it is indicated in recent research by Dr. Harry Steenbock, the Wisconsin University scientist whose research has led to irradiation of food products to increase their vitamin D content.

With irradiation of food products becoming increasingly popular, there is a possibility that many persons consume vitamin D in excess of their needs. Since this vitamin increases the power of the body to fix calcium, it has been a matter of considerable speculation whether this element may be fixed in injurious amounts, or whether the vitamin D may have other undesirable effects.

Dr. Steenbock conducted feeding trials with experimental animals over a ten-month period, allowing them to consume vitamin D in far greater amounts than human beings are ever likely to. While commercial irradiated milk usually contains about 50 Steenbock units of the vitamin per quart, the Wisconsin investigator used milks varying in potency from this figure up to 5,000 units per quart.

All the common methods of fortifying milk with additional vitamin D were employed. Some milks were laboratory irradiated, others were produced by cows fed irradiated yeast, and still others supplemented with irradiated ergosterol and cod liver oil concentrated.

The experimental animals were given no other food than vitamin D milk to which small amounts of iron, copper, and manganese were added. They were given all they could drink during the ten-month period.

All the animals grew well, were uniform in appearance, and showed no evidence of abnormality whatever.

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IN SCIENCE

MEDICINE

Vaccines for Infantile Paralysis Unsatisfactory

PRODUCTION of a satisfactory and certain vaccine against infantile paralysis has not yet been achieved, it appears from a report of Dr. Simon Flexner, former director of the Rockefeller Institute for Medical Research. (*Science*, Nov. 1)

The report indicates that neither of the two infantile paralysis vaccines which are given the chief trials today can be expected to succeed. Extensive experiments have convinced Dr. Flexner that no method has yet been found for producing a safe and certain vaccine.

The efforts to find a way of protecting children from the dreaded disease date back to a discovery made by Dr. Flexner and an associate, Dr. P. A. Lewis, in 1910. At that time they found that macacus monkeys could be given active immunity or resistance to the disease by successive injections under their skins of some of the living virus which causes the disease.

A proportion of the monkeys, however, instead of becoming immune to the disease always became paralyzed.

Ever since, scientists have been trying to treat the virus so that it would give immunity without ever causing paralysis. The methods tried have been chemical treatment of the virus, heating it, and passage through monkeys.

None of these has been successful, in Dr. Flexner's opinion. Treatment with injurious chemical and physical agents either destroys the virus or reduces its concentration, he explains. If the virus is destroyed, it no longer has the power of producing immunity or resistance to the disease. If it is merely reduced in concentration, it immunizes certain animals and may paralyze others.

"No evidence exists showing that passage of the virus through monkeys removes its power to infect and produce paralysis in man," Dr. Flexner states. "On the contrary, we possess convincing observations which show that an indeterminate number of passages of virus through human beings does not deprive it of its potential paralyzing effect when injected into monkeys."

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E FIELDS

BOTANY

Wild Wheat is Found Near Mountain of Noah's Ark

WILD wheat, in many distinct varieties, has been found growing on the foothills of the Ararat region in Armenia, not far from the mountain where, according to tradition, Noah's ark docked after its long and stormy voyage.

The authorities of the Armenian Autonomous Soviet Socialist Republic have set aside the area as a scientific reserve, not to be cultivated or grazed, because of the value of such wild wheat varieties in the study of the origin of cultivated wheats, and also in genetic experiments looking to the improvement of the cultivated varieties in resistance to frost and drought.

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ETHNOLOGY

If Redfern Lives He May Have Met a Strange People

IF AVIATOR Paul Redfern is actually rescued from an eight-year captivity in the hands of South American jungle Indians, he may bring back to civilization new knowledge of an unknown people.

Trio Indians, whose captive the aviator is, according to one report, are a tribe that has escaped first-hand scientific study. They are known vaguely as one of the tribes of fierce Carib Indian stock. Living far in the tropical forest of Dutch Guiana or near its southern border, they are presumed to use food and other materials similar to neighbor tribes. But so far as their beliefs and customs go, these may be distinctive.

If Redfern is indeed a cripple hidden among these Indians, treated as a white god who fell from the sky, he has had opportunity to learn about them.

There are some real cannibals in isolated parts of this jungle world, says an ethnologist of the U. S. National Museum. Poisoning is something of an art. Poisoned arrows and poisoned drinks are real dangers of life there. Typical Indians of the region live in thatched homes, depend heavily on cassava root for "bread." Men eat together, apart from their women folk.

Curious customs have been reported

by those who have studied some of these jungle tribes. At the U. S. National Museum is a pair of extraordinary marriage bracelets brought back from the region in 1858 by naval officers. By daring to wear these, a young Indian would prove his worthiness for marriage. The wristlets look harmless enough, but before the aspiring bridegroom put them on, they were filled with stinging ants of a most vicious kind. Bravely wearing them, the suitor would dance from one end of the village to the other, pausing before each house. If he did not flinch in his grim dance, he was "approved."

Between the Indians supposed to be holding Redfern captive and civilization are remarkable natives of a different sort. These are the Djukas or Bush negroes. Transplanted from Africa to Guiana in slave trading days, these negroes escaped and buried themselves in the jungle. There they live more or less African lives on American soil.

A scientific expedition which succeeded in studying the Bush Negroes a few years back, found them still decorating benches, combs, and other possessions with art that suggests old Africa. They send long-distance messages by African drum telegraph, and follow witch-doctor practices.

Reports of the white man captive among the Indians in this South American region say that Bush Negroes and Trio Indians are notably hostile to one another, and that these formidable one-time Africans would have served as an effective barrier to his escape by overland travel. Even if Trio Indians were willing to bring a white man out of their country, it is pointed out, they would not run the gantlet of their enemies.

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EUGENICS

Blood Test Required for Marriage in Connecticut

AFTER the first of January, all applicants for a marriage license in the State of Connecticut must pass a Wasserman or Kahn test before a license will be granted. The certificate must be based on a blood examination by an approved laboratory.

The blood examination will exclude the possibility of the dreaded venereal disease, syphilis, which in certain stages is readily communicable.

Other states requiring medical examination upon the issuance of a marriage license are Wisconsin, Oregon, North Dakota, Alabama, Wyoming and Louisiana. North Carolina repealed its law this year.

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AERONAUTICS

Soviet Pilot Balloon Reaches 18.3 Mile Height

A SMALL pilot balloon bearing automatic recording instruments has ascended to a height of 18.3 miles—a new record for Russian work in this field—at the Institute of Aerology in Slutsk.

At an altitude of eight miles the temperature registered by the device was seventy degrees below zero Fahrenheit.

At 11.8 miles the temperature rose to minus 58 degrees Fahrenheit; at 16.7 miles it was minus 52. From this last point to the maximum at 18.3 miles the temperature stayed constant.

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PALEONTOLOGY

Bones of Bird-Footed Dinosaur in U. S. Museum

BONES of a "late-model" dinosaur, that lived when these monster reptiles were passing out of biological fashion some 120 million years ago, have been brought to the U. S. National Museum by Charles W. Gilmore, curator of vertebrate paleontology. Although its live weight was probably about three-quarters of a ton, the creature was built very much along the lines of a running bird, and had bird-like feet, with three toes each.

This modeling for speed and relatively light weight, Mr. Gilmore explains, may have been due to the need for greater speed in the later days of dinosaurian domination, when competition had become severe and race-survival was to the swift. The loss of two toes out of the standard set of five possessed by earlier dinosaurs was one important item in this evolution toward greater speed in running. The same thing has happened among running mammals, reaching an extreme in the horse, which has only one working toe on each foot.

Mr. Gilmore's find is rated as a great rarity, for these bird-like dinosaurs were apparently never abundant. The bones are still in the "raw" state, as found, so that it is not known how complete the skeleton is. But it seems to be a much more nearly complete specimen than those now in museums, which are usually assembled out of the fragments of several different skeletons.

Along with the fossils of the bird-like dinosaur Mr. Gilmore found the remains of duckbill dinosaurs, horned dinosaurs, armored dinosaurs, and extinct genera of turtles and crocodiles.

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