

METEOROLOGY

Harm Not Expected From Snow and Rain

RECENT heavy rains in the watersheds of the southern tributaries of the Ohio river have brought them up to flood stage, but as yet they do not threaten any serious harm, meteorologists of the U. S. Weather Bureau informed Science Service. High water has been reported in both the Tennessee and Cumberland rivers, but not enough to interfere with the working programs of the various TVA projects.

The ice has started to go out of the Allegheny and Monongahela rivers at Pittsburgh, and the Ohio at that city, as well as at other points downstream, has been reported at full, but not approaching a dangerous flood stage.

The February cold waves that invaded the South with snow did not leave enough of it to cause trouble by its melting. The present high water in Southern rivers is due almost entirely to rain, and unless further heavy rains follow soon, there is little prospect of more than average spring freshets.

Science News Letter, March 10, 1934

ASTRONOMY

Meteors Declared Larger Than Previously Thought

WHEN YOU see a "shooting star" flash in the sky, and quickly repeat the incantation, "Money-money-money!" that brilliant little natural rocket may be making a more substantial contribution to the earth than it is commonly given credit for.

"Shooting stars," or more properly meteors, are little brothers to the great meteorites of iron or stone that occasionally roar through the sky and plump into the earth—as a rule, fortunately, without doing anybody any damage. The tiny meteorites that make "shooting stars" are stated by most astronomers to be probably no larger than grains of sand or pinheads; but H. H. Nininger, curator of meteorites of the Colorado Museum of Natural History, Denver, thinks otherwise.

In a lecture before a Washington audience of scientists, Mr. Nininger called attention to the intense scoring and pitting of the big meteorites which have been collected, by the friction of the air as they rush through it. This air-blast, he said, is more intense than the blast of white-hot gases from the

muzzle of a gun, and it erodes in the solid iron or stone of a big meteorite pits that you can put your hand into. Its erosive action on a small object would be greater rather than less, he believes, so that probably we should think of the bits of solid stuff burned away to make our "shooting stars" as objects much larger than sand grains.

In answer to the frequent question about the danger to human life and property of big meteorites falling like giant projectiles from the heavens, Mr. Nininger cited a calculation he made when he was in Kansas some time ago, on the basis of the known area and population of the state and the known cases of meteorite falls in that area. This calculation showed that the chances of a man being hit by a meteorite are so small that such a casualty would occur not more than once in fourteen thousand years.

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ENTOMOLOGY

Florida Fruit Fly Scare Aided Pure Entomology

NEW TRUTH was found in the old adage, "It's an ill wind that blows nobody good," in connection with the invasion of Florida by the Mediterranean fruit fly a few years ago. Entomologists, of the "applied" or "economic" branch of their profession, finally drove the dreaded pest out again, but in the meantime they had to deal with thousands of specimens of less harmful flies belonging to the same family.

As a result of their collecting and cage-rearing labors, many new facts in "pure" entomology were discovered, and a number of interesting new species of the insects made known to science. All this has required time for digestion and evaluation; but the good blown by the ill wind that carried the fruit-fly invasion to our shores has at last become manifest in a new scientific publication by the U. S. Department of Agriculture, worked up by Foster H. Benjamin of the Bureau of Entomology. Mr. Benjamin's just-published bulletin has no immediate money significance; but science, which like a good housewife patiently stores all manner of "useless" things, sometimes for many years, may one day confound the practical-minded by pulling some apparently insignificant fact out of it, and making it worth a million dollars.

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IN SCIENCE

SURGERY

Woman's Stomach Yields Four Dozen Teaspoons

FOUR DOZEN teaspoons were among the objects removed from the stomach of a woman patient at the State Hospital in Central Islip, N. Y. She was admitted to the hospital suffering from melancholia with suicidal tendencies.

In reporting her case to the *Journal of the American Medical Association*, the physicians, Drs. E. Raymond Hildreth of Bay Shore and Robert B. Casey of Central Islip, state that besides the forty-eight teaspoons, they removed from her stomach one teaspoon handle, three bolts, one nut, one prune pit, one button, one small piece of glass, two pieces of spring wire, one needle, one piece of cinder, one hair pin and one lead pencil. The patient recovered from the operation but her mental condition has continued disturbed.

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AVIATION

Glider Flying Now Part of Navy Aviation Course

GLIDER flying is no longer a novel experiment.

Experiments in using gliders in teaching students to fly were so successful that the Navy has put in an order for gliders which will be used in regular flight training at the training school at Pensacola, Fla.

Beginning in June, one half the men in each class will start their aviation training with a course in glider flying while the rest proceed with the ordinary course of training. The instructors want to find out whether students given the glider training first will learn to fly more quickly and make better aviators. Four students who have already been trained in this way, upon completion of the glider training, joined a class of students who had had at least ten hours dual and two hours solo flying. They were able to keep up with the rest quite satisfactorily.

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CE FIELDS

ARCHAEOLOGY

Chewing Gum Hunt Leads To Unknown Mayan Ruins

IN A HITHERTO unexplored region of southeastern Campeche, Mexico, an expedition has discovered the ruins of an important center of the great Mayan civilization.

Announcing the discovery, the Carnegie Institution of Washington said that the expedition, directed by Karl Ruppert, staff archaeologist, was dispatched from Chichen Itza, in Yucatan, to investigate reports that natives seeking new sources of chicle, chewing gum raw material, had found an unknown ruined city in a wild region of Campeche.

Twenty sculptured stone monuments were found among the ruins, and dates on some have already been deciphered. They show that the place was occupied during the Old Empire of Mayan history, which ended in the seventh century A. D., when many cities were abandoned mysteriously in waves of northern migration.

The discovery is said to fill in a blind-spot in Mayan history, for the region of the ruins is geographically midway between the Old Empire cities of southern Yucatan and the New Empire cities farther north.

Science News Letter, March 10, 1934

MARINE BIOLOGY

Meat-Eating "Sea Lilies" Collected by Smithsonian

NEW SPECIES of submarine "flowers" that are really hungry animals have been brought to the U. S. National Museum by the Johnson-Smithsonian expedition. They are crinoids, better known as "sea-lilies," special subjects of study by Austin H. Clark, the Museum's curator of echinoderms.

Crinoids are relatives of starfishes and sea-urchins. For purposes of simplification, a crinoid might be thought of as a starfish turned upside down, with a stalk that anchors it to the bottom; though it might not at first be recognized as closely related to a common

starfish, because in many species the arms are branched out into delicate feathery patterns.

One peculiarity of crinoids that has prevented the collection of perfect specimens until recently is their habit of breaking off their arms when attacked or disturbed. This is a defense reaction, presumably useful in preserving them from their natural enemies; and they carry the behavior over into their response to the grab of a deep-sea dredge. Another peculiarity that militates against their becoming good museum specimens is the readiness with which they lose the frequently beautiful colors they have when alive.

Though they are animals and always hungry, crinoids are usually satisfied with small prey: the minor plants of the sea, and small animals related to shrimps and crayfish. These they paralyze with poison secreted by the tentacles lining the grooves in their arms, which carry the food to the centrally placed mouth.

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RADIO

Auto Ignition Sparking is Short Wave Radio Trouble

NOISY and unintentional "broadcasting" by the ignition systems of automobiles menaces the utilization of high frequency or short wave radio by the public, Virgil M. Graham, engineer of the Stromberg-Carlson Telephone Manufacturing Company, warned the Society of Automotive Engineers. Automobile owners who have had radio receivers in their cars have already discovered the necessity of shielding the ignition systems in order that there will not be interference with their reception of broadcast music and speech.

Even more important, in the opinion of Mr. Graham, is the interference of automobile ignition systems with radio receivers in other services. The popularity of so-called all-wave receivers is bringing this problem acutely to the attention of the public. He urged automobile manufacturers as a routine to so equip their cars that the ignition system does not send up a barrage of electrical signals that cause interfering noise in radio receivers.

Interference from automobile ignition systems is becoming more important as ultra-high radio frequencies are used for police work, aircraft landing beacons, and other such uses.

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PHYSIOLOGY

Smoking Pleases Because It Sweetens

YOU GROW sweeter when you smoke.

The gratification you get from smoking, particularly when you are tired and hungry, is due to an increased amount of sugar in your blood brought about by the nicotine from your cigarette—or pipe or cigar. This explanation of what has long been a mystery has just been reported to *Science* by two Yale University scientists, Drs. Howard W. Haggard and Leon A. Greenberg.

The nicotine in the tobacco acts upon the adrenal glands, causing them to discharge more adrenalin into the system. As a result, the glycogen stored in liver and muscles is converted to sugar, and the sugar concentration of the blood is increased.

The same thing happens after a meal. It is this increased sugar concentration that definitely relieves the fatigue and irritability which develop when the amount of sugar in the blood is at the fasting level, in other words, when you are hungry. This also explains why many tobacco users smoke when they feel tired or hungry. The nicotine relieves the hunger and fatigue temporarily by increasing the amount of sugar in the blood.

The discovery of the reason for tobacco's gratifying effects was made accidentally by the Yale scientists. They were investigating the question of the optimum mealtime interval—how often children, college students and industrial workers should be fed. The concentration of sugar in the blood was examined and other tests made every hour throughout the day on many persons. The blood sugar concentration rose after a meal, fell to the fasting level within two to four hours if another meal was not taken, and in most subjects remained practically unchanged at that level for many hours. In a few of the adults, but in none of the children, the blood sugar concentration showed sudden big rises and falls after it had reached the fasting level. It was suggested that smoking might explain these fluctuations. Subsequent investigation proved the suggestion to be correct and led to the discovery, apparently for the first time, of the reason for the gratifying effects of tobacco smoking.

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