

GEOPHYSICS

New Hot Spring Breaks Out In Arkansas Park

A NEW hot spring came into existence at the Hot Springs National Park recently when workmen were cleaning out the old springs and installing new pipe lines.

While workmen were leveling off a trench to carry away the flow from one of the springs, a projection was found in the bottom of the trench which interfered with the proper level for the pipe. To remove the projection a laborer struck it about half a dozen times with a pick, and then a stream of hot water gushed into the trench. A new spring apparently had been born.

Dr. Hugh de Valin, park superintendent, states that this spring is one of the hottest in the park, and that it is expected to have a flow of from 50 to 60 gallons per minute. It will be included in the collecting system through which the hot waters are gathered for distribution.

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METEOROLOGY

History of 1930 Drought Told by Weather Chief

A PROLONGED stagnation of air over nearly the whole continental extent of the United States best explains the unprecedented drought of the past summer, Dr. C. F. Marvin, chief of the U. S. Weather Bureau, states in his annual report.

No conclusive or comprehensive explanation of such abnormal weather conditions has yet been discovered, however, nor has any means yet been perfected of predicting the approach of dry summers far in advance, in the opinion of the government weather authority. Some slight advances in long range forecasting have been made by means of correlations of weather statistics in different parts of the world and some measure of success may be obtained by observing changes in the temperature of the surface waters of the oceans but the Weather Bureau cannot be led away from sane and rational conservatism in these matters, he said.

Facts of the 1930 drought which was the severest in the climatological history of the central and eastern portions of the United States comprised the bulk of Dr. Marvin's report.

How hard the farmer was hit by the weather is strikingly brought out by the

data, based on the weather reports up to August 31. "Not a single State east of the Rocky Mountains had as much as normal precipitation for this period of the three principal growing months and some half dozen States had less than half the normal," the report said in part:

"The summer season was generally warm, with the period after the middle of July to middle of August having abnormally high temperatures, with the previous maximum records equalled or exceeded in many places. These unusually high temperatures greatly intensified the effect of the deficient moisture."

"The growing season, as a whole, March to August, was the driest of record over a large area, comprising the Middle Atlantic States and the Ohio and middle Mississippi Valleys."

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CHEMISTRY-NUTRITION

Animals Make Vitamin A From Color in Food

EVIDENCE that animals can manufacture the growth-promoting vitamin A in their bodies from carotin, the yellow coloring matter of some of their foods, has just been reported to the Medical Research Council by Dr. Thomas Moore of the Nutritional Laboratory in Cambridge, England. Dr. Moore's discovery reverses an earlier theory about vitamin A, that it is not made by the animal and that all of it found in animal bodies and glands comes directly from the food eaten.

Vitamin A, besides promoting normal growth, increases resistance to disease. It is found in animal fats, such as butter and beef fat, in eggs, milk and vegetables. It has always been found together with this yellow pigment, carotin. The yellow of the egg, butter, yellow carrots, and yellow corn contain this vitamin. White corn, white carrots and white turnips, however, have very little vitamin A compared to the amount found in the yellow varieties. In green vegetables which contain this vitamin, carotin is also present but its color is hidden by the green color of chlorophyll which is abundant in such plants.

Not only do the two substances occur together but carotin has the same effect on growth and bodily vigor and health as vitamin A. Extracts of pure carotin can cure animals suffering from deficiency of vitamin A just as feeding the vitamin could cure them.

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IN SCIENCE

OCEANOGRAPHY

Hydrographic Office Celebrates Centenary

THE one hundredth anniversary of the U. S. Navy's Hydrographic Office, which has charge of issuing charts and maps on which the navigator depends, was celebrated Saturday, December 6, with a radio program in which Rear-Admiral Walter R. Gherardi, head of the office, and Secretary C. F. Adams spoke. Mr. Adams' great-grandfather, John Quincy Adams, when President, was one of the early advocates of the establishment of the office.

Captain Wilkes, one of the early hydrographers, made extensive explorations in the Antarctic, and his name is still attached to geographical features of that region. Another early hydrographer, Lieut. Matthew Fontaine Maury, made extensive ocean surveys which formed the basis of the modern charts. He also attained fame as an astronomer and was the first head of the Naval Observatory.

In recent years the Office has extended its activities to aviation, and now issues pilot charts.

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ARCHAEOLOGY

Skeletons of Notables Found in Prehistoric Grave

GRAVES of mysterious Tarascans, one of the prehistoric tribes of Mexico, have been found near Zacapu, Michoacan, by Alfonso Caso, of the Mexican National Museum.

The most remarkable of the tombs contains two skeletons believed to represent distinguished personages, perhaps a chief and his wife. The bones lay in a tall jar, 32 inches high and 26 inches across. The only decoration on this funeral jar is a red band about the neck. Accompanying the burial is an exquisite red and white polished pottery bowl with geometric design.

This tomb was found at the foot of a mound. The rocky pile is veiled with trees and vegetation, but is well known to natives of the region as the "Palace of Caltzontzin," last Tarascan king who still ruled in 1523.

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E FIELDS

MEDICINE

Sugar-Coated Tablets May Be Menace to Children

A SERIOUS menace to young children lurks in the sugar-coated tablet and the pink pill when these contain strychnine, Dr. John Aikman of this city has warned in an address before the Rochester Pediatric Society.

The amount of strychnine in each tonic tablet or cathartic pill is not very large. It will not harm the adult for whom the tablets and pills are intended. However, these colored, sugar-coated pills are attractive to small children, much as candy is. Frequent cases of convulsions and death in children under five have been traced to eating large numbers of such tablets unobserved by parents or nurses. The finding of the empty or half-empty bottle later has given the clue to the cause of the child's illness.

"The aggregate amount of strychnine or other poisons thus put in the hands of patients may be surprisingly large," Dr. Aikman said, commenting on the fact that tonic tablets containing strychnine have become household remedies and cathartic tablets have even a more general use.

He suggested that a poison label should be required by law for all containers of drugs having even a small amount of strychnine.

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ECONOMICS

Funeral Costs Increase While Funerals Decrease

FUNERALS have been growing fewer each year, as a result of efforts by physicians and health officers to save and lengthen human lives. At the same time, the funeral industry itself has expanded greatly.

The result of this expansion in the face of a decreasing demand has been reflected in the costs of funerals to the public, John C. Gebhart has just reported to the Committee on the Costs of Medical Care, after a two-year survey of the subject.

"The burial industry is unique," the report stated. "It is probably the only industry in which the demand is fixed by natural causes. It is obvious that no amount of advertising or sales efforts can increase the demand for funerals."

"Moreover, the business is by no means evenly distributed among undertakers. It was found that in New York City 8 per cent. of the undertakers handle 44 per cent. of the business. The balance, 92 per cent., have 25 funerals a year and are therefore trying to make a living out of two funerals a month. The marginal undertaker is, therefore, an important factor in the problem of high funeral costs. The smaller firms are obliged to charge more than the larger ones."

"It is apparent that funeral prices cannot be greatly lowered until the volume of business, which is fixed by the death rate, is concentrated in fewer hands. This applies both to funeral directors and to manufacturers of burial goods."

Another factor influencing the cost of funerals is the desire on the part of the family for an elaborate funeral either as a token of respect and affection or to satisfy social or religious conventions and traditions.

"In general, funeral charges are highest in the East and lowest in the South, with the mid-western and central states falling between these extremes," said Mr. Gebhart of the geographical situation. "In towns under 10,000 in population, funeral expenses average \$241; in cities of from 10,000 to 250,000 they average \$270, and in cities of over 250,000 they average \$336."

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CHEMISTRY

New Grain Fumigant Eliminates Fire Hazard

DEVELOPMENT of a new method of fumigating grain in storage without incurring a fire hazard is an outstanding achievement of government scientists during the past year, Dr. C. L. Marlatt, chief of the Bureau of Entomology of the Department of Agriculture, reveals in his annual report.

The new fumigant is a mixture of solid carbon dioxide or "dry ice" and ethylene oxide. Tests by commercial handlers of grains have proved the value of the method, which is economical and superior to the more familiar carbon disulphide treatment of grain, due to its non-inflammability.

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PSYCHOLOGY

Disobedience a Stage Of Normal Growth

IF SONNY suddenly changes at about the age of 2½ from a model of willing compliance to a strange creature shouting no's and I-don't-wanna's, you may find consolation in a report submitted by Prof. K. M. Banham Bridges, of McGill University, to the Western Psychological Association. He considers such a change a normal one in the growth of children.

Prof. Bridges has made a three-year study of nursery school children. He describes four distinct phases of development in the child's relations with adults, which he observed during that time. Under the age of two, the typical child is very dependent on his elders. Between two and two and a half, he becomes increasingly independent. At about two and a half, he adopts an attitude appropriately described by psychologists with the word "negativism," which lasts until he is about four. After four, he may be expected to learn how to cooperate with others without sacrificing his newly acquired manly independence.

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ROENTGENOLOGY

Describes X-Rays As Beauty Aid

THE role played by X-rays in preserving or restoring milady's beauty was described by Dr. Benjamin H. Sherman of Hollywood, Calif., at the meeting in Los Angeles last week of the Radiological Society of North America. Nor is masculine pulchritude neglected in this field of radiology.

"Burns about the mouth, eyelids, nose, neck, etc., may completely change the patient's looks or expression, generally to his detriment," Dr. Sherman said. The same is true of defacing scars which often result from accidents.

The removal of these is now possible through the use of X-rays and radium. Men and women otherwise possibly defaced for life by accidents may hope for recovery of lost bodily beauty, he said.

Some injuries, however, leave marks that baffle all efforts at removal. Best results are obtained in the case of keloids. This word is derived from a Greek word meaning clawlike. Keloids extend over healthy tissues beyond the borders of the scar.

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