

VOLCANOLOGY

Mauna Loa Eruption Soon Is Dr. Jaggars' Prediction

MAUNA LOA, 13,675-foot volcano on the island of Hawaii, is due for eruption soon, predicts Dr. T. A. Jaggars, volcanologist of the U. S. National Park Service. He expects it to be a lava eruption, and does not look for destruction of property or loss of life.

Hualalai, another major volcano on the island, may also go into action, he thinks. Hualalai has been inactive since 1801, when it ended a prolonged eruptive spree—22 years.

Other Hawaiian scientists join with Dr. Jaggars in expecting volcanic outbreaks before very long.

Brother Othmar, astronomer at St. Louis College, likewise is of the opinion that Mauna Loa or Kilauea will burst into eruption shortly. E. K. Martin, U. S. Weather observer, adds statements by old natives of "volcanic weather" to his prediction of likely volcanic action.

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GEOPHYSICS

Plato First to Declare That Earth Is a Sphere

COLUMBUS did not prove that the earth is round, as we were painfully taught in school. He did not even try to; he just took it for granted, as did all educated men of his time. The sphericity of the earth had been an accepted thing in the minds of scholars for many centuries. Even in the so-called "Dark Ages" really well-informed persons were mostly "round-earthers."

The idea of a spherical earth was familiar to Greek philosophers from the fifth century B. C. onwards, declares Dr. William Arthur Heidel of Connecticut Wesleyan University, in his new book, "The Frame of the Ancient Greek Maps," published by the American Geographical Society. Even before that, some philosophers said things that have been interpreted as indicating belief in the roundness of the earth, but Dr. Heidel is not able to find anything really unequivocal earlier than Plato.

In one of Plato's reports of a purported discussion by Socrates, the earlier philosopher (who had been Plato's teacher) is made to express the belief "that the earth is really round and at the center of the heavens." This statement is made after an inquiry about the writings of Anaxagoras, implying that the question whether the earth is round or flat was a subject of lively debate.

Two later Greeks, Philo and Pytheas, who wrote about 300 B. C., apparently made critical geographic and geodetic studies bearing on the sphericity of the earth. Philo was a Navy man who served in Egypt and on the Red Sea, and Pytheas made his studies in what was, for the Greeks, the Far North.

The theories formed in these early days, the evidence in their support, were never lost. They survived through the Middle Ages and were a part of the cultural equipment of the navigator from Genoa who was bold enough to treat them as dependable working facts.

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ARCHAEOLOGY

Ancient Indians May Reveal Poor Areas for Farming

INDIANS who lived in prehistoric America may reveal undependable areas for farming—regions that turned into dust bowls in the past and may be expected to do so again.

This is the hope of archaeologists who are beginning to explore the land in the Great Plains states, seeking Indian evidence buried beneath the white man's feet.

Just returned from Kansas, Dr. Waldo R. Wedel of the Smithsonian Institution reported that he has unearthed village sites of varying ages. Accumulating evidence from such excavations, he said, shows that group after group of prehistoric Indians settled in sections of Kansas and Nebraska. Both hunters and farmers came. The farmers apparently would do very well while the weather was relatively wet, but after a few generations they would be driven out, perhaps by drought. The land would remain deserted for a long time. Then came a new group to repeat the process.

Discovery by Dr. Wedel of pottery like that made by the famous Hopewell Mound Builders is a new revelation that this kind of Indian culture spread west as far as Kansas City. These Mound Builders were concentrated in the Mississippi and Ohio River valleys. Now, it appears that they, or Indians influenced by their manner of living, were one group that tried to conquer an undependable area and were tricked by it.

That Indian excavations can aid in showing where undependable areas for farming lie is, Dr. Wedel emphasizes, no more than a theory at present. But archaeology does provide lessons from the past, and Plains prehistory may have this useful application.

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IN SCIENCE

MILITARY SCIENCE

Not So Pretty or Pleasant Is One Exhibit at Paris

AMID the colorful lighting and the splendor of the Paris International Exhibition, strung along the two sides of the Seine in the heart of the great world city, one comes upon an unbeautiful, stark display labelled: "La Defense Passive."

Light hearted couples on holiday from the provinces stop and view this section with a sober fascination. Those who have seen the modernistic interior decoration displays with the French equivalent of "I wish we could have that!" here stand with unspoken hope that they may never have what they see before them.

For passive defense measures consist of preparedness against gas attack. There is a map with blood red dots upon it showing where great stations of Paris' subway, the Metro, have been enlarged to provide refuges for thousands who will crowd them when and if gas and bombs are rained from the air. There is a model of a great underground hospital with crowded wards, with gas casualties writhing in agony.

Strange creatures clad in gas proof costumes, masks, unwieldy gloves and boots—what the safely dressed man or woman will wear in the next war—stand around on display. And one wall is lined with examples of how a door can be constructed to keep gas out.

In miniature a gas clean-up squad, with the methodic matter-of-factness of firemen, are mopping up where bombs have splashed deadly stuff into a street such as the one that you might live in if you were French.

Any large city in Europe could and probably does have such a display. The contrast is greater in Paris of 1937 with its great exposition of art and technique, crowded with foreigners as well as French, all suppressing their fears of the possibility of an insane war that might cause other governments to send gas and bombs to Paris instead of fine buildings, exhibits, and art and scientific treasures.

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E FIELDS

PHYSIOLOGY

Dyes Which Stained Brains Also Induced Anesthesia

DYES MAY help scientists find better anesthetics for surgical operations, it appears from studies by Drs. Axel M. Hjort, David W. Fassett and Edwin J. DeBeer of the Burroughs Wellcome and Company's Experimental Research Laboratories at Tuckahoe, N. Y.

In their report to the journal, *Science*, these investigators explain how they combined certain modern local anesthetics with dye-forming chemical groups and then tested them on white mice. The dye-anesthetics all stained brain as well as other body tissues when injected into the mice. The non-anesthetic dyes stained tissues generally but did not stain the brain tissues. (*Science*, Sept. 24.)

These results, the scientists explain, promise to provide material for further investigations which may "lead to a better understanding of the processes underlying the phenomenon of anesthesia."

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GEOGRAPHY

Claim Portuguese Found America Before Columbus

ARMED with new documents, new interpretations, a Portuguese historian hurls the challenge that Portugal's bold seafarers—not Columbus—discovered America.

Reopening an argument that seems never to stay quiet long, Dr. James Cortesao declares there is no want of documents to prove Portugal's part in the discovery. The main trouble, in his opinion, has been that documents were not understood.

Two errors have obscured this chapter of world exploration, the Portuguese historian explains in a painstaking report to the *British Geographical Journal*. These errors are: 1. Failure to realize that government policy might have led Portugal to keep the discovery secret. 2. Taking for granted that it was harder to cross the Atlantic than to sail on long coastal voyages.

On the first count, Dr. Cortesao argues that Portuguese monarchs in those days

were merchant kings. And it was part of the game to keep other nations from knowing distant trade routes, lest they elbow into profitable monopolies in spices and gold.

Official chroniclers ignored discovery voyages when policy demanded; or chapters indiscreetly written might be suppressed.

As for hazards of crossing the Atlantic, the Portuguese historian rates this voyage, with its helpful trade winds and the equatorial stream, as far less daring than sailing from Europe to Africa's Cape of Good Hope.

Portugal's story, built from deductions and bits of evidence, shows Portuguese navigators reaching land northwest of the Azores—identified as the Newfoundland bank—in 1452, but they did not land. By 1486, it continues, Portuguese navigators knew of a continent to the west, and Brazil was known to them before Columbus' voyages. And in 1492, the Portuguese historian says, there is a map which places the land to the West in a fairly correct position.

Columbus will doubtless go on being "Columbus" to most of the world. But discovery of America by Portuguese is, so Dr. Cortesao tells us, "a historic fact for the majority of Portuguese historians."

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CHEMISTRY

Patent Granted on "Three In One" Hand Gas Grenade

THE U. S. Patent Office has granted a patent to a Pittsburgh inventor on a gas grenade that may be described as three grenades in one.

The grenade, to be thrown by hand, consists of three sections, each of which may explode separately and scatter gas at a point distant from the others, the patent papers reveal.

The patent, number 2,094,562, has been assigned by its inventor, Alexander Lowy, to the Federal Laboratories, also of Pittsburgh.

Three or more sections, each containing gas, can be built into the grenade. The ignition mixture which sets off a section is a sufficiently powerful explosive not only to scatter the gas in the section, but completely to separate the section from the remainder of the grenade. In effect, when used, first one section would go off, then a second a little further along the grenade's flight, with additional explosions until the grenade is exhausted.

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MEDICINE

National Advisory Cancer Council Appointments Made

NAMES of six men who will help the federal government in its new drive against cancer have just been announced by Surgeon General Thomas Parran, U. S. Public Health Service, with the approval of the Secretary of the Treasury.

These men who will form the National Advisory Cancer Council are: Dr. James Ewing of Cornell University Medical College and Memorial Hospital, New York; Dr. Francis Carter Wood, director of the Institute of Cancer Research at Columbia University; Dr. C. C. Little, director of the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Me.; Dr. Arthur H. Compton of the University of Chicago; Dr. James B. Conant, president of Harvard University; and Dr. Ludvig Hektoen, director of the McCormick Institute for Infectious Diseases, Chicago, and member of the Board of Trustees of Science Service. Surgeon General Parran is an ex officio chairman of the council.

The first meeting of the new council will be held as soon as possible, probably in October, to consider rules and regulations for grants-in-aid and fellowships in cancer research and minimum requirements for treatment centers to which radium will be loaned by the National Cancer Institute. These grants and loans will be the first guns fired in the war against cancer which was started on a nation-wide basis by the act of Congress providing for the National Cancer Institute.

The Cancer Institute will be erected at Bethesda, Md., part of the National Institute of Health of the U. S. Public Health Service. Congress provided \$750,000 for the building and equipment and another \$700,000 annually.

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ENGINEERING

Injured Ships Saved From Ship Graveyard by Welding

See Front Cover

THE modern ship's doctor heals the wounds in a worn hull by welding as shown on the front cover of this week's *SCIENCE NEWS LETTER*. The injured stern frame pictured there belongs to the cargo ship "Alabaman" receiving first aid at the Oakland, California, yard of the Moore Drydock Co. The "surgical" apparatus is made by the Lincoln Electric Co.

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