

Volcano Expert Forecasts Eruption

Volcanology

Hawaii may expect an eruption of either Kilauea or Mauna Loa, its two largest volcanoes, in 1929.

This is the prediction made by Dr. Thomas A. Jaggar, director of the Hawaiian Volcano Observatory, maintained by the U. S. Department of the Interior. For many years Dr. Jaggar has kept careful watch on these volcanoes. Upon this study and the records of volcanic eruptions during the nineteenth century, he has based his prediction.

"In 1912," he said, "I wrote that Mauna Loa should become active before 1915; it broke out in 1914. In 1917 I wrote that a great crisis in Hawaiian volcanism should come around 1920; both Kilauea and Mauna Loa had flank outflows within the twelvemonth preceding July 1, 1920, and a great explosive crisis came in 1924. In 1923 I wrote that the nine-year cycle following 1913 would probably be unusually long and

representative of the long-term intervals such as 1868 and 1790 had illustrated; the 1924 engulfment accompanied by shore collapse at Kapoho was a close parallel to 1868."

Japanese, Italian, Hawaiian and Caribbean volcanoes show that 130 years approximately is a common interval between big eruptions or earthquakes near eruptive centers, or both, he pointed out. However, he said. Vesuvius and Kilauea both show a minor interval of nine or ten years between eruptions, and the larger volcanoes, Etna and Mauna Loa, average their outbreaks at four or five-year periods.

"It is not permissible to say that Kilauea and Vesuvius shall break out every nine years, or Mauna Loa and Etna every four and a half years," Dr. Jaggar stated. "A volcano is not a clock. The interval theory is based on averages, and the averages are based on certain laws of nature such

as those that determine the space intervals of ripple marks in the sands of the sea or the time intervals of waves when they break rhythmically on the beach.

"The lava under a volcano has been pressing upward for ages through a crack of a certain size. It has blocked or impeded that crack with its own heap of lava and so has forced itself to adopt a rhythm or interval like the puffs from a steam engine. If it has several vents, these divide responsibility for the interval, and if one vent is low and close to the water table, while the other is high and far above the ground water of the island the probability of explosion is greater for the lower vent. This is because a sudden drop in the lower vent may place the lava column below the water table and so develop a steam chamber. This is the situation of Kilauea as compared with Mauna Loa."

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Echo Tells Position

Physics

Methods of locating a ship's position by means of automatic radio signals sent out from shore stations upon the receipt of a sound signal through the water from the ship have now reached a high degree of perfection and dependability. This is the announcement made by Col. E. Lester Jones, director of the U. S. Coast and Geodetic Survey, in his annual report.

Depth measurements are made by the survey's ships with the echo sounding device. A sound wave travels to the bottom, is reflected back and the time taken indicates the depth. In order properly to locate the position, however, it is necessary to know the position with respect to fixed points that can be identified on maps. With radio this can be done at night or in cloudy weather.

"In radio acoustic sound ranging," said Col. Jones, "a sound is produced at the survey ship which travels through the water to two or more shore stations, which automatically send wireless signals to the ship as soon as the sound arrives. This gives a measure of the distance of the ship from each station. Knowing the location of the two stations from previous surveying, the three sides of a triangle are known from which the ship's position can be computed."

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Viking Art on Christian Churches

Archaeology

In old churches in Norway, built by the Vikings for the worship of the Christian God, there may be seen strangely incongruous carvings representing the pagan myths of the Norsemen, Ben Blessum of New York stated in a lecture before the Archaeological Society of Washington.

Sigurd's adventures with the dragon, as made famous in one of the old Norse sagas, are clearly portrayed in churches built about the end of the Viking period. The only plausible explanation seems to be that these wood carvings had originally been the portals and door jambs of temples to Odin and Thor and that they were transferred intact to Christian churches, the speaker said.

Mr. Blessum, who is himself a Norwegian, described medieval farmsteads in Norway which are still standing. Doors of these Viking homes are so low that one must stoop to enter. In the middle ages, if a visitor threatened to make trouble, this gave the man of the house a chance to make effective use of an axe on the intruder's head.

The history of the Vikings was written chiefly by the people that they conquered, and that is why they have been given such a reputation for being

uncouth, lustful savages, he pointed out. Yet evidence found in their own country refutes this view and shows that they had attained a high degree of culture at a time when the rest of Europe was in the Dark Ages. The Vikings established the first overseas trade that England had. They had an excellent legal system. They lavished art on everything that they used, from houses to horse collars.

Until a merchant ship that had been sailed by the Vikings was discovered at Gokstad, in 1881, there was much controversy as to whether Lief Ericsson could have sailed across to America in the tenth century, or whether "Vinland" was really some unknown coast nearer home. The Gokstad ship, dating back to about 900 A. D., proved that they had a means of transportation equal to such a voyage, Mr. Blessum said. In 1893 inexperienced sailors took a boat made like it and successfully sailed to America. The Vikings were in touch with the world, even the new world of America, the speaker declared.

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California's gold was never worked or mined by the Indians.