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THE VOLCANO LETTER

A Weekly news leaflet of the Hawaiian Volcano Research Association

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KILAUEA REPORT NO. 755

WEEK ENDING JUNE 30, 1926

Issued by the Observatory, U. S. Geological Survey:
R. H. Finch, temporarily in charge.

Halemaumau shows no signs of activity. The most conspicuous steaming vent in the pit is at the northwest. Faint sulphurous odors may be distinguished on the rim.

The number of earthquakes recorded during the week was 16. Four of the earthquakes were slightly perceptible at Observatory. Two that occurred at 9:20 p. m., June 23 and at 11:18 a. m., June 27 respectively, caused pheasants to squawk and had indicated distances to origin of one mile. The strongest shake of the week occurred at 3:27 a. m. June 30 and had an indicated distance of 14 miles.

A distant earthquake was recorded at 4:08 a. m. June 29 with an indicated distance of 4750 miles. A shake was reported from near Singapore about this time.

Tilting for the week was moderate to the East-north-east.

SUBMARINE VOLCANOES

It is not uncommon for sea captains to report passing through seas of pumice or turbulent waters, the result of submarine volcanoes. When one considers the number of land volcanoes and the fact that three fourths of the earth's surface is covered with water it is easy to imagine a rather large number of volcanic vents on the ocean floor.

Before a great many of the present day active volcanoes developed in height so that their throats remained permanently above water they would have been classified as submarine volcanoes. Many known extinct volcanoes passed through the submarine stage. Both Vesuvius and Etna as well as Stromboli started from the floor of the Mediterranean.

Numerous islands in the Pacific ocean are of volcanic origin. Others that are classified as coral islands may be really volcanic with a coral cap. Islands might be covered with a coral growth either if their summits never quite reached to sea level before the volcano became extinct or if they were once higher and were eroded to below sea level. The great depth of the ocean around many of the coral atolls in the Pacific ocean points to a volcanic foundation.

The elevation of entire islands or parts of them may have been greatly reduced by subsidence. Penguin Bank

west of Molokai in the Hawaiian group may have been much higher once and its elevation reduced more by subsidence as a whole than by erosion. The outline of the Bank is marked by submerged cliffs where the depth of the water abruptly changes from an average of 240 feet to an average of 1320 feet. Magnetic observations as well as topography indicates that the base of the coral atoll of Funafuti in the Ellice group is of volcanic origin. A boring in this island to a depth of 1114 feet, however, failed to reach the igneous base. The island may have been sinking coincidental with the coral growth.

The Hawaiian Island group have been elevated from a depth of 15,000 to 18,000 feet below sea level, unless we assume the rather untenable theory that the group is but a remnant of a large land mass now submerged. The volume of land of the Hawaiian Islands above water is but a small percentage of the great volume below sea level. This volume relation is true of the majority of volcanic islands because there is a great ocean deep adjacent to nearly all volcanic regions.

Occasionally at the present time new islands are born. Some live for but a short time while others make permanent additions to the land mass above sea level. An effect of the short-lived volcanic island may be the production of a shoal where once there was deep water. Graham Island was born in the Mediterranean about 30 miles southwest of Sicily in July 1831. The birth was heralded by a column of water 800 feet in diameter and 60 feet high quite suddenly appearing at a place where the Mediterranean was 600 feet deep. The water column was shortly followed by steam clouds and presently an island of pumiceous material appeared. It quickly reached a height of 200 feet with a circumference of three miles. Within six months the island had quite disappeared though the top of its submerged remnant is but 9 or 10 feet below sea level. In 1891 there was a submarine eruption in this same general region but no island appeared. Near Bogosloff volcano in the Bering Sea an island, New Bogosloff, appeared in 1883. It appears to be a permanent addition to the land in Bering Sea. Near the Azores a short-lived volcanic island was formed in 1811. A submerged volcano near Saint Miguel in the Azores appears to be active occasionally. Several temporary islands have been reported in the Pacific. Some that persisted for a few years and were several times observed were placed on maps but later on utterly disappeared.

R.H.F.