Necker Aug 20-21, 1955

see

Volcanoes in the Sea

by

MacDonald and Abbott

Adv Aug 9, 1956

Dr. Eaton Cites Algae Discovery

Necker, Earlier Oahu 'Eruptions' Now in Doubt

The man who tends Hawaii's active volcanoes said yesterday he now doubts there have been underwater eruptions in or near the Hawaiian Islands during the past year.

A series of discolorations in the water near Necker Island, between Kauai and Oahu and off Oahu to the south, said Dr. Jerry Eaton, probably are all the result of the same thing: floating plant life.

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DR. EATON, volcanologist on the Big Island, said his tentative conclusion is based on the recent verdict of Dr. Agatin T. Abbott of the University of Hawaii geology and geophysics department. Dr. Abbott last week examined material taken from the sea 12 miles off Koko Head and pronounced it plant life—algae. He said it definitely was not volcanic in origin.

Dr. Eaton's statement yesterday was the first from a responsible scientific source dealing with the August and September, 1955, phenomena near Necker Island, 430 miles northwest of Honolulu and between Midway and Oahu.

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EARLIER, there had been widespread speculation that these surface discolorations might be indications of underwater eruptions in an area where no volcanic activity has been known to occur for 10,000 years.

The 1955 discolorations and those reported in May this year off Kaena Point between Oahu and Kauai were similar. The sea was said to be stained yellowish-green over wide areas. In some cases, low-flying observers said they smelled sulphurous fumes. Some bubbling and boiling was reported. In several cases witnesses agreed that the water around the discolored areas was abnormally calm.

When the first reports from Necker Island came in, the scientists said the evidence pointed to an undersea eruption. However, they did say their conclusions were based on visual evidence and not on analysis of material floating in the sea.

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DR. EATON NOTED yesterday that the material dredged up off Oahu last week by Dr. Abbott was the first sampling to be taken from the ocean at a point where any discoloration was sighted.

At the same time, he said, still further evidence would be desirable. He said there still is no definite proof of a tangible nature that none of the underwater disturbances was not volcanic.

However, he said, he now is inclined to believe that there have been no underwater eruptions anywhere in or near the Hawaiian Chain.

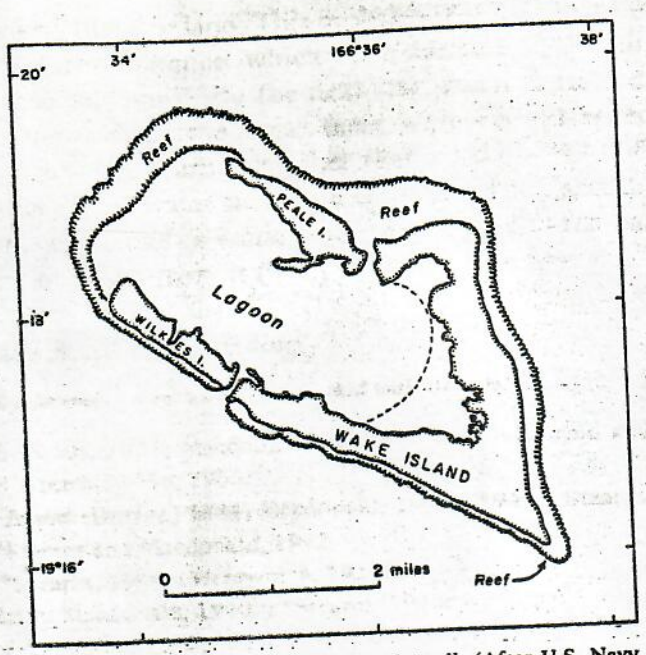


Figure 288. Map of Wake Island and Atoll. (After U.S. Navy Hydrographic Office chart.)

tains (see chap. 11), then curves to the northwest and extends beyond Marcus Island. Wake lies about 2,300 miles N 85° W of Honolulu. A large portion of the atoll has been built above sea level by sand (fig. 288). The main island (Wake) is V-shaped, each leg of the V being about 3 miles long. Lying northwest of the legs of the V, Wilkes and Peale islands are each about 1.5 miles long. The tops of sand dunes on Wake and Peale islands reach about 21 feet above sea level, and those on Wilkes Island, about 18 feet. The airport is located on Peale Island. Like the atolls of the Hawaiian chain, Wake lies on the summit of a great wave-truncated shield volcano.

VOLCANIC ACTIVITY

Before leaving the Leeward Islands mention should be made of an apparent volcanic eruption in the area in 1955. On August 20, persons aboard a plane bound from Tokyo to Honolulu sighted what appeared to be a column of smoke rising from the ocean about 55 miles N 85° E of Necker Island. On close approach they saw an oval patch of steaming turbulent water about a mile across, surrounded by a thin line of yellowish surf, with yellowish water drifting away from it. Near one end of the oval was an area of several thousand square yards of

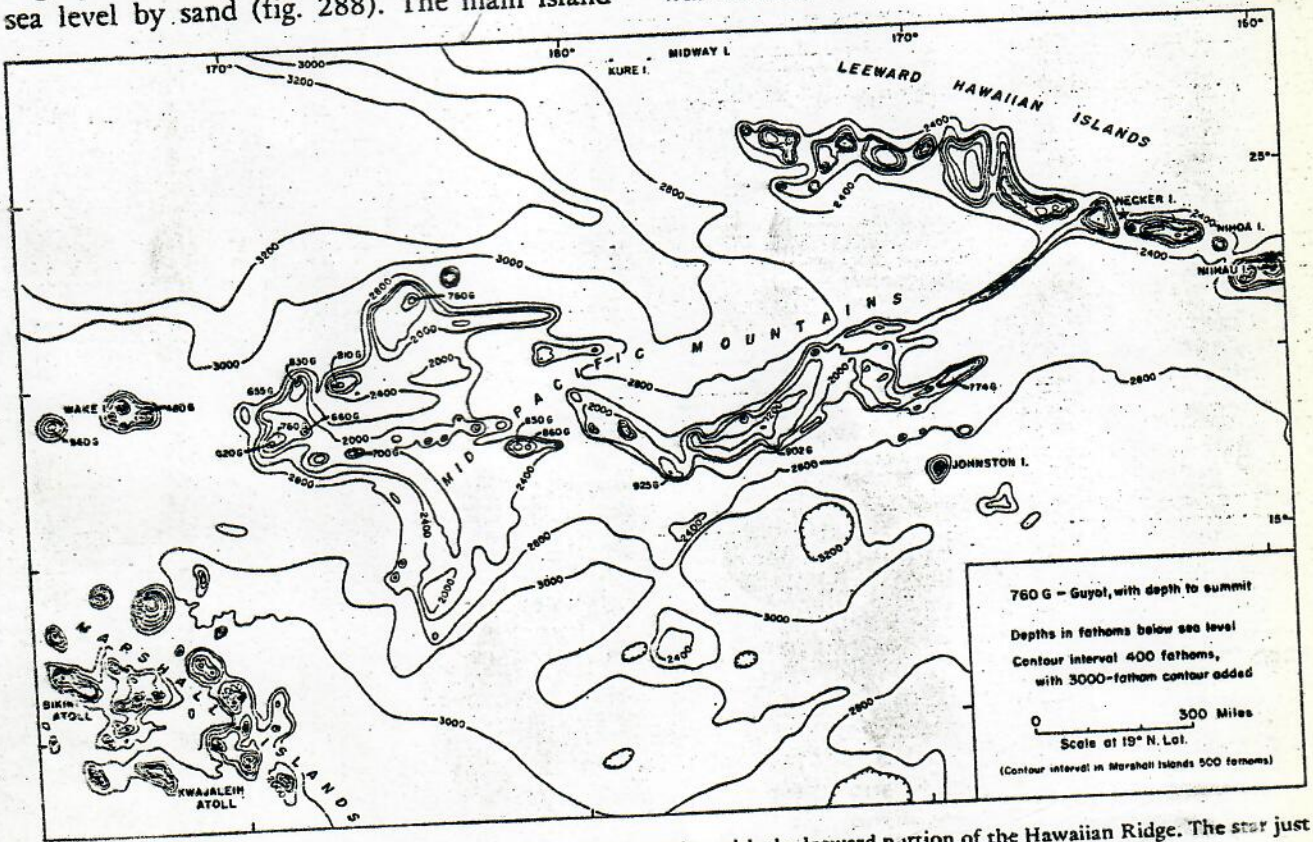


Figure 289. Map of the Mid-Pacific Mountains, showing their junction with the leeward portion of the Hawaiian Ridge. The star just east-northeast of Necker Island marks the site of a submarine volcanic eruption in 1956. (Modified after Hamilton, 1956.)

what looked like dry land. This probably was a raft of floating pumice which soon became waterlogged and sank. By the next day, when other planes visited the area, there were no further signs of disturbance other than a slick appearance of the water surface in the formerly turbulent area and a series of long swells sweeping outward from it nearly to Kauai. The locus of the eruption lies just north of the Hawaiian Ridge on the northeastward projection of the Mid-Pacific Mountains and the Necker Ridge (fig. 289), in a depth of about 12,000 feet of water. This is the only volcanic activity which has occurred in the northwestern part of the Hawaiian chain in historic time.

Suggested Additional Reading

(principal references for each island are marked with asterisks)

General: Hinds, 1931; Macdonald, 1949*a*, 1968; Macdonald and Katsura, 1964; Malahoff and Woollard, 1966, 1968; Stearns, 1946, 1966*a*

Hawaii Island: Dutton, 1884; Macdonald, 1947*a*, 1949*b*; Stearns and Clark, 1930; *Stearns and Macdonald, 1946

Maui: *Stearns and Macdonald, 1942

Lanai: *Stearns, 1940*c*; Wentworth, 1925*a*

Kahoolawe: Macdonald, 1940*b*; *Stearns, 1940*c*

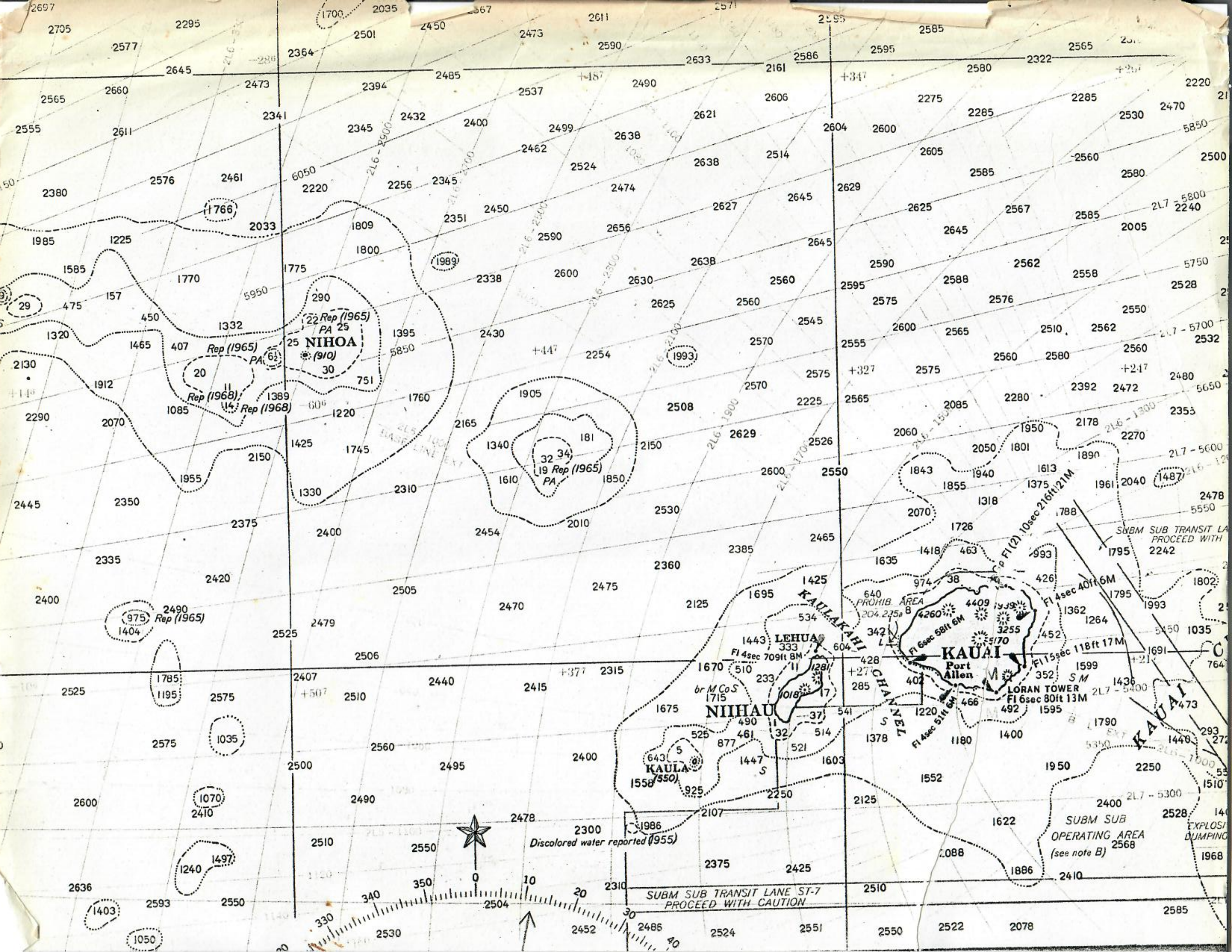
Molokai: Lindgren, 1903; *Stearns and Macdonald, 1947

Oahu: *Stearns, H. T., 1939, 1940*b*; *Stearns and Vaksvik, 1935; Stearns, N. D., 1935; Wentworth, 1926, 1951; Wentworth and Winchell, 1947; Winchell, 1947

Kauai: Hinds, 1930; *Macdonald, Davis, and Cox, 1960

Niihau: Hinds, 1930; Macdonald, 1947*b*; *Stearns, 1947

Leeward Islands: Bryan, 1942; Ladd, Tracey, and Gross, 1967, 1969; *Palmer, 1927, 1936; Washington and Keyes, 1926


KAUAI
Port Allen
LORAN TOWER
Fl 6sec 80ft 13M
PROHIB AREA
KAULAKAHI CHANNEL
LEHUA
NIIHAU
KAULA
NIHOA
SUBM SUB OPERATING AREA
(see note B)
SUBM SUB TRANSIT LANE ST-7
PROCEED WITH CAUTION
Discolored water reported (1955)