Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Tuttleman
Superintendent.

State: Hawaii

DESCRIPTIVE REPORT.

Topo. Sheet No. 3435

Locality: Lanai-Moana
East 7 South 3435

1914

Chief of Party: J. B. Miles
1. REPORT, LIMITS, SCALE, METHODS, OBSERVER.

I have the honor to report as follows upon topographic sheet Z, which shows the topography of the eastern part of Lanai Island, Hawaiian Islands, as done in January and February, 1914 by a party from the steamer PATTerson. On the south and west the sheet starts at Kaea, on Cape Kaea, and thence extends east, north, and then west, around the southern, eastern, and northern sides of the island respectively, ending at Kaena Point. The scale is 1:20,000 and the plane table was used exclusively. The work was done by a party in charge of William V. Hagar, Aid, C. & G. Survey.

2. CONTROL, TRAVERSES, HEIGHTS.

The work was done in advance of the triangulation and was afterward fitted to the projection. The traverses were supported by frequent stations determined by triangulation and a proportional linear adjustment made. West of Ip the traverse was not correctly oriented and was therefore adjusted, the error amounting to 1270 meters at Kaena. The amount of adjustment for error of closure of each signal is given in the list of positions of plane table signals. All heights as given were determined by the plane table and are above high water level.

3. GENERAL REMARKS, GENERAL CHARACTER OF SHORE LINE; VEGETATION.

The shore line of the island is very regular and there are no deep bights. The southern shore of the island is very rugged and, except at Manele Bay, is bordered by perpendicular bluffs ranging in height from twenty to four hundred feet. From Kamalike Point to the west end of the sheet, there is a coral reef, extending from 200 to 450 meters off shore. Within the reef the shore is with few exceptions either sandy or pebbly. There are few breaks in the reef. Vegetation is very scarce near the shore
line. Commencing near Kamaika Point and extending a little west of the village of Kehamoku is a fringe of algaroba trees varying in width up to about half a mile. Among the algarobas are also a few cocoanuts. On the south side of the island are numerous steep gulches. Here there is very little vegetation and the ground is in many cases almost completely covered with large, somewhat weathered, volcanic rocks. On the north side of the island close to the shore line in many places are sand hills, while further inland one again finds a large amount of volcanic rock. There is little rain fall on the island and what rain does fall rushes off quickly. The small streams to be found near the shore are usually nearly or quite dry except immediately after a rain fall. On the northeast side of the island are several gulches leading up toward the mountain, two of which are especially prominent.

4. **DETAILED DESCRIPTION OF SHORE: PROMINENT POINTS.**

**CAPE KAEA** is a short rocky point about 60 feet high at the extreme southwest part of Lanai Island. From this cape the shore bears nearly due east for about 4 1/2 miles to Puu Pehe Rock. Throughout this stretch the shore is bordered with bluffs varying in height from 20 to 200 feet, except at two or three places where gulches break through. Beneath the bluffs in many places are flat shelves a few meters wide over which the water breaks at high tide. The shore line here is very irregular but none of the irregularities are at all conspicuous. Two and a half miles eastward from Cape Kaea is a small rocky island 40 meters wide, 150 meters long, and 78 feet high lying about 30 meters off shore in a small bight. 3 1/2 miles eastward from Cape Kaea is **PAAKAI POINT**, a small projecting point with high bluffs. **PUU PEHE ROCK** is a large offlying rock about 45 meters in diameter and 110 feet high. Its sides are perpendicular bluffs. It lies about 40 meters off the point which forms Manele Bay. Between it and the point is a rocky reef which is partly bare except at high water. In the bights at either side of the point off which Puu Pehe lies, is a short sand beach. Southeast of Puu Pehe Rock about 270 meters is a rock which bares about 3 feet at high water. A rocky spit extends out about half way to the rock. At the east side of Manele Bay is another rock about 270 meters off shore and also baring about 3 feet at high water. From Puu Pehe Rock the shore extends generally in a northeast direction a distance of about 3 1/2 miles to Kamaika Point. For the first half of this distance the shore is bordered by high bluffs cut through by several deep gulches. These bluffs attain a maximum height of over 400 feet just east of Manele Bay and then gradually decrease to about 50 feet. 3 miles from Manele Bay is an offlying rock 30 feet high and about 20 meter off shore. From this rock to Kamaika Point the shore is bordered by low bluffs 40 - 50 feet high. From Cape Kaea to Kamaika Point the beach is in many places impassable even at low tide and suitable points for plane table sta-
tions were few in number and difficult to get to. Kamaike Point is an indefinite point projecting but little from the general curve of the adjoining shore line. From Kamaike Point the shore line bears about NNE about 3 1/2 miles to Wahapuu Point, a broad sandy point at the extreme eastern part of the island. About 1/4 of a mile from Kamaike Point the bluffs give way to a sandy beach. A coral reef extends out about 200 meters from the shore line, while inland is a narrow fringe of algaroba trees. From Wahapuu Point the shore bears north and west to a broad rocky point with low bluffs known as Wahie Point. Throughout the greater part of this stretch the offlying coral reef is quite wide, ranging from 300 to 500 meters. About 4 miles from Wahapuu Point the fringe of algaroba trees ends. Three miles from the point are the ruins of two large fish traps. A mile and a half from the northeastern fish trap is a conspicuous deep gulch leading up into the mountains. 2 1/2 miles from this gulch is Kruehau Gulch, another gulch which is especially conspicuous because it is forked. From Wahapuu Point to the end of the sheet the shore line continues to be sandy for the most part and inland in many places are sand hills. West of Kruehau Gulch the coral reef gradually becomes narrower. A mile west of Wahie Point is Papau Point, a low point of sand not very conspicuous. From Papau Point the shore bears nearly due west about 3 1/2 miles to the end of the sheet.

5. SETTLEMENTS: NATIVE: RESOURCES: FISHING: GRAZING: COMMERCE.

There are few settlements on the island and these are all on the eastern and northern sides of the island. Kahale Palaoa, Kehamoku, and Kaa are the only villages within the limits of the sheet. At Kehamoku there are about a dozen families, at Kahale Palaoa about half that, and at Kaa only two. The inhabitants are nearly all natives except for one or two Japanese families. There are also a few inhabited houses hid by the algaroba trees between Kamaike Point and Kahale Palaoa and two or three scattered houses just west of Kaa. In several places the ruins of abandoned villages were found, especially on the northern coast. Fishing is practically the only resource of the natives along the shore and there is not rain enough for them to raise even their own taro. In the interior of the island are two quite large ranches, one cattle ranch and one cattle and sheep ranch. Commerce is confined to trade with the other islands. At Manele there is a fair landing for pulling boats. Cattle and sheep are shipped from here to Honolulu, and there is a regular steamer service. At Kahale Palaoa is a wharf extending out 90 meters with 3 feet of water off the face at mean low water. The wharf was built originally for a proposed sugar plantation but the project later abandoned. At Kehamoku there is a small fish trade carried on with small boats to Lahaina.
6. **GEOGRAPHIC NAMES, AUTHORITIES, LIST.**

Below is given a list of geographic names of the most prominent points. The authorities taken were the old charts and names obtained by inquiry among the natives. Many of the villages shown on the old chart are now abandoned.

Cape Kaea
Paakai Point
Puu Pehe Point
Manele Bay
Wahapuu Point
Kaa Village

Kuahua Gulch
Wahie Point
Papau Point
Kamaike Point
Kahale Palaoa Village
Kehamoku Village

7. **MAGNETIC DECLINATION.**

The magnetic declination was carefully determined with the plane table in orientation at Puu Pehe and found to be 11° 36′ East.

Respectfully submitted,

William V. Hagar

APPROVED:  
Aid, C. & G. Survey.

James B. Miller  
Assistant, C. & G. Survey,  
Commanding.

Honolulu, T. H.,  
April 1914.
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Minutes in red are for adjusted positions.