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EFFECT OF A TIDAL WAVE ON SOME SEA BIRD NESTING ISLANDS

By George C. Munro

It was my good fortune to visit the little island of Kapapa on Sunday, March 31, 1946, the day before the tidal wave broke upon it. Since my last visit there in 1938 it had become necessary to secure a permit from the Navy to land on the island. This I had, so was well within my rights to spend an interesting few hours observing the birds, leg-banding a few and marking their nesting burrows. I have always been interested in the flora of these offshore islands and have been a warm supporter of Forester Charles H. Judd in his project to make one of them a sanctuary or place of survival conservation for native plants disappearing from the mainland shores. So as usual I cast my eye on the vegetation as well as the birds. When I first visited Kapapa in June 1938, bent on my study of Coastal Birds, I saw no wedge-tailed shearwaters on the island. This seemed strange as they were present on most of the other coastal islands. But later, in October 1945, I found these birds had formed quite a colony, and that, in spite of the fact that Kapapa had been a Navy bombing target and had been repeatedly bombed from end to end. I was probably the last person to see the island with the observing eye of the naturalist before the tidal wave, and I carried with me a mental photograph of the locality which was overwhelmed and largely devastated a few hours later.

Soon after April 1, I went to the mainland for a few weeks' visit and it was not till June 8, that I was able again to visit Kapapa and view the devastation caused by the wave and make comparisons. I found that the succession of waves (there were six recorded in other places) had obliterated most of the shearwaters' old nesting burrows and the numbered marking pins driven into the ground. Sand had filled the burrows and all the birds that were in them at the time had been buried alive. The birds on the surface were evidently overwhelmed, and their feathers soaked by the first wave and drowned by succeeding waves. A score of dead birds were scattered over the island but none of these had been banded on March 31. It may seem incredible that sea birds could be so easily drowned, but this is quite possible under certain conditions. Two banded birds have since been found that undoubtedly had been absent when the wave struck and so survived. The shearwaters were just beginning to gather at the island to renovate their three foot long nesting burrows and as some leave the island at daybreak probably from 30 to 50 pairs escaped. These will suffice to start the colony afresh. Banding of these will be continued and all burrows marked. A few will be kept under observation to check up on alternating brooding habits of the parent birds. There is already some evidence that the sexes change weekly. The others will be left undisturbed till the chicks appear at the end of July. This easily accessible colony will furnish much information on this interesting species in the coming years.

That you may know just where Kapapa lies, in case you have occasion to visit it, or wish to name it by sight when going round the island, the following description will suffice.

The island of Kapapa is situated a little to the southeast of the middle of the seaward side of the coral reef enclosing Kaneohe Bay from the open sea. Kaneohe Bay is on the east side of the island of Oahu of the Hawaiian Group. It is north of Honolulu which is on the south side of the island opposite. The bay extends about 8 miles along the shore and is from two to three miles wide from the shore to the outer part of the reef. The reef, which lies northeast and southwest is about 5½ miles long between two projecting points of land. The outer edge of the reef seldom, if ever, shows above water. The only coral islands on the outer reef are Kakepa on the southeast end and Kapapa near the middle. The volcanic island of Mokulii is at the western end of the reef close to the shore. Kakepa is a small raised part of the reef about 20 feet high, much undermined by the sea and shaped like a mushroom. The top is almost inaccessible because of its peculiar formation.

Kapapa, a lesser raised part of the reef lies east and west. There are about 3 acres of soil covered land, about 600 feet long and about 300 feet at its widest, tapering to both ends. It is said that at one time an old native cultivated sweet potatoes on the island. Along the north east and seaward side there is a flat of jagged coral rock which is only covered by the highest tides. At the west end there are several large detached rocks separated by shallow water at low tide and swept by high seas in heavy weather. There is no vegetation on them. On the north side a ridge has been built up of sand and gravel by the sea and wind to about 15 feet at the west end lowering to about 3 feet at the eastern extremity. The seaward slope of the western end of this ridge for about 250 feet was covered with a thick shrubby growth of Naupaka Kahakai (Scaevola frutescens). The rest of the distance to the east was faced by a bank of sand and coral gravel. Other native plants covered a flat on the south side. Many years ago Mr. Charles H. Judd, the Chief Forester, had a project to make the island a refuge for rare native coastal plants that were threatened with extinction on the larger islands. As a protection for these he planted a windbreak of ironwood trees on the leeward side of the seaward ridge. There are now six small groves of these from scrub on the east to trees about 15 feet high on the west. The southern side to the little gravel beach at the west end is hard coral rock much undermined by the waves sweeping round the east end and losing force as they reach the west end. This shore is only about 3 feet above high water. A native hau tree (Hibiscus tiliacus) covers a projecting rock which protects the little gravelly beach that is used as a landing. At high water one can land dryshod from the flat bottomed boats used, or more to the east, on the projecting coral at lower tide. At times when the tide is low one has to wade shore. But even when the sea is rough a little way out and high waves breaking on the seaward side a landing can be made. On the extreme west, on a partly detached part of the island there are three walls of a building made of flat blocks of coral. There is a story of a demented person's making his home there alone. On the flat near the western end there is an old native heiau (place for religious ceremonies). This is in the shape of two enclosures, the largest about 15 by 35 feet. Outside of a corner of the smaller enclosure is a low platform of coral stones about 10 by 10 feet with a slight hollow in the top, undoubtedly where sacrifices to the fish gods were made.

The Navy had erected a pyramidical structure or marker about 20 feet high at the eastern end and a light tower at the western end of equal height for use during the war. These remain and the former furnishes a shelter for fishermen camping on the island.

To be concluded

NOTES ON SOME BIRDS OF KAUAI

By Gordon Pearsall

(Continued from January)

Early Sunday morning we started on a trip to Kilauea, Hanalei and Haena. At Kilauea Bay we stopped to do some collecting, stopping first at the Coast Guard Station and Lighthouse up on the cliffs overlooking the bay. In the side of the cliff were burrows the officer told us were Gooney bird burrows. There were about forty burrows in a hundred yard area, all on the windward side of the slope. Some of the burrows had young in them. The first adult bird I removed was the white-breasted wedge-tailed shearwater (Puffinus pacificus cuneatus). The bird left of its own volition from a second burrow when I started poking around. A newly hatched downy gray chick was in the burrow. The adult was of the same species. I peered into most burrows, looking at the sitting birds. Some burrows were deserted. I saw one bird that seemed to have more white on it than the others. Wrapping my hand in my handkerchief, I proceeded to remove it from its burrow. A well-developed chick crouched in the back of the burrow. The upper surface and wings and tail glossy black. The breast and underparts pure white which extended up on the sides of the neck and rump. The bill was brownish-black and the feet yellow with black toes. I saw one more in a burrow with a chick. These two birds were the Newell's shearwater (Puffinus newelli).

We stopped a few minutes at Hanalei to look down into the valley and take some pictures. Strips of white and colored cloth were hung everywhere in the rice and cornfields. Every few minutes there would be a clamor and the watchers from their platforms would pull the strings that rattled the tin cans strung on strings and yell to frighten away the birds that otherwise descend in flocks to eat the grain.

Monday morning immediately after breakfast Capt. Wirth went to Nawiliwili to collect along the beach. I went back to Wailua Falls to explore the cliffs at the base of the falls where I had seen six white-tailed tropic birds. The only way to get to the base of the falls was along the stream in the floor of the canyon. It would be a difficult undertaking as the walls were entirely too sheer and slippery to try and climb down. About a quarter of a mile downstream on the west side of the canyon the descent was gradual enough so that one could reach the stream but about two hundred yards from the falls a sheer cliff stopped any further advance. Retracing my steps I went back up to the road, crossed over the bridge above the falls and followed down along the east side of the canyon. Several times I started down the canyon side through the trees and vines, only to be stopped after a few feet by a sheer drop. I found a place where the kukui trees descended more gradually almost to the water's edge. I finally slithered and slid to the bottom, aided several times by lianas and heavy climbing vines. Following along the edge of the water I was within a few hundred yards of the falls after climbing around and over huge boulders, when the walls suddenly rose straight up with the water running deep at their base. But across on the other side the bank sloped gradually for twenty yards before it joined a sheer cliff. I got almost across the stream by jumping from boulder to boulder. The water between the last boulder and shore looked shallow so I decided to wade the rest of the way to the west shore. Plunging in, the water came about up to my waist. Holding my camera case over my head I waded ashore. I thrilled to the idea that I was attaining my goal, reaching the base of the falls. It was an inspiring sight to see three columns of water dropping about two hundred feet into a deep pool about thirty yards square, throwing spray high in the air. I had marked a spot in the canyon wall about ten yards to the left of the waterfall where I had seen one of the birds disappear. Now I could see this spot about fifteen feet up the wall was

a hole about ten inches in diameter. By hanging on to projecting rocks and trailing vines I managed slowly and painfully to pull myself up to a narrow ledge where a hole in the wall ran back into the depth about three feet. As I reached a point where I could pull myself up high enough to peer into the hole by hanging on to a bush growing from the cliff side, the bird flew out, uttering a loud harsh squawk. The sun reflected into the hole enough to light the interior. At the back of the hole, which enlarged about two feet back, I could see a well-developed youngster covered with gray down. The parent birds were circling in the canyon, scolding. Four other birds joined them but did not scold. Slowly I lowered myself down a few inches at a time. When I was about six feet from the bottom the brush to which I was holding suddenly gave way and I dropped to the bottom, grabbing wildly at anything that might stop me. I slid along on my face and chest on the wet, slippery bottom for another ten feet before coming to rest against a boulder. I was unhurt except for a sprained finger. I picked myself up and started back along the west canyon wall, much elated for I had found the nest and young of a tropic bird. About fifty yards from the falls the wall sloped some, hidden by trees. Upon examination I found niches carved in the wall to form steps. Slowly I climbed up these steps, coming out under a heavy clump of lantana and hau trees, about fifteen feet from the road. My morning trip had been a complete success for I had scaled both walls of the canyon, gotten to the base of the falls, and found a tropic bird's nest.

We hurried back to the hotel as we had to check out by noon and the taxi was to pick us up and take us to the airport for our flight back to Honolulu and work.

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CHRISTMAS CENSUS 1946

THE TANTALUS GROUP: "While it was still dark the group taking the Tantalus trail set out, a trifle dismayed at the light rain. By the time the entrance to the trail was reached, the rain had stopped, and five shivering census takers started slowly along the side of the mountain. There was little sound of activity among the birds for the first half hour - evidently we were too early for them on this chilly morning. Soon, however, bird notes were heard on every side; the song of the hill robin, interrupted by his harsh scolding note as he perceived the intruder, was most common. Even a very conservative count emphasized the increase of the hill robin during the past few years. White-eyes called from the trees and soon the amakihi made himself heard, but very rarely did we catch more than a glimpse of the shy little yellow-green bird. The elepaio on Tantalus is apt to be more retiring than he is in less frequented areas, but we heard his call often, and coaxed several from their hiding places. For most of us the high point of the trip was the sight of an apapane, perched in plain view, so that his black wings showed to great advantage against his crimson body, but from the viewpoint of the count, we should consider greater good fortune the sight of an owl, circling slowly above Pauoa valley in the bright morning light, since that was the only owl in the day's count!

"We felt ourselves fortunate in several respects - a delightful morning, cold, with only occasional dashes of rain, but an ominous sky which kept the trail deserted except for ourselves; a route short enough so that we could spend time listening and watching for birds, and admiring them when seen. And if the trail in spots were ankle deep in mud, that could not dishearten us! Our final tally showed eight species."

WOODLAWN-ST. LOUIS TRAIL: "Is December 29th to be the same as the other days of the past week, rainy and windy? I knew that since I am always lucky, this day would be a perfect day to take the Christmas census, but for a moment around 5:00a.m. my enthusiasm about my lucky star was at the lowest ebb, for I heard the pit-pat outside. I knew if it was raining at home the ti-leaf slide at Woodlawn would be wet as could be. The trail is steep enough without being slippery, but lo! after making excellent connections with the usually undependable Sunday morning bus schedule, I was able to catch the 7:00 a.m. Woodlawn bus, and I was much more pleasantly surprised when I reached the ti-leaf slide before 7:30 and as I jumped off the bus and ran up the trail it was quite dry and the sky was very clear except for the few dark clouds over Tantalus. Not only the Kentucky cardinals but also the white-eyes, mynahs and barred doves were singing and flying all over Woodlawn Drive. At a distance were hill robins and even elepaios. I felt so glad for the fortunate people living here to wake up to the wonderful outdoor symphony.

"When I heard my first elepaio I could no longer sit still, so I quickly got up and started on the trail. The smell of the trees after a rain, the soft breeze, the luke-warm sun trying to cut through the mist and the melodious songs of the birds all made me so thankful for all I had that I forgot myself and hiked for about ten minutes, then suddenly realized that I was supposed to be with three other people, so I hurriedly slid down again to the bus stop. I was just in time for the bus and the shower. The rain cloud over Tantalus half an hour ago was over us and gave a good sprinkling before the others were even able to get off the bus. I don't know whether my excitement caused me to imagine it, but the others seemed just as happy and enthusiastic about the hike as I was. As soon as the rain stopped we started to climb the slide. There was enough undergrowth to keep the ground comparatively dry. 'Kentucky Cardinal - one, white-eye - one, barred dove, another white-eye.' 'How do you know you're not counting the same birds?' 'We don't.' 'We know definitely that we're not counting all the birds here, for many of them are not cooperating with us, and some of them are so rude as not to answer our inquiring whistles.' Taking a steep climb is advantageous sometimes, because we are forced to look around for excuses to stop, and birds in the valley as well as the blue ocean and the cloud formations are always at hand. I have seen Chinese thrushes on this trail, so I watched for them, but unfortunately we heard them but didn't see any. Two years ago hill robins were flying all over the trail, but today we only heard them in the valleys. We were very fortunate with amakihi, white-eyes and elepaios. Amakihis were all over. The characteristic nasal 'ki' call and their shy fluttering around as to scold us for intruding but too scared to reproach us any further always amused me, though I feel a wee bit ashame of myself to disturb them. Many times we were so successful as to blend in with the landscape so that the amakihi would rest on a tree top, but only for a moment for us to give each other a smile of satisfaction and gratitude. Elepaios were very plentiful and friendly. They performed for us every time we called them. I always feel much more at ease after an elepaio comes down from the tree tops to welcome us into the forest. We saw linnets or the house finch of California. Three of the hikers were unusually fortunate in seeing a Japanese tit. It has been known to be around Woodlawn, and one of the hikers has been on Kauai where it is well established, and she has seen them there and was quite sure it was a Japanese tit.

"We rested for a while, when we came to the place with lehua blossoms and where iiwi had been recorded, but no iiwi. We were fortunate to see amakihi quite close at hand, elepaios and white-eyes.

"My disappointment was at the end of the ti-leaf slide where we saw a water reservation sign. Evidently they have moved the sign. We were able to hike quite a way toward Tantalus and see apapanes, hill robins and Chinese thrushes. Ah, but luck was still with us. As we were having an early lunch, about 10:30, we heard an apapane, then later we saw the crimson bodied, black-tailed apapane. The location was excellent for observing birds. We were looking into two valleys. Elepaios, white-eyes, hill robins and amakihis were plentiful.

"After a leisurely lunch out trip back home via St. Louis Heights was very delightful. Just a few yards from where we stopped for lunch were bush after bush of strawberry guavas. Land shells were along the trail too. Yes, any kamaaina will know that fragrance. Its the famous white hibiscus of the forest. They are so delicately sweet. Fortunately I saw a blossom on the ground, so I wore it in my hair. It was wonderful to skip along the trail with the fragrance of the white hibiscus following after me. We tried to dodge the clouds but were not quick enough and were caught, but only once. We were commenting on the Manoa housing project and trying to blame the project for the lack of tropic birds when suddenly we heard an apapane and later saw it feeding on the lehua blossoms. While we sat on the rocks to watch it a very friendly elepaio came along to bid us farewell. All along the trail we saw owl pellets, but no owl. As we hiked through the ironwoods and Norfolk pines and heard the wind soughing through the trees, I was unable to say anything except, 'I thank You.'

"As we approached the end of the trail, we saw flocks of rice birds and barred doves. We were again very fortunate with the bus connections and reached home well satisfied and grateful for the wonderful day before 3:00 p.m."

KIPAPA TRAIL: Observers: W. Donaghho, D. Woodside, L. Richards. Lenghth of hike, 7 miles. Weather, Partly cloudy to overcast and raining. Wind, NE trades 0 to 5 mph. Temp. around 75'. Observations: Birds in general were scarce, the list, especially in iiwi and the Oahu creeper, the lowest it has ever been for this trail. The birds seem to have gone elsewhere. The trail began below the forest and passed through the lower forest consisting of Koa, with ohia and kukui and pandanus in the glens, the middle forest with ohia the predominating tree and koa a close second, and with ohia-ha, pelea straussia, bobea and many other trees mixed in, and ended in the rain forest at the summit where the olapa and prichardia palms grew. The apapane was found all along the trail, while the elepaio and amakihi were found in the lower and middle forest zones. The iiwi and Oahu creeper were confined mostly to the middle forest. Of exotics, the white eye was found from below the forest to the Koolau summit. The Chinese thrush, unusually rare or silent, was heard once in the lower forest region and once, with the Hill robin, in the rain forest. A flock of Hill robin were met with at the upper edges of the middle forest region. The two records of cardinals were heard in the lower forest zone, and were in both instances far down below the trail in glens at the edge of the forest. The party missed the Yamagara and the California linnets frequently seen on other occasions on this trail. Of interesting note were two flowering eucalyptus trees well in the forest which attracted a number of apapane and one iiwi.

KAMEHAMEHA HEIGHTS: (Mary Evans' report) Miss Poppin, Mr. Evans and I set out to cover Kamehameha Heights. Very shortly after our arrival there we spied two birds which one of our party took to be mockers. However, the other two upon seeing the white markings on their wings in flight and hearing their raucous cries, were sure they were mynahs. Very shortly the two were in very clear view at the top of a high tree (of the p ine family, I believe). We were then able to see very clearly the slender graceful tail and grey coloring which definitely marked them as mocking birds.

We counted many other birds, but the high spot of the trip came near its close when we came back to the Kamehameha School grounds and one of the mocking birds, perched on the bare branch of a bougainvillea vine not more than thirty feet from us, serenaded us for more than five minutes. We thought we detected cardinal notes in his song, as well as many other beautiful notes, and remembering the first raucous mynah-like cries we had heard him utter, we were better able to understand his name.

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SUMMARY: Oahu, T. H. (residential areas in Honolulu, Alewa Heights, Kapalama Heights Tantalus trail, Wood-lawn-St. Louis trail, Kalihi Flats, Kaelepulu pond, Kipapa trail: ponds, 17%, tidal flats 1%, pasture land 1%, koa-lehua forest 17%, kukui-guava forest 50%, residential area 14%). Dec. 29. Partly overcast, occasional showers; temp. 65 to 82 degrees F.; total miles, 20 (on foot), 130 (in cars). Black-crowned night heron, 20; pintail, 3; mallard, 6; Bluewinged teal, 2; gallinule, 2; coot, 200; Pacific golden plover, 36; ruddy turnstone, 7; wandering tattler, 2; Hawaiian stilt, 36; Chinese dove, 20; barred dove, 63; Japanese tit, 1; English sparrow, 82; rice bird, 44; Kentucky cardinal, 38; Brazilian cardinal, 5; house finch, 7; Chinese thrush, 3; Japanese hill robin, 65; mynah, 70; mocking bird, 2; white-eye, 109; English skylark, 3; Hawaiian owl, 1; elepaio, 77; apapane, 63; amakihi, 44; iiwi, 2; creeper, 1. Total, 30 species, 984 individuals. Catherine Delamere, Walter Donaghho, Charles Dunn, Francis and Mary Evans, Priscilla Griffey, Grenville Hatch, Nancy Kilgore, Uneyo Kojima, Bernice Kuhns, Gordon Pearsall, Blanche Pedley, Hazel Peppin, Larry Richards, Ruth Rockafellow, Euphie G. M. Shields, David Woodside.

CHRISTMAS GREETINGS (belated by our deadline, but nonetheless deeply appreciated) to the Hawaii Audubon Society have been received from Harold Cantlin from Cleveland; from Leslie Baylor from Freeport, Illinois; from Fred Packard, on the staff of the National Parks Association; from Meyer Klein from New York.

DUES FOR 1947 ($1.00) ARE DUE AGAIN. PLEASE SEND THEM TO MRS. BLANCHE PEDLEY, TREASURER. 3770 SIERRA DRIVE, HONOLULU 17, HAWAII.

IN PACIFIC SCIENCE, the new quarterly research journal of the University of Hawaii (V. 1 no. 1 Ja 1947) is an article recommended to all readers of the Elepaio of "Notes on the Red-billed Leothrix", written by Harvey I. Fisher of the University of Hawaii and Paul H. Baldwin of the Bishop Museum, includes information on the species, importation into the Territory, distribution, habitat, description and development of the young, flocking, food, relationships with other animals. The authors deplore the use of the names "Japanese Hill robin" and "Pekin Nightingale" for this bird, "because the bird does not occur in the wild in Japan nor does it occur as far north as Shanghai, much less Pekin or Peiping". Of special value is the complete description of the nest of the species - probably the first description ever to have been published.

FEBRUARY ACTIVITIES:

Bird walk, February 9th, to Waimanu trail. Meet at the Library of Hawaii at 8:30 a.m.

Meeting, February 17th, in the auditorium of the Library of Hawaii, at 7:30 p.m. Walter Donaghho, who was unable to be with us last month, will give the talk on birds of the South Pacific which was announced for January.

HAWAII AUDUBON SOCIETY.

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Dues, $1.00 a year