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NA LAAU HAWAII IN 1954

By George C. Munro

We are now well into the month of November 1954 and there has yet been no winter rains on Diamond Head. Na Laau Hawaii weathered through three extremely dry years, from early in 1951 to late in 1954. This has retarded its development but has given us a wonderful education on what to expect from it. To have seen the growth in 1950, which must have been the result of a long span of years of favorable rainfall and after all the drought to see in 1954 fourteen native plants mature seed there without any care or artificial watering. The summer rains that favored the Koolau Range and Honolulu were extremely light on Diamond Head when they reached there. This surely shows that many more of our dryland plants will succeed there and form a living museum of our dryland plants if exotics are excluded.

Recently I obtained the loan of an aneroid barometer and took with it approximate elevations. I had been under the impression that the city boundary was at the 100 foot level but find that it is only about 50 feet and the Army trail 100 feet. I said in my July 1954 paper that we would try and hold above 150 feet but the location I had in mind is only about 120 feet. Although Na Laau Hawaii could survive even if driven back to the 150 foot level, a lower level would make the project much more valuable. We will try and hold as much as can be allowed us even down to the city boundary but will hold on to our objective even if required to go back to 150 feet. The highest point of Na Laau Hawaii is about 230 feet above sea level. This is where the valleys on either side almost meet, leaving quite a narrow, level pathway along the crest of the ridge for a short distance till it reaches the very steep hillside running to the top of Diamond Head at 760 feet elevation.

Feeling certain with the sympathy of the Governor and Commissioner of Public Lands for our project and the remoteness that this steep hillside could not be used more profitably for anything else, I am going ahead with confidence with its development. To bring an example as soon as possible of what Na Laau Hawaii will be in the future, work is now concentrated on some sections of the steep soil covered northeastern hillside from 130 to 200 feet elevation. Here there is less encroachment of the smaller foreign weeds and most of the native plants naturally growing in Na Laau Hawaii are represented there. Using chemicals and ringbarking, the kiawe and koahaole trees are being killed and when the rains come the smaller weeds will be attended to. The hillside is very steep but has a good covering of soil. The work is made easier by a series of zigzag trails up its face to the top of the ridge. A large amount of seed of native plants have been planted and broadcasted over it this year. Plants of alaweo (Chenopodium sandwichium) from seed broadcasted in 1952 seeded heavily and is now the greenest thing there. Some wiliwilis of which seed was planted in 1950 are now nice looking trees, not much over three feet high, but doing well considering the short spells of growing time they have had. Hoping that vandalism will not impede us again labels will be put by plants beside the trails and typed cards attached telling of the plants and what uses the Hawaiians made of them.

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REGULAR MIGRANT ARRIVES IN HAWAII: PACIFIC GOLDEN PLOVER, GREAT VOYAGER FROM NORTH TO SOUTH ON ANNUAL VISIT

By Sanford Zalburg

(Reprinted from the Nonolulu Advertiser, Oct. 24, 1954)

At dawn on September 7, at Punaluu a bird watcher heard the whistle of a Pacific golden plover, and the next day she saw a flock of 12 birds. Thus, unhearalded the golden plover - the word rhymes with cover - was back from Alaska, or was it Siberia. Back from a summer spent in the tundras of the north and enroute, via the way-station of the Hawaiian Islands, possible as far away as to South Island, New Zealand.

That great flight from north to south - 8,000 miles - is an astounding journey. Other birds make long migrations. The Arctic tern, for instance, goes 12,000 miles from Arctic to Antarctic, but he soars along the coast lines of North and South America. That remarkable voyager, the Pacific godwit, travels enormous distances from Siberia and Alaska to Southeast Asia. But the golden plover's flight from Alaska to New Zealand is perhaps even more astonighing. Undoubtedly he island-hops where he can. But for great stretches between points of land he is flying over ocean sometimes 2000 miles or more. It is a most incredible feat for a bird who is only the size of a mynah.

How does the plover find his way through darkness, rain and fog? How can he navigate over trackless ocean? No one really knows. The migration of the birds mystified ancient man, and, in truth, the migration of the birds still is an unsolved mystery today. Instinct guides a bird. Perhaps he has an "inbuilt radar" system, some naturalists surmise. It seems likely, too, that the birds recognize landmarks far more readily than had been thought possible. He seeks out a familiar bit of terrain and uses it to guide him. Perhaps, it has been suggested, the sun plays a part in guiding these wanderers on their journeys. Perhaps the birds follow the fogs that hang off the coasts of the great land masses of the world. But then, how do they navigate at night? Some people wonder if the effects of the rotation of the earth - this is called the Coriolis forces - help guide birds on their flights. These persons speculate that the rotation of the earth effects the semi-circular canals of the inner ear and serves as a sort of compass. In birds, as well as in humans, the inner canals of the ear are the organs of balance.

Yet these are only theories and plainly man does not know how the birds navigate, expecially the long-range flyers such as the golden plover. How can he find the islands of the South Pacific, these tiny bits of land? And how can he fly these great distances without resting? Perhaps, some naturalists say, he does come down to rest on the water. In fact, he can "sit" on the water. He has been seen doing it. But most naturalists believe that he does not rest en route on flight. It is more likely, they say, that the plover just pushes on and on. Some probably weary and topple from the flock in flight into the sea.

To keep together the plover continually call to each other, a plaintive whistle or cry. Perhaps they even keep in touch by sense of smell. Though it is just speculation, it seems plausible that this might be a plover's flight schedule: In May, he takes off for Alaska from Hawaii and arrives there in late May or early June. There he breeds and in late July or early August sets out for the Hawaiian Islands. The plover arrives here usually in late August or early September.

Some plover stay here for the entire season. The others leave Hawaii in September and arrive in New Zealand, according to New Zealand ornithologists in October. They stay through the New Zealand summer and fly north again in late March or early April. The breeding instinct drives the plover from Hawaii. On the coast of windward Oahu, in May, late in the evening or early in the morning, the golden plover rises in experimental flight; he alights, then spirals up again, way up high, on the journey to the north country. Few people have been lucky enough to see him off.

There in Alaska or Siberia, in the vast tundras, food is plentiful in the summer. The swarms of insects hatch - mosquitoes, gnats, flies. The plover builds a crude nest in a hollowed-out bit of the spongy tundra and lines the nest with reindeer moss. The female lays four spotted eggs that are blotched with dark and light brown specks. Soon after hatching, the young plover is ready to fend for himself. In the vast and empty

tundra there are few enemies in the summer. The weather is warm; the place is friendly. But once August comes, the air crispens and the plover already has gone south.

From Alaska the route of migration can be guessed at. Possibly the bird wings his way down the Aleutian chain to the fog-bound Fox Islands, then sets course for the Hawaiian Islands. This is an overseas flight of 2,040 nautical miles. Or perhaps he comes soaring a straight shot down the lakes at the foot of the Alaskan peninsula, over Kodiak Island, and directly south to Hawaii. This is a flight of 2,500 miles - one of the longest over-water flight any bird tries. The plover who breed in Eastern Siberia apparently take a different tack. Probably they come down to Kamchatka peninsula, to the bleak Kuriles, then go island-hopping and finally arrive in Southeast Asia, Australia, or Tasmania.

The Pacific golden plover - pluvalis domenica fulva - is nine or ten inches in size. He is a wader and can sprint along the beach on his high, thin legs. In winter the plover's plumage is gray and gold. When he leaves Hawaii for Alaska he is black of breast with spotted golden wings and back, and with a band of pure white running over his forehead and down the side of his neck to the chest. He is a handsome fellow.

The golden plover is a very useful bird here, a friend of the Hawaiian farmer and crop planter. His appetite is keen and he eats great quantities of caterpillars, insects and grubs. In August and September after the great flight from Alaska, the plover arrives hungry and weary of wing. The males come first with just a few females. Then weeks later the females and the young birds arrive.

In the old days the Hawaiians trapped the plover because he makes good eating. The Hawaiians built nets, held up by stakes, and then drove the birds into the nets and pulled the stakes out. For years in the Islands hunters shot the plover for sport. They built stone blinds and decoyed the plover down by impaling potatoes on thin sticks. The hunters killed plover by the hundreds of thousands. Then in 1941 the law put a stop to the slaughter.

There has been a small group of plover, who find Kapiolani Park to its liking. There they have apparently staked off "hunting preserves." They are constantly observed by Paul L. Breese, Director of the Honolulu Zoo, and by George C. Munro, the Islands top authority on birds.

Mr. Munro, who is 88, has been observing golden plover in the Hawaiian Islands since 1890. He is well-acquainted with the eight plover-residents of Kapiolani Park. "I know the beggars," he says. "They spend two seasons here and then move on. That's my theory!"

"We don't know very much about the golden plover," says Mr. Munro. "We want to know where they take off from when leaving for the north. We want to know the details of their arrival from the sea on their return from the north. We ought to be banding them -- but we never can catch them. We can't even find their roosting places here. We need bird watchers on the coast. The Audubon Society here, would love to have data on them. Yes, they are amazing birds. How do they do it? We just don't know. We just don't know."

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HAWAIIAN OWLS

By Florence H. Macintyre

(Read before a meeting of the Hawaii Audubon Society, August 16, 1954)

On the wall in my family sitting-room hangs a small, framed saying that goes like this: "A wise old owl sat in an oak; the more he saw, the less he spoke; the less he spoke, the more he heard. Why can't we be like that wise bird?" Had I heeded that bit of advice I might be "hearing" and not "speaking" tonight. For, knowing virtually nothing about owls, I mentioned at my first meeting with the Society that I had seen one a few evenings before at dusk, on Makiki Heights, when it soared in and lighted on a bush not far from our parked car. Without more ado, I was initiated and given my first assignment - report on Pueo at the next meeting.

Turning at what material I had at home, I found in E. H. Bryan, Jr.'s book: Hawaiian Nature Notes the following information about the owl. He notes that of the

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four birds of prey found in these islands, only two, Pueo, the owl, and Io, the hawk, are kamaaina birds. Others are chance migrants ocassionally seen. Captain Cook mentioned both the hawk and the owl. "Both the Io and Pueo were well known to the ancient Hawaiians," Mr. Bryan notes. "Pueo especially, was regarded as an akua, or powerful spirit. References are many in Hawaiian Folklore to the prowess and remarkable accomplishments of Pueo. Death would be the fate of anyone so rash as to kill an owl.... Here (in Hawaii) the favorite food of Io and Pueo consists of rats, mice, lizards, spiders and insects. In former days they also caught and ate small birds, but there is no known record of their having killed chickens."

"The Hawaiian owl, Pueo, is very like the short-eared owl which is found in North America and other parts of the world. It differs from it only in its smaller size and a few minor details. For this reason scientists regard it as being only a subspecies of this widespread owl, and call it Asio acciptrinus sandwichensis. It is from thirteen to sixteen inches long, with a wing which measures eleven to twelve inches. There is some little variation in color, some adult owls being a buffy white, with dark-brown markings, while others are tawny ochra color, plentifully striped with dark brown. The legs and under parts are unmarked; the wings dark brown and ochraceous with dusky bands, black rings around the eyes, whitish eyebrows, and no apparent ear-tufts.

"The bird has been seen in the daytime, but one is more likely to see it in the late afternoon and early morning hours. It flies slowly around near the ground, just clearing the tops of the guava scrub and tall grass, alighting here and there to pick up a mouse or an insect. From time to time it utters its plaintive cry of "pu-wau-o" from which it gets its native name. Then it will sail off along the face of a cliff or across to the next valley. It is essentially a lowland bird... The nest of the Hawaiian owl is generally located in low grass and ferns on the sides of the valleys. Little attempt is made to conceal it - in fact there is little nest to conceal. It simply consists of a very shallow depression, lined with dry grass... The eggs usually number four, although from three to six may be laid. They are lusterless white, broadly oval, and slightly pointed at one end, about 1½ by 1½ inches in size. The female commences to sit as soon as the first egg is laid, so that they are quite likely to hatch at different times and young of various sizes may be found in one nest. The newly-hatched owls look like little balls of buff-colored down, very helpless and comical... Pueo occurs on all the larger islands of the Hawaiian group. It was formerly much more numerous than today... One reason for the scarcity may be that the eggs are eaten by the mongoose."

Later, Mr. Bryan made available to me his notebook on birds of the Hawaiian group, and there I have found information from various sources, some of which might be of interest in this brief report on Pueo.

Leonhard Stejneger, in "Birds of Kauai Collected by Knudsen," (Proceedings. U.S. National Museum, pp 85-86, 1887) notes: The four specimens of short-eared owls from the Hawaiian Islands before me do not seem to justify the retention of Asio-sandwichensis as a separable race. Two of them agree in general coloration with the majority of American specimens; the two others are deeper tawny, (one) nearly uniform dusky on the back, but it is in very abraded plumage, and is, moreover, easily matched by several other specimens in the larger series of the National Museum. The characteristic pointed out by Mr. Sharp (Cat. B. Brit. Mus. 11, p 239), vis, the "very dusky frontal patch," I find well pronounced in my Hawaiian specimens, but as Mr. Sharp has found the same in some Asiatic examples, and it also apparently occurs in some American specimens which have come under my observation, I am very doubtful as to the importance of this character. I am bound to say, however, that I believe the make of the skin and the abrasion of the feathers have something to do with it, and future observations based on fresh birds or absolutely perfect specimens may be necessary to settle this question, which is of considerable importance in order to ascertain whether the owls on the Hawaiian Islands are in part migratory or not. That they are not smaller than those from other localities is evident from the measurements which I have given below. Those of the largest individual are about equal to the average species, while the length of the wing, if it had grown to its full length, would not have fallen far below the largest."

In regard to the nesting time of Pueo, William Alanson Bryan has this to say: "To the data previously given, I am now able to add a third date for the nesting period of

the Hawaiian owl. While moving my camp into the Halawa headwater region, well back of Hipuapua falls, on May 24, I found a nest of Pueo, in a swale which had formerly been a banana patch, three or four acres in extent. My guide was in advance and stepped directly over the mother bird without noticing her. Fortunately, the bird did not take flight, and I was able to catch her in my hand as she crouched on the nest. The nest contained one recently hatched young, and five lusterless white eggs, all of which were well advanced in incubation... The parent-bird was in very worn plumage. The young birds have now been taken from the nest on November 20, 1901, March 6, 1905, and May 24, 1907. These widely separated dates indicate that the Pueo nests at any time that suits its convenience." (Some Birds of Molokai, 1908). And again he notes: "As the American short-eared owl - the nearest relative of our Pueo - nests regularly in the early spring and does not rear a second brood we are led, for the present, to conclude that the equable climate of the islands has encouraged this species to become exceedingly lax in fixing a nesting season; or else that both spring and fall are taken advantage of for the purposes of nidification." (B.P.Bishop Museum, Occasional Papers, II,pp 421-3, 1905)

From "Birds of the Hawaiian Possessions," Henshaw, I add these notes: "That the Pueo must have been long a resident of the islands is evident both because the bird is diffused throughout the entire group and because it figures prominently in Hawaiian folk-lore, the bird being formerly worshipped as a God, one of the poe akua mana... According to Andrews' Dictionary there was a special form of snare designed for catching the owl, called pehe, or peheapueo, "Snare for catching owls." It is possible that owl's feathers were employed for decorative purposes, but it is more probable that the feathers taken from the captured owls were used to decorate the owl idols, or employed as offerings to propitiate the owl god's favor. Nor is it improbable that owls were kept captive in the heiaus or temples...

The bird sees uncommonly well in the daytime, and not rarely is abroad in bright sunlight; nor does it fly after dark, unless by moonlight. Its habit of remaining stationary some little distance above the ground on rapidly moving wings, as it anxiously scans the ground beneath for mice, is common in the islands, and is the characteristic by which it is most commonly known... No one alleges mischievious habits against the Pueo... The bird should be protected by law and preserved for the good it is continually doing."

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DECEMBER ACTIVITIES:

FIELD TRIPS: December 12 - Manoa Cliff Trail. Meet at the Library of Hawaii at 8:00 a.m., bringing lunch and water.

December 26 - The annual Christmas bird count will be taken on this day. Volunteers are urgently requested to call Miss Grace Gossard.

MEETING: December 20 - The regular meeting of the Society will be held at the Aquarium, at 7:30 p.m. There will be election of officers. Also the details of the annual Christmas bird count will be discussed.

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