

Notes on the Birds of Kauai.

BY WM. A. BRYAN AND ALVIN SEALE.

THE following observations are based on a collection made jointly by the authors for the Bernice Pauahi Bishop Museum during a short sojourn on the island of Kauai, extending from April 12 to May 4, 1900. The two principal centres of field work were the Kaholuamano mountain house, and in the vicinity of Mr. August Knudsen's home near Waimea.

Kaholuamano, which is the place where Messrs. Wilson, Palmer and Perkins carried on much of their work, is the property of Mr. Francis Gay and is splendidly located in the midst of the forests on the western slopes of Mount Waialeale at an elevation of about 3800 feet above the sea. To the Messrs. Gay and Knudsen we are indebted for much of the success of the trip.

The collection numbers one hundred and forty skins and skeletons, besides some nests and eggs and much valuable alcoholic material. In most cases a very full series was secured of the seventeen species taken. The field jottings are for the most part taken from Mr. Seale's notes whose diary extended over the whole period.

Larus barrovianus Ridgw. **Point Barrow Gull.**

Attention has elsewhere (Memoirs B. P. B. Mus., Vol. I., pt. 3, p. 96) been called to the securing of two specimens of this gull on the island of Kauai by Mr. Francis Gay, whose hospitality we enjoyed, and who was so abundantly able to help us in our work. He kindly presented one of the specimens to the Museum. It was the opinion of that gentleman that they had wandered down to the island from the far north, having been lost at sea. Both specimens were in poor flesh when they were secured, one being unable to fly. One of the birds is still in Mr. Gay's private collection.

Diomedea nigripes Aud. **Black-footed Albatross.**

Our notes for the morning of April 12 take account of this species flying about the ship as we were crossing the channel between Oahu and Kauai.

Puffinus newelli Henshaw. **Ao.**

This species has long been known to the natives of Kauai, where it was called Ao. A single specimen in Mr. Gay's collection

was presented to the Museum and was the only example of the bird secured. Mr. Gay states that it is fairly common in certain cliffs in the mountains. It has been his observation that they live at lower elevations and closer to the sea than does the Uau (*Estrelata phaeopygia*). Even when they are found in the same cliffs the Ao keep by themselves in the lower part, and the Uau to themselves higher up. The fact that the native name of this bird has come down to us through all these years, but that the species to which it had been applied by the kanaka naturalists should but so recently come to the light of science speaks much in the favor of those skilled old bird-catchers who had worked out the ornithology of their land with such exactness.

Oceanodroma castro (Harct.). **Hawaiian Storm Petrel.**
Oeoe.

No examples of this bird were seen except in the private collection of Mr. Gay. He has found them many times in suitable cliffs on the higher mountains.

Phaëthon lepturus Lacep. & Daun. **White-tailed Tropic Bird.** **Koae.**

On April 14 our notes state that six tropic birds were seen at different times sailing about the cliffs above the Waimea river, along which stream the path leads for a considerable distance of the way to the mountain house. The splendid cliffs which are in many places hundreds of feet high seem to be ideal nesting sites for this species which, so far as it has been possible to learn, chooses high cliffs in preference to flat rocks, etc., as is the habit of the Red-tailed Tropic Bird on Laysan and Necker Islands. While no specimens were taken during our stay they were seen in various places at intervals during our visit. The specimens in Mr. Gay's collection taken on Kauai, all of which were undoubtedly the same as species seen, were the white-tailed form, as are also the skins in the Museum series.

Anas wyvilliana Sclater. **Hawaiian Duck.** **Koloa maoli.**

On the morning of April 23, while riding along the turbulent mountain stream Wailie, Mr. Seale saw a flock of fourteen of these ducks swimming about in a quiet eddy. Three were taken—two males and a female. Later on three more ducks were seen, but none taken. On May 4, while collecting at Mr. Knudsen's place, several flocks were seen in the low swamps. The pair (Museum No. 9424 ♂, 9423 ♀) are in full plumage. The freshly killed specimens have dark hazel eyes; the bill dark sepia, darkest on the upper mandible, and with a greenish tinge on the sides of upper

mandible in the male. The feet are white, with a yellowish cast in the female, and white with an orange yellow tint in the male.

Nycticorax nycticorax nævius (Bodd.). **Black-crowned Night Heron. Auku kohili.**

One immature female (Mus. No. 9433) was taken from flocks near Waimea, where it was abundant in the low lands.

Gallinula sandvicensis Streets. **Hawaiian Gallinule. Alae.**

While collecting in the swamps about Waimea on May 4 this species was noted as especially abundant.

Fulica alai Peale. **Hawaiian Coot. Alae keokeo.**

A female (Mus. No. 9432) was taken in the ponds near Mr. Knudsen's home. The freshly killed bird has a cherry-red eye; the frontal shield is white with a light bluish tip to the upper mandible; the feet are a bluish green. A number of nests of the white-shielded coot were seen among the rushes looking very much like a small platform of grasses with a slight hollow in the centre for the eggs. Usually, though not always, the grass was bent down over the nest so that it was partly concealed. The nests were in colonies of six or eight. One set of six eggs was taken. The nest was among the rushes about twenty feet back from the open water; the rushes were in water fourteen to eighteen inches deep.

Himantopus knudseni Stejn. **Hawaiian Stilt. Kukuluaeo.**

The eggs, nestlings, a half-grown bird and four adults were taken on May 4. The ponds near Mr. Knudsen's house cover an area of several acres, and at this time of year are so shallow that one can wade anywhere in them. Indeed rushes occupy a large part of them. From the great excitement our approach caused it was plain that the birds were nesting. The stilts were wading about in the water or running about on the land. There were hundreds of these birds in sight. They uttered a sharp, rather harsh cry almost incessantly when on the wing. A nest was soon found which proved to be an old one with one bad egg in it. Shortly after Mr. Knudsen found a nest containing two eggs and two recently hatched young. The nest is usually little more than a slight depression in the ground—often an old cow track—with a few broken bits of coarse weeds scratched into it. The nest taken was among some weeds about fifty yards from the water. The old birds were quite fearless. Approaching to within a few feet of us, they would affect all sorts of ailments to decoy us from the nest. A favorite method of decoying was to lay flat on the ground with their wings spread out. They would often affect the broken wing trick

which is so frequently adopted by waders. They have a curious sort of dance, in which they bend their long legs at the tibio-tarsal joint and bob up and down in a most ridiculous fashion. Mr. Knudsen said that he had only noticed them performing in this manner during the nesting season. One specimen taken (Mus. No. 9427) was almost half-grown, but as a rule nesting was not so far advanced. A set of four eggs were taken which were too badly incubated to save.

Heteractitis incanus (Gmel.). **Wandering Tattler. Ulili.**

Occasional specimens were seen. On April 23 two birds were noted at an elevation of 3500 feet, while on May 4 in the marshes and ponds they were fairly common.

Limosa lapponica baueri (Naum.). **Pacific Godwit.**

Notice has been taken (Memoirs B. P. B. Mus., Vol. I., pt. 3, p. 27) of the specimen in Mr. Gay's collection which was secured by him. The specimen is in winter plumage and was secured in the late autumn.

Charadrius dominicus fulvus (Gmel.). **Pacific Golden Plover. Kolea.**

On April 14 a flock of five were seen feeding at an elevation of 1200 feet, and at 2000 feet another flock was sighted. They were noted again on May 4 as being quite plentiful at the Waimea ponds. On April 23 a male was taken (Mus. No. 9397) with the testes very much enlarged (.19X.60), going to show that the mating season was well advanced.

Phasianus torquatus Gmel. **Ring-necked Pheasant.**

Pheasants were seen on a number of occasions, but no place were they as common as in the Waianae mountains on Oahu.

Turtur chinensis (Scop.).

Chinese Turtle Doves are quite common on Kauai.

Asio accipitrinus sandvicensis (Blox.). **Hawaiian Owl. Pueo.**

This bird was seen, toward nightfall especially, sailing about the cliffs and over the valleys. On one occasion one was seen to drop almost straight down for perhaps three hundred feet, and after a short time to rise from the bushes and wing off to a tree with what looked like a wild chicken a fourth grown.

Chasiempis sclateri Ridgw. **Apekepeke.**

Of this interesting little fly-catcher a very complete series was secured. They are, like their cousins on Oahu and Hawaii, the most abundant and most easily obtained of any of the native birds.

It is not uncommon to have them approach to within a few feet of one, and after satisfying their curiosity to resume their feeding and calling, so that they are easily studied while alive. They are met with almost invariably in pairs. The ochreous-colored immature birds keeping together and the adult white-rumped ones keeping together, so that we have not yet seen an adult and an immature bird mated. No nests were taken. Everything indicated that it was past the nesting time. An adult was seen feeding a young which was just able to fly. At another time, April 18, a pair of adults were seen feeding four young which were quite able to fly; however, they were being cared for with as much solicitude as they would have been if they were perfectly helpless. One of the four, a juvenile female (Mus. No. 9408), was taken, and since there is no description of this interesting plumage it might be well to note that it more nearly resembles the mature bird than it does the immature plumage which intervenes. The plumage all over has a cottony appearance. The sides, top and back of the head are pale ochraceous mixed with brown, and with bluish gray bases to the feathers. The throat is white with some buffy markings. The breast whitish with faint smoky and ochraceous markings to most of the feathers. The abdomen is whitish. The back and rump mottled with sepia, pale ochraceous and whitish. The wing feathers and coverts are sepia-tipped and narrowly edged with pale ochraceous. The tail is dark sepia with whitish tips on the inner web of all but the centre pair of feathers, and with a faint indication of whitish on the outer edge of the outer pair. The bases of the feathers of the body all over are mouse-gray which in life adds much to the adult appearance of the fledgling stage. The feet are bluish; the eye dark hazel, and the upper mandible dark while the lower is quite yellowish. Length 4.75, wing 2.50, tarsus 1.00, culmen .44. Aside from the fledgling just described the series taken is divided into ochraceous immature, and adults, indicating that it requires at least two years to reach the adult plumage.

Acridotheres tristis (Linn.). **False Mina.**

Common everywhere, ranging to the summit of Waialeale.

Carpodacus mexicanus obscurus McCall. **House Finch.**
"Rice Bird."

Common on lowlands; one specimen taken at Kaholuamano.

Munia nitoria (Temm.). **Chinese Sparrow.**

Common in flocks in the valleys.

Vestiaria coccinea Forster. **Iiwi.**

A fine series was taken in both immature and adult plumage. It seems to require at least two years for the Iiwi to assume the plumage of the adult.

Himatione sanguinea (Gmel.). **Apapane.**

The Apapane is fairly common on Kauai. Several flocks of from five to fifteen individuals were seen feeding on a single koa or ohia tree. The bird is far more abundant on Kauai than on Oahu.

Chlorodrepanis stejnegeri (Wilson). **Kauai Amakihi.**

Of this sturdy species only four examples were taken. All the specimens seen were feeding among the flowers of the ohia growing at an elevation of not less than 4000 feet. None were noted about Kaholuamano. Doubtless they were more plentiful towards the summit of Waialeale, but the rainy season was on and as a result the whole forest was one all but impassable quagmire, in which it is perilous to even follow the rude trail, to say nothing of taking the chances of losing it in the dense fogs and rains which envelope the summit almost continuously.

Chlorodrepanis parva (Stejn.).

Perhaps the most interesting series of skins secured during the trip was of this species. About Kaholuamano they were seen but rarely, but along the ridges towards the summit of Waialeale they were more and more abundant so far as our explorations extended. At this season they are met with, feeding about in loose flocks of a dozen or more, picking at the flowering ohia. Many times they were secured from trees in which *L. ceruleirostris* (Wils.) and *H. sanguinea* (Gmel.) were feeding. Often they would alight on the low branches to sing or to preen, but they seemed to confine their feeding grounds to the flowers of the ohia which at this season were blooming profusely. On the morning of April 18, while collecting in a little valley which sloped off from the main ridge two miles northeast of the mountain house, at an elevation of about 4000 feet, we noted a tall slender ohia that was growing down close beside the little mountain stream, in rather open ground, though well protected from the wind. Attention was attracted to it by the rather unusual flight of what proved to be a fine adult male (Mus. No. 9365) of *C. parva*. By a careful search it was possible to locate the nest of the bird in the topmost branch of the tree some forty feet from the ground. Shortly after the male was secured the female (Mus. No. 9366) flew straight to the nest and proceeded to feed the young. Climbing the slender swaying tree was a difficult and somewhat dangerous task, but it was rewarded by the securing of the nest figured on the opposite page, and three young birds in the pin feather. A careful search was made on the ground and all about for fragments of the egg shells but nothing was found.

The nest, which is believed to be the first one secured, is situated in a vertical crotch and was virtually hidden from view by the leaves which surrounded it. It is composed externally of coarse



FIG. 7. NEST OF *CHLORODREPANIS PARVA* (STEJN.).

moss and lichens, into which are loosely placed weed stems, skeletons of leaves, and a few roots. The inside lining is made up almost entirely of stiff black hair-like rootlets. The nest is 3.50 inches deep by 4.00 broad outside; inside it is 2.25 across the bowl by 1.50 deep. In general appearance it more closely resembles nests of *Chlorodrepanis* and *Himatione* than it does the nests of *Orcomyza* in the Museum.

A close study of the material secured has resulted in placing *parva* in the genus *Chlorodrepanis* (Memoirs B. P. B. Mus., Vol. I., pt. 3, p. 46). *Orcomyza bairdi*, which is given by Dr. Stejneger as the type of the genus *Orcomyza*, has the tongue but slightly rolled up on the edges, and the tip is bifurcated; while in *parva* it is perfectly tubular in form, with the brush-like ciliæ at the tip, which is a character well marked in all the members of the *Chlorodrepanis* genus. In adult *parva* the edges of the tongue meet and roll past each other to form the sucking tube. While in the very young, as exhibited by the nestlings just mentioned, the tongue shows no marked lateral rolling, nor does it meet to form a tube. This would seem to indicate most clearly that this form has been evolved from an ancestral type in which this organ was normal, and would remove the form farther from the parental stem than the more typical genus *Orcomyza*.

Oreomyza bairdi Stejn. Akikihi.

We secured a good series of this energetic little creeper-like bird. In its search for food it would often come down on the ferns and trunks of trees to within a couple of feet of the ground, but it was never seen to alight on the ground. On other occasions it was seen feeding high up among the ohia branches, but always keeping to the bark and limbs, where its antics remind one of the nut hatches of America. In habit it is totally different from either of the *Chlorodrepanis* of Kauai.

Loxops cæruleirostris (Wils.). Ou holowai.

On the ridges two or three miles above Kaholuamano this species is quite plentiful, feeding about the blooming ohia. They are somewhat gregarious—eight to fifteen will sometimes alight in a clump of trees. Their graceful movements and beautiful olive and yellow plumage make them one of the one of the most charming of the Kauai mountain birds. Young birds were secured which would indicate that the breeding season was as early as February.

Hemignathus procerus Cab. Kauai Akialoa.

We collected four specimens of this bird and saw a number of others. One young male (Mus. No. 9220) taken April 27 is in a plumage that would make February or March the probable nesting

season. The food seems to be largely insects. The eye in the young bird is a dark hazel, the feet gray, and the bill dusky grayish. The above specimen was taken while feeding about the trunks and limbs of an ohia tree much the same as a flicker would do. They use their long bills to feel under bits of bark and in cracks and holes. One was seen to reach under a bit of bark and pull out a big larva which it devoured greedily. Three others were seen near the same place. They are very wary and hard to approach, generally keeping to the higher altitudes, none being seen below 3500 feet. A fine male was taken on April 30 from a flowering ohia tree well on towards the summit of Waialeale.

Psittacirostra psittacea (Gmel.). Ou.

A single beautiful male specimen was taken on April 30 at upwards of 4000 feet elevation. Mr. Gay states that the species is far more plentiful in the valleys, where it feeds on the guava often coming down lower than 300 feet elevation after them; and it was his impression that in favorable localities they would come down almost to the sea level if food was more plentiful there.

Phæornis myadestina Stejn. Kamau.

On April 18, while sitting in ambush under some trees, two of these birds came and alighted quite near us. They were very quiet, but seeing us their curiosity was aroused, and coming nearer they dropped their wings so that they almost touched the branch they were sitting on, keeping them all the while in a quiver. After satisfying themselves that we were not liable to molest them they flew very near to each other when one seemed to be taking food from the other's bill, or at least to rub his bill through the mouth of the other. These birds were quite similar in color and were billing probably preparatory to mating. The song of this species is remarkably sweet. While the birds are shy, their size together with their song, which is given at all times of day—and on one occasion was heard in the dead of the night—make them not a difficult bird to secure. No young were collected, which taken in connection with the mating performance just detailed would indicate May as their probable nesting time. This species was fairly common, while *Phæornis palmeri* was not met with during our stay.