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THE BOOBY COLONY AT ULUPAU HEAD, OAHU

By H. Paul Porter

(reprinted from Honolulu Star-Bulletin, April 8, 1950)

Oahu is fortunate in having a unique area for the study of the great sea birds that roam the Pacific Ocean - the booby colony at Ulupau Head on the Kaneohe Naval Air Station.

On the banks of the great rocky headland, a group of red-footed boobies (Sula sula rubripes) established a nesting ground three years ago, which, except for about two months each winter, still provides one of the best places in the world for observation of the mating and nesting habits.

During the winter months the birds go far out to sea and fish. In early spring they return to mate and build what is considered a poor nest. The young bird stays on the nest until mid-summer or later before trying his wings. During this time he gradually loses the soft downy feathers, and after going through a brown adolescent phase, acquires the sleek white feathers and black primaries of the adult.

The booby, which is related to the gannets, was so named by seamen, who found that the bird could be approached easily and killed for food. It seems a sad commentary that the bird was considered a "booby" because he trusted man.

The average booby measures some four and a half to five feet from tip to tip of the wings. When approached, the booby repeatedly bows his head, weaving from side to side like a punch-drunk fighter, but will not leave the nest if young or eggs are present.

The Research Committee of the Hawaii Audubon Society, under the chairmanship of Miss Ruth Dingus, has made a study of the colony. Accurate records are kept of the numbers on the metal bands which are placed on the birds' legs. These numbers are sent to Washington with all information concerning the time, place, sex (if determinable), whether the bird had an egg, young, etc. Records are also kept locally, and afford a good check on later nesting habits of the banded bird.

(Persons finding a dead banded bird are requested to notify the Fish and Wildlife Service, giving the number of the band, where the bird was found, and any other noteworthy information.)

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Recent notes of the Booby Colony: On February 4th, Unoyo Kojima, Mr. Norton and I made a trip to Ulupau. The booby colony was well populated, with perhaps five hundred birds roosting in the haole koa, and circling above us. Nest building was going on,

and we watched the birds pulling apart old nests, and tugging at twigs to secure material. A number of completed nests were examined, but no eggs were found.

We went on to Kaelepulu, stopping to observe stilt, coot, and tattler in the ponds near the entrance of Kaneohe Naval Air Station. At Kaelepulu a large flock of plover were feeding on the mud flat close to the border of the pond. We had a close view of pintail in a small inlet. A raft of what we assumed to be coot were swimming on the far side of the pool, at such a distance that no positive identification could be made. The total count - Ulupau Head and Kaelepulu Pond - was: stilt, 43; coot, 9 (actual count); plover, 123; turnstone, 6; tattler, 1; frigate birds, 4; night heron, 3.

On the evening of March 3rd, the same group returned to Ulupau to band. As we drove toward the area in the twilight, frigate birds were swooping down upon the luckless boobies returning home with their catch. The colony was settling in for the night, in greater numbers than on February 4th. A few nests contained eggs, but most nests examined were still empty.

Grenville Hatch

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COMPARATIVE ECOLOGY OF CERTAIN HAWAIIAN HONEY CREEPERS (FAMILY DREPANIIDAE)
By Paul Herbert Baldwin
Summary of the disseration submitted...for the degree of Doctor of Philosophy, University of California (Department of Zoology), September 1950

A study was made to determine some of the behavioral and physiological traits of certain Hawaiian honey creepers, Loxops v. virens, Himatione s. sanguinea, and Vestiaria coccinea, which equip these birds to live in the environment in which they have evolved. Field observations on the island of Hawaii emphasized the timing of events in the annual cycle of the birds and in the seasonal march of environmental phenomena.

Flowers of the tree, Metrosideros collina, provide the main supply of nectar for the honey-eaters. The flowering periods of trees in different portions of the forest vary, so that flowers are available in one area or another over the entire year. Flowers of the tree, Sophora chrysophylla, provide a second major source of nectar. The flowering periods of this tree also vary according to locality, but they tend to be more restricted to the winter and spring months.

Many native insects breed throughout the year and occur in sufficient abundance that the birds may always obtain them readily in all the habitats studied. Small soft-bodied types from 2.0 to 10.0 mm. in length are most commonly eaten by all three drepaniids.

Annual molt occurs between June and November with most of the population molting in August, September and October.

Testicular enlargement commences in late October in old males. Younger birds appear to undergo testicular enlargement somewhat later. By February all males have entered at least early stages of the reproductive cycle. Testicular regression occurs in all males between late May and July.

Nesting occurs between January and July. Territorial behavior is somewhat lax in these birds, especially in Himatione and Vestiaria. Post-breeding dispersal and wandering result in the spreading out of the populations over the forests in late summer and autumn.

Population movements consist in post-breeding wandering and, in Himatione and Vestiaria, of flights by large numbers of individuals over the forests of the local range to follow the flowering of the trees.

Evolutionary divergences in feeding behavior are relatively great among the Drepaniidae, whereas divergences in breeding behavior are small by comparison. The group is a favorable one for the study of evolution in the more conservative and slowly evolving aspects of avian behavior.

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Note: We congratulate Dr. Baldwin on his doctorate, and look forward to the publication of his thesis in full.

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Reviews:

THE AVIFAUNA OF NIIHAU ISLAND, HAWAIIAN ARCHIPELAGO, by Harvey I. Fisher. (Condor, 53(1):31-42, 5 figs., 1951)

Because Niihau is a dry island (about 15 inches of rainfall annually), it has always been a difficult terrain for its ranch-owners to manage.

Dr. Fisher reports on his three weeks study of birds there in 1947, giving a sketch of the island's geography (and a map) as well as its ecological history. The "southern and northern ends and the western side of this volcanic island are low, with sand and lava beds sloping gently to the sea. The east-central part...is made up of rugged lava mountains rising toward the east where 1000-foot cliffs drop to the water's edge. In this mountainous portion is a rolling plateau (800 to 1100 feet)...formed of the heads of the numerous canyons that cut eastward through the cliffs to the sea..." There are a few intermittent lakes and ponds in the lowlands, and "sumps dug in tidal waters" for livestock. But household needs depend on cistern water, and thirst is sometimes quenched only by the water of coconuts and the juicy cactus fruits, which also help to serve the cattle. Aridity is due to low elevation, to being in the lee of the large island of Kauai, and to the lack of forests.

During 1890-99, Wilson and Evans visited Niihau, and noted land shells (Carelia), thereby concluding that damp forests had formerly existed, their disappearance probably due to the introduction of goats by Vancouver, in 1794. Vegetation now is chiefly grasses and kiawe, a few acres of planted coconuts, and scattered cactus plants. Attempts are being made at reforestation. Goats have been eliminated - a difficult job - cattle, horses and sheep range where they can find water. Wild pigs are plentiful, are used as food by the Hawaiians, but are increasing even so. Rats are numerous, but wild cats even more so. Mongoose, dogs and rabbits are absent on Niihau; rabbits are present on the nearby islet of Lehua.

In spite of these enemies, "ground nesting birds such as the Ring-necked Pheasant, California Quail and Domestic Turkey are flourishing."

Dr. Fisher collected and lists for us forty-five specimens of birds (none native, all exotic), giving notes on populations, distribution and natural history. He indicates for each species its relative abundance, date of introduction (from careful records of the island's owners), and its present place in the island's ecology. As Niihau gradually becomes more verdant, better forested, he believes it is likely that more birds will become established, or reestablished, possibly including some native birds still found on Kauai, whence they have sometimes been known to fly, or been blown by the trade winds across the 18 mile strait.

In his discussion, Dr. Fisher divides the Hawaiian group into three east-west geographical regions, and lists on his chart the birds characteristic of each, setting Niihau in the "eastern section", along with "the larger eastern islands from Hawaii west to and including Niihau." A short bibliography is added to this valuable paper.

A SURVEY OF THE LACE-NECKED DOVE IN HAWAII, by Charles W. Schwartz and Elizabeth R. Schwartz. (Pacific Science, 5(1):90-107, 1951)

The authors tell us that this dove was introduced from eastern China at some unknown date, but was already abundant on Oahu in 1879; by 1900 it had spread to all the other islands (Kahoolawe?), perhaps through its own efforts entirely. It has been observed in flight from Kauai to Niihau. These now permanent residents may number as many as 88,680, with densities of less than 10 up to 200 birds per square mile. They are found from sea level to 4,000 ft. elevation; on the island of Hawaii, as high as 8,000 feet; optimum range is sea level to 2,500 feet elevation, in areas where extremes of rainfall or temperature are lacking. Food is chiefly plant matter - seeds, pods, fruits, roots and seedlings - but 0.5 per cent is animal in content. "No competition for food occurs between Lace-necked and Barred Doves in Hawaii." Fresh or brackish water is a necessity. Roosting areas near food supplies are favored, but as much as 5 miles between the two can be endured. Roosting may be in any timbered area but most favored spots are densely wooded thickets along coastal flats. Breeding season is mostly February through September. Juvenile plumage "lacks the black and white neck "lace" so characteristic of the adult..." Sex ratio, weights, and parasites are noted.

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Have you read:

CAN THE NENE COME BACK?,by Nell B. Elder (Audubon Magazine, Jan.-Feb. 1951, pp. 24-30)

THREE GOSLINGS ADDED TO BIG ISLAND FLOCK (Honolulu Star-Bulletin, Feb. 1, 1951, page 2)

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Brief notes:

Mr. H. M. Norton made a trip to Hawaii on January 21, 1951. He ascended Mauna Kea to a little above the 10,000 ft. level and noted particularly the skylarks. In the pasture lands of Parker Ranch, Waimea (elevation 2200 to 2300 ft.), there were plover and skylarks as numerous as ricebirds in an Oahu field. At the Kemole Rangers' Station, and from 7,500 to 8,000 feet, skylarks, plover and valley quail were abundant. At 10,000 feet elevation, in open, grassy country, skylarks only were found.

GH

A windward Oahu observer writes "...I watched at close range a Hawaiian gallinule. The frontal plate and bill were brilliant, shining red, spring apparel. The tip of the bill was white, not yellow. The legs decidedly yellow, not a tinge of other color to be seen from the front view - the yellow rather a papaya shade... Cardinals, linnets, ricebirds, white-eyes seem to be nest building. All sleek in spring feathers..."

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JOURNAL OF ORNITHOLOGICAL WORK
during the summer of 1937
(continued)
By Walter R. Donaghho

June 18: Went up the slope of Mauna Loa to the end of the road at 7000 feet. Explored an open region, covered with pukiawe and grass, with scattered groves of koa and mamani trees. Made our way over to a kipuka of koa about a hundred yards up the slope and upon reaching it we saw three olive-green creepers running over the limbs. Amakihi came into the kipuka, floor of which was covered with a dense growth of pukiawe. Elepaio and apapane sang in the trees of a smaller kipuka, lower on the slope. In another, still lower, we noted creepers in a solitary koa, running over the limbs. It was fascinating to

to watch them as they ran up and down, over the side to cling to the underside, then running along the underside of the limb. There were amakihi and a pair of elepaio, also a bird that flew over my head to a solitary mamani up the hill. It shone brilliantly with orange, and I recognized the akepiuie. Following it we heard a strange, guttural note which, I suppose, came from it. It then flew off toward the dense koa forests of Keawewai, the area being a favorable habitat for this species. Returning to the road, we started up the Mauna Loa trail, past koa and mamani into open country covered with low ohelo, leponene and other plants. Small ohia were scattered about, in which were several amakihi and apapane. Here I heard an amakihi utter the strangest notes I have ever heard from this species - a series of notes sounding at times like a silver bell, and again like an English sparrow, and several others equally strange. It reminded me of the song of a Chlorodrepanis parva, that I heard on Kauai once, which had a prettier song, however. At the 5000 foot level, as we went down, where grassland predominates, I explored a forest of ohia and mamani on an old lava flow, koa at one end. Elepaio and amakihi were fairly numerous, and I saw one pair of iiwi. As we walked still further down the road, the native birds gave place to linnets, mynahs and a pair of valley quail in an open forest of koa. Blue pheasants were calling from the open country beyond.

June 20: Set out for a hike through Kilauea-iki crater. Byron Ledge plateau was tenantless of birds for the first mile. At the brink of the crater I saw a number of apapane flying about. Hill robins were caroling cheerfully below. The trail descended through a fairly good forest, denser at the bottom. Several pairs of elepaio were seen and a Hawaiian hawk (io) circled up into the sky over the west rim. Crossing the smooth, flat pahoehoe floor of the crater, the trail plunged into a wedge of dense fern forest that jutted into the crater, the point of the wedge at the bottom. Immediately, the characteristic trees of the rain forest were encountered - olapa, mamaki, pelea, Straussia, and others. Birds were more numerous too - apapane, amakihi, hill robins and elepaio... Driving down to Hillina pali, the road went through dry, scrub ohia country, then a parklike stretch with scattered groves of ohia. Skylarks common in many places, but native birds absent, except a rare apapane...

June 23: Went to the Napau crater region. Arriving at Makaopuhi, we started down the Kalapana trail. Passed through scrub forest - no birds, except an amakihi in the distance and an apapane. Followed a fenceline, which plunged into deep, dense forest. Birds immediately increased, many apapane and a few amakihi. A stretch of scrub forest, then a magnificent ohia forest, with trees over 70 feet in height. Straussia and Bobea and tree ferns grew underneath, puluhi fern and ieie vine. In spots amakihi were exceedingly common. We followed a trail leading away from the fenceline and found several iiwi at the edge of the forest that gave place to scrub. An omau captured our attention; we heard quite a few as we returned to Makaopuhi crater.

June 25: To Makaopuhi crater...started (from the rim) through the forest, easy going. Staghorn along the rim, but it cleared and the ground could be seen, covered with liliaceous plants, lichens, and moss. Birds fairly common, apapane and amakihi being heard, once in a while I heard an elepaio and twice an omau. Coming around under Kane Nui o Hamo, we looked for a place to begin the descent...had to depend on trees to get down, as the route was down a succession of cliffs and steep slopes. When resting for a few moments, I saw an apapane fly up to its nest in a tall ohia tree. As it was aware of our presence it did not enter, but flitted about the crown, now and then landing and singing. Birds were more common as we descended. One iiwi was heard. Reaching the bottom, we left the dense forest and came out upon the flat lava bed of the upper floor or shelf - the pit itself being much lower. Harold heard a strange cry coming from high on the Kane Nui o Hamo side - a series of catlike wails. He excitedly exclaimed that it was a hawk. Later I saw a hawk glide across the crater and land in a tree on the south side. I went over and it flew into the air. Another hawk was farther down. No. 1 hawk landed in a dead tree and Harold climbed up under it. It flew off and landed in an ohia far up the slope. The other hawk glided over to it and No. 1 (a young bird) gave its cry "keeoh! keeoh! keeoh!", as it begged for the food that the mother had brought it. I did not see the process very well, but the young bird flapped its wings and took the food

from the mother's bill. After feeding her offspring, she flew off across the crater. The young one flew up and landed near the crater rim.

June 30: Started out for the large koa forest north of Brown's ranch. As I entered the gate at Kipuka Puaulu, the forest fairly rang with apapane. The trees were full of them, over 200 noted in only a half mile of walking. Iiwi also in increased numbers. A hawk flew up in the open space north of the trail. I saw it high in the air, circling higher and higher, until it was just a little dot in a vast sky. I next crossed a lava flow with scrubby ohia growing upon it. Numerous apapane and quite a number of iiwi, and elepaio. At the other side of the flow I plunged into a dry koa forest, then out into pasture land, scattered with large ohia and koa. Introduced birds were seen again. They seem to shun the deep forest. I find them so rare there that I feel there is little to fear of direct competition between introduced and native species. The mynah is so rare there that its plundering on native species is too little to call attention to. The pasture soon gave way to a mixed forest with a heavy second growth of trees. Birds common here, amakihi especially. Elepaio, hill robins, iiwi and apapane all present. The last two probed around in the ohia and koa overhead and occasionally I would meet an iiwi in a low ohia or naio. Once a strange whistle was heard - strangely human, as if someone was whistling through his fingers. It was a long note followed by two short slurs. I imitated it and soon a large bird flew into a koa and lighted on a limb about 20 feet above my head. It has a grosbeak type of bill and I immediately recognized it as a female koa finch, a bird which was practically unknown, unseen since Henshaw's time, about 40 years ago. Going on, the way led deeper into the koa forest proper. The second growth ohia gave way to tree ferns. The ground became damper, soggy, occasional puddles. Birds were scarce, only the elepaio and hill robin seen often. I came across a spot of mixed growth, with olapa and naio growing under the koa. Here I heard the omau, and birds became numerous again. I saw the creeper here and once a flash of orange as an akepiuie flitted through the koa. I heard a strange and loud warble and occasional linnet-like songs. They came from an akiapolaau. Three were seen, racing up and down the branches, now and then stopping to hack away at the bark for grubs underneath. The bill was very difficult to see, but I made out the curve and the half bill underneath the upper mandible. I stood for quite a while, fascinated with their active movements as they worked. Their hammering of the bark was audible from where I stood, about fifteen feet below. Pieces of bark fell about me. Turning to the southwest, omau were frequently heard. It seems to be a characteristic of the native species here to travel about together in groups. (I have noticed this on Kauai especially. A score of creepers there usually meant that akialoa, akiapolaau, o-o, kamau, o-u holowai, and the two amakihi were near.) Following the Brown ranch forest reserve fence I found quite a few iiwi as the ohia and other trees became more numerous. Apapane, rare in the koa forest, became exceedingly numerous. I cut through a dense forest of second growth ohia, intermixed with large ohia and koa, in which I found numbers of apapane and iiwi. The apapane list had almost 300 birds added to it, and the total was 500 birds.

July 2: Rode up the slope of Mauna Loa to the end of the road with a friend then started out on a journey down through the koa forest and back to the park. An amakihi in one of the trees came down lower in the tree when I whistled at it, and it looked me over in wonderment. Went up the Mauna Loa trail, then set out across the lava flow to the right. I made for Kulani cone showing above the forest of koa, to the east. Going through a kipuka of scrub ohia, I noted one or two apapane and amakihi. Another, of koa, with mamani, naio, and pukeawe growing underneath rang with the notes of a large flock of hill robins. Mynahs, several pairs of elepaio and amakihi were with them. Beyond, the way led across kipuka and lava flows and finally came out on a large area of pastureland. Linnets and mynahs were common here, and several skylarks launched into the air to pour forth their twittering melody. A herd of goats scampered across the pastures. To my surprise I met a flock of plover and turnstones. Birds had evidently decided to spend the summer here. Their growing habit of not returning to the north has resulted in an aggregation of several native species here.

To be continued.

February Field Trip: Sunday, February 11th, was a day made to order for lovers of the out-of-doors. In recognition of that fact a goodly number - eighteen - assembled at the Library of Hawaii at eight o'clock. Presently a cavalcade of five cars set off, with Poamoho Trail as destination. As the trail leaders were not optimistic about the condition of the "jeep" road, the cars were left near its beginning, and the party, breaking up into twos and threes, started to hike.

Though the sun was high the air was balmy. The presence of birds in the surrounding trees was soon manifest through the soft calls heard - if one but paused to listen. Several hours later the group reassembled and counts were tallied. The apapane was in the ascendancy, which was not surprising in view of the December count for this same area.

The different species noted and reported were: apapane, 44; amakihi, 26; Japanese hill robin, 21; plover, 12; elepaio, 14; turnstone, 6; night heron, 3; iiwi, 2; linnet,4; gallinule, 3; Garrulax (brown thrush), 1.

Irma Botsford

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A suggestion:

The Hawaiian Audubon Society knows the trails of Oahu well. Would it not be of interest to write descriptions of the various trails, giving meaning of names, if possible, etc.? Who will assist in this interesting series of notes? The suggestion comes without signature, the editor favors the idea!

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APRIL ACTIVITIES:

FIELD TRIP: Sunday, April 8, 1951, to Poamoho. Meet at the Library of Hawaii at 8:00 am. Bring lunch, water, and car (if possible). Poamoho is one of the best birding trails on Oahu. If the weather permits though we may be unable to drive the cars to the beginning of the trail, the two miles of graded road alone offers enough bird life to satisfy any earnest bird watcher.

MEETING: Monday, April 16, 1951, Auditorium, Library of Hawaii, at 7:30 pm. Dr. C. E. Pemberton, Entomologist with the H.S.P.A., will speak on the subject, "The History of Biological Control of Insect Pests in Hawaii." You and your friends will not want to miss hearing about Dr. Pemberton's many interesting experiences in this field.

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