SOME NOTES AND OBSERVATIONS ON LAYSAN ISLAND FAUNA
April 28, 1959 to May 1, 1959

By Raymond J. Kramer

A. On April 25, 1959 at 2000 hours, a party of 4 observers departed from Honolulu aboard the U. S. Coast Guard ship "Matagorda*.

The names and addresses through which they can be reached are recorded below, so some of these notes refer specifically to information which is in the hands of parties other than myself. Information desired on these subjects can be obtained by writing directly to the person whose name appears in parentheses.

1. Dr. George Butler, entomologist, University of Arizona, (sabbatical leave to Bd. of Agri. & Forestry, Honolulu 14, Hawaii)
2. Dr. Hubert Caspers, hydrobiologist, Hamburg University, Hamburg, Germany (sabbatical leave to Marine Experiment Station, U. of Hawaii, Coconut Island, Oahu)
3. William Smythe, zoologist, Hawaii Sugar Planters Assoc., Honolulu, Hawaii
4. Raymond Kramer, wildlife biologist, Div. of Fish & Game, Bd. of Agri. & Forestry, Honolulu 14, Hawaii.

Unfortunately, our proposed 10 day visit to Laysan was cut to 3 days due to conditions beyond our control, and only a superficial examination of the island could be made in so short a stay. We were also hampered by stormy weather all the first night ashore and the next day due to the passage of a waterspout between Laysan and Midway Island. This did however provide an interesting change in climate which had an affect on the routine habits of some fauna observed.

It is hoped that the following commentary on conditions observed may help in some small way to start to fill the large gaps in the written literature which is at present available.

B. General Notes:

April 26...Aboard the Matagorda...40 to 60 miles south of Nihoa Island. A Masked Booby landed on the fantail at 1000 hours. This bird appeared to be immature and upon examination was found to have an unidentified species of Mallophaga on the band and neck region. I believe Dr. Butler collected several specimens. This landing was reported as being extremely unusual in these waters. I also received reports of an unknown specimen of owls and "seahawks" and one bird described as similar to the Eastern Cliff Swallow, as landing at night when this ship was at "Station Victor" (USCG record) on prior trips. The available descriptions were inadequate for identification purposes.
Also seen from 1000 to 1300 were Bulwers petrels, Laysan Albatross, Tropic Birds, Grayback Terns, 2 Fairy Terns, Frigate Birds, and unidentified Shearwaters.

April 27...12 Black-footed Albatrosses followed the ship all day. Few other birds noted.

April 28...Landed on Laysan about 0930. 50-70% scattered clouds, rain squalls on horizon. Temp. 79°.

Smythe and I made a Monk seal census upon landing. We counted 35 males, 47 females, 36 immature (pups and small seals), and 188 unidentified seals, for a total of 226. The sex ratio data is open to question, as this was the first time we had seen those animals, and not being familiar with the colouration at that time, may have been subject to error. Further comments on the Monk seal are included later. The census encompassed the entire beach edge of the island and about 100 yards into the Scaevola. It is believed to have an error of 3% or less.

Two census transects were made in the afternoon (See Richard E. Warner, Biologist, Bd. of Agri. & Forestry, Honolulu 14, Hawaii) following 1952 compass transect lines. This data is as follows, with an average pace (heel to heel) measured at 23 inches.

<table>
<thead>
<tr>
<th>Transect #2, lagoon to shore</th>
<th>paces' predominant</th>
<th>Laysan</th>
<th>Laysan Finch</th>
<th>downy Albatross</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>plant cover</td>
<td>Teal</td>
<td>male</td>
<td>female</td>
</tr>
<tr>
<td>160 - hypersaline</td>
<td>lagoon flat &amp;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyperus laevigatus</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>71 Ipomea</td>
<td>pea-caprae</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>50 mixed Ipomea</td>
<td>and unidentified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gramineae</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Gramineae and bare sand</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>28 paces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83 mixed Gramineae,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tribulus cistoides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boerhaavia diffusa</td>
<td></td>
<td>16</td>
<td>16</td>
<td>108</td>
</tr>
<tr>
<td>16 paces of beach edged with Scaevola frutescens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Transcet #10, Camp to lagoon

<table>
<thead>
<tr>
<th>Paces</th>
<th>Predominant</th>
<th>Laysan</th>
<th>Laysan Finch</th>
<th>Downy Albatross</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plant cover</td>
<td>Teal</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Scaevola, Tribulus</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>Boerhaavia</td>
<td>50 paces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600 paces bare sand, Tribulus, Boerhaavia</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>120 paces Gramineae and Ipomea</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>54</td>
</tr>
<tr>
<td>50 paces Cyperus on lagoon iles</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>52</td>
</tr>
</tbody>
</table>

The reason for the lack of Black-footed Albatross seen on the 2 transects is primarily due to the location that was censused. It was noticed that the primary nesting ground of the dark species was on the northwest and which is bare sand for the most part. That a thin line of nesting Black-footed Albatross is sandwiched between the Laysan Albatrosses nesting on the beach at the Scaevola edge, and the denser Laysan population in toward the lagoon. Generally speaking, the dark species is to be found nesting on the sand ridge between beach and lagoon, with small numbers scattered randomly over the rest of the island, but not among dense Laysan Albatross colonies of the southeast edge.

The following birds were seen with eggs or young in various stages of development:

1. Wedge-tailed Shearwaters - only two downy young of these birds were seen, while the majority were just beginning burrow cleaning, digging, and nesting activities.

2. Sooty Terns - in the major tern colonies, these birds were in the process of laying and incubating eggs, but many of those which were distributed elsewhere on the island under Scaevola had already hatched their young and downy chicks, who would scramble out of the nest area on the least disturbance.

3. Frigate Bird - naked and downy young were about equally in evidence but some adults were still incubating eggs. Adult males were noted performing mating rituals in the same colonial groups.

4. Red-legged Booby - no young were seen; most adults were on eggs however.
5. Masked Booby - very few young were noted, but the majority of birds were on eggs.

6. Red-tailed Tropic Bird - nesting in heavy Scaevola, on eggs, one egg picked up was being pipped.

7. Fairy Tern - all stages of development egg, naked, downy young to fully feathered juveniles with downy feathers protruding through the contour feathers of the throat region.

8. Christmas Shearwater - no birds were seen nesting; no pairs noted, probably less than 100 birds on the island.


Also seen in small numbers were the European Turnstones, Bristle-thighed Curlews, and several Golden Plover.

April 29...Heavy rain, wind from the north, started about 0300 and continued until 1200 - lull, then at 1400 the wind shifted to west-northwest and very heavy squall until 1530. Probably 1-1/2 to 2 inches of rain in 14 hours. Birds were active throughout this period, with shearwaters flying and crawling into our open tent all night, as long as the lamps were lit. Also, when walking about with lamps we were hit on the head and body continually by shearwaters, apparently attracted by the light. The next night however, when the weather was calm, we were not bothered by such harassment. The lagoon rose about half way up the flats; i.e., almost to the Morning Glory. Some Albatross and a few shearwater nests were inundated.

LAYSAN FINCH -

Mostly paired, but no nests were found, although several areas were searched extensively when "finches" were noted emerging from bunch grasses. Paired males would drive off other males when approached. Color differences obvious for the majority of birds seen. Two birds were noted eating seeds of Tribulus, extracting the seeds from one pod of the six sided fruit after considerable effort in detaching one section at a time from the fruit. They took the small light green leaf clusters sprouting from the runner ends. They ate the flower centers of Morning Glorys and "nibbled" along the prostrate runners of Tribulus and Boerhaavia.
Many birds were seen emerging from empty shearwater burrows, particularly males. I believe this to be just general exploration of potential nesting territory.

HAWAIIAN MONK SEAL -

On April 29, a female gave birth to one pup. Although we did not see this actual act of parturition, the umbilisms were still attached to both animals and what appeared to be the placenta was on the sand next to the animals. The pup's eyes were still shut. Later on in the day we came across another pup with the umbilicus still attached and fresh but with its eyes open. I believe this pup was born not more than 36 hours before.

Females with young tend to loosely congregate and were all found on the west. Several females with young had not moved from the bedding places in the Scaevola for distances of 30 to 40 feet in one 24-hour period. They had not moved towards the water during this time. The females with elder pups (over 2 to 3 days) were very pugnacious and protective, attempting to attack intruders, while ones with apparently new born pups laid at the waters edge and were not nearly as defensive.

On one occasion, 2 males had a prolonged battle in the shallow reef waters, with a female on the beach apparently being the object of concern. On April 30, we saw a male protecting 1 female against the approach of another male and chasing the intruder into the surf. He also threatened us when we approached the female. We also saw a small male (about 1/2 the size of the female) threaten us as we approached the female. Apparently there are no harems formed by the males of this species.

On overcast days, all seals seen had crawled up the beach along to the edge and into the Scaevola and spent the day (and all night as far as we could discern) sleeping. There was a minimal amount of activity such as swimming or fighting at these times. When the sun shone brightly and the temperature rose considerably, there was general activity by both sexes throughout the day with constant patrolling of the beaches and short underwater fights whenever males sighted each other. Apparently the hot sun caused a certain amount of discomfort as the animals rarely moved more than 50 feet up the beach from the waters edge, which in itself caused an uncomfortable amount of exertion as the average lunging "step" of the seal in forward movement was only 6 to 8 inches. After a series of 15 to 20 lunges, the animal would stop and rest for 2 to 5 minutes before continuing.
Although various species of reef fish were numerous, no seals were seen attempting to catch them for food. There were often 8 to 12 fish of a foot or so long swimming along just behind the rear flippers of the seals and these were completely ignored.

**LAYSAN TEAL -**

Up to the present time I have been able to find absolutely no description of the physical differentiation between the sexes of the teal in any of the literature. I was told that we may experience some difficulty in distinguishing sex, but upon a short examination believe I have found several characters upon which a positive year-round identification can be made. The appearance of these birds, as with other ducks, changes rather markedly throughout the seasons, and at this time of year both sexes have whitish eye rings, but the males is much more pronounced while the female's eye ring tends to spread outwards to a mottled while throughout the head and neck region. However this is extremely variable when on my last visit to the pair in the Honolulu Zoo (June 1) the male was about equally mottled.

The 3 characters which do not appear to vary throughout the seasons are as follows:

1. The primary feathers behind the scapulars (when wings folded) are dark brown on the distal edge, fading or blending to tan at the proximal (top) edge, while the female has more or less uniform primary coloration of dark brown.

2. This is also true for the outer tail feathers when at rest or walking; that is, the male appears to have a light colored "V" on the tail region when seen from behind.

3. For definite sexing on specimens which might be borderline cases, the male always has the upper central tail feathers sail or semi-boat-tail shaped in a manner approximating those of the common mallard duck, although the curve is not so pronounced.

On April 30, 2 teal nests were found in the middle of *Cyperus laevigatus* patches. One nest had 6 eggs in it with the female on the nest and the male close by. The other nest had 4 eggs in it with the female on the nest and no male in evidence. Although we did not keep count, I would estimate that 80 to 95% of all teal seen were paired. Very few singles were seen and it is possible that their mates were hidden in nearby areas. No breeding displays were noted and the birds did not seem loathe to leave grassy patches when disturbed, so I would assume that actual nesting activity had not begun as yet, although certainly not far off. A very carefully conducted "headcount" of teal was made along the lagoon area from the lone tree to
the phosphate rock pile in the albatross colony at the southwest end of the island and a total of 150 birds were seen. This was composed of 1 banded male, 1 banded female, 76 unbanded males, and 74 unbanded females, 6 unidentified birds also flew from this area.

In an area 60° east of the ironwood tree and 350° from the south edge of the lagoon, 11 banded teal were seen on April 28. (Perhaps Warner's transects #5 or 4 come through here). 5 females banded on the left leg, 4 males banded on the right leg, and 2 males banded on the left leg were in this immediate vicinity. No unbanded birds were seen in this area. It is not known whether the 2 left-leg banded males were the result of an error in banding or perhaps banded in a different year.

Time did not permit a complete and accurate circuit of the lagoon areas where teal concentrations appear to be located, nor was sufficient manpower available for such an attempt but from the average densities seen in these randomly picked areas, I would not hesitate to estimate 600 to 700 teal on the island. I fully believe that 5 men making a careful survey in a loose line could count the total number of birds present in about 10 to 12 hours, assuming time spent in determining if bands are present on the individual birds.

4 unbanded pairs were seen on the sand beach and rocky shore of the east end, with one male making a short flight to the ocean edge at a rocky cove, landing in the shallow water and swimming there for approximately 5 minutes. He ducked his bill into the water several times in about 3 inches of water, but it was impossible to tell whether he was taking water or some form of solid from the bottom. He then walked back up the beach to his mate who had stood in one place watching the procedure.

On April 30, 2 male and 1 female teal were noted in the lagoon waters, wading from the edge into water deep enough for them to swim. From time to time, one or another of the birds would put their bill or whole head under water in the manner of other "puddle" ducks when feeding. No mud was stirred up though, so it is possible the birds were not sieving the bottom. Actually, in this hypersaline water, I do not believe any algal growth was present on the bottom, but an unknown species of amphipod was found in the shallow pools (Caspers). The only other type of feeding activity noted was what appeared to be the major way of food gathering at this time of year, that is, running along the lagoon edges with head near the ground, and bill open, eating as many of the small "salt flys" as they could scoop up. These flies were present along the lagoon literally by the millions, and, amazing as it may seem after all the prior expeditions to the island, seem to be a previously undescribed species. (See Butler). As the birds would eat them, swarms would come up off the ground and when blown downwind, the birds would be rather unsuccessful in their attempts, unless they happened to be running upwind. The birds have no technique here yet, running as often downwind (unsuccessful)
as upwind (successful).

The last comment applies to their flight ability and propensity. On calm days, the ducks are quite "spooky" and will take flight readily if approached too fast. They do not appear to have the grace of flight or staying power so commonly associated with other members of the teal family. This is further borne out by the observations that on windy days the ducks were very reluctant to fly and would attempt to escape our presence only by running along the ground, or if hard pressed by abrupt flights of 50 to 100 feet.

Raymond J. Kramer
Div. of Fish & Game
Kaumakakai, Molokai
June 10, 1959
March 5 - Visited Torn Island 1:00 to 5:00 P.M.
Departed French Frigate Shoal 10:00 P.M.

March 7 - Arrived Laysan Island 10:00 A.M.
Went ashore 1:00 P.M. Spent night on island

March 8 - Returned to ship 4:00 P.M.
Departed Laysan 6:00 P.M.

March 9 - Arrived Lisianski Island 11:00 A.M.
Visited Lisianski 1:30 to 5:00 p.m.

March 10 - Visited Lisianski 8:00 A.M. to 3:00 P.M.
Departed Lisianski 6:00 P.M.

March 12 - Arrived off Pearl and Hermes Reef 7:00 A.M.
Visited Southeast Island 7:00 to 9:00 A.M.
Departed Pearl and Hermes Reef 9:00 A.M.
Arrived Midway Islands 6:00 P.M.

March 15 - Departed Midway Islands 3:00 P.M. via Navy Aircraft.
Arrived Barber's Point N. A. S. Oahu 10:00 P.M.

Abstract

In general conditions found on the various islands are discussed in this report.
Notes on the monk seal and birds are recorded with comments. An evaluation of
Lisianski island as Laysan teal habitat is given. Conditions on East island,
French Frigate Shoal, are described and illustrated with photographs of the
abandoned facilities there. An account of two unauthorized expeditions to the
refuge by the U. S. Navy is given.
Sanderling - only about 30 estimated. Other small sandpiper type birds may have been seen but not identified.

Shoveler duck - one pair was seen on the north shore of the lagoon.

Lisianski Island

We arrived off Lisianski March 9, with a fair west wind blowing. The "Coast Pilot" warns against attempting landing except during summer calms, and then to land only on the west beach. However, we found a good lee to the east of Nevada Shoal and were able to approach to within two miles or so of the island. Easy landings were made near the southeast end on two consecutive days while the cutter cruised offshore. The only danger to small boats is in the extensive shoal water to the east of the island and there are several coral head areas that must be avoided.

We spent a total of ten and a half hours ashore on Lisianski. Immediately upon landing the first day, a shoreline count of the seals and turtles was made.

One hundred and seventy-two (172) seals and eleven (11) turtles were counted. Several of the turtles were fairly small which indicates some reproduction, but no sign of eggs or laying was noted. One large turtle was seen, which had one front flipper recently amputated probably by a shark.

Refuge signs were posted on the east and west beaches. Photographic stations were established at various points and the island was examined for its potentiality as Laysan teal habitat. Seabird conditions were noted.

Seal Observations

One dead black pup seal was found at the landing site which was assumed to have been stillborn and the skeleton of an adult was found on the north shore of the island. One large single female was noted on the west shore which was in an extremely emaciated condition. The animal was apparently very old and incapable of feeding properly or perhaps, had just returned from a long journey at sea.
An attempt was made to note its tooth condition but this was not possible.

One young seal was found with its left front flipper severed and very large, deep, crescentic scars on its underside. On examination of these scars, they were definitely shown to have been made by a large shark as each characteristic tooth mark could be seen in the thick subcutaneous fat of the animal. The teeth had penetrated only slightly into the flesh and it was felt that the seal would recover. However, the wound bled considerably when the animal entered the water and surely would attract more sharks. Examination of other seals and the scars that are so common on them, indicated that most of these scars were made by sharks. The teeth of even the largest bull seals are too short and blunt to inflict such wounds.

Lisienski as Potential teal Habitat

This island is, in our opinion, definitely not suited for the transplantation of the Laycan teal. The primary vegetative cover is tall bunch grass (Eragrostis variabilis) which covers the interior portion of the island. There is an almost complete ring of Scaevola around the island with a few small patches throughout the interior. There are only minor stands of Beach Morning-glory, Tribulus, and Portulaca, and these appear to be generally crowded out or unable to compete with the bunch grass, due to the disturbance caused by shearwaters and petrels in their burrowing activities.

We noted that Portulaca has the same propensity for drawing flies as the morning-glory does on Laycan. However, there are comparatively few flies present on Lisienski and since insect life comprises a large portion of the food of the teal, it is doubtful if there would be sufficient food available for even a small number of teal.

There are no ponds, lagoon or water seeps on the island. Whether such standing water is a necessary part of teal habitat is not known; however,
Judging from the concentration of the population on Laysan around the lagoon, it seems obvious that the lagoon edges with its saline flats and vegetation are preferred.

Cypemn lacvigatua was not noted on Lisienski. On Laysan this plant appears to provide important nesting cover.

Bird observations

Time did not permit a thorough examination of the island for seabirds; however, the following observations were made:

Laysan Albatross - The solid stand of bunch grass which covers the interior seems to provide only marginal nesting habitat for this species. The upper beaches and openings are preferred.

Black-footed Albatross - The "black-feet" on Lisienski appeared to be almost entirely restricted to the beaches and the small open sand areas. These and the "Laysans" were mostly with young about one foot high.

Noddi-tailed Shearwater - The interior bunch grass area is literally honeycombed with the burrows of this species and the Bonin island petrel. The ground surface is extremely uneven due to the loose nature of the sand and constant digging activities of the birds.

Terns - Sooty terns were present in large numbers over the central part of the island but were not nesting as yet, while the few gray-backed terns seen were usually on eggs. The ironwood trees are used as nesting sites for Hawaiian and Fairy terns.

Boobies - Several brown boobies were seen preparing nests in the interior of the island, while the blue-faced boobies seemed to prefer the edge of the vegetation above the beach. Red-footed boobies were nesting on the Scawolg but were comparatively rare.
Red-tailed Tropic bird — Many red-tails were flying over the Scawolan on the west side of the island and several were noted on the ground under the bushes. No eggs or young were seen.

Migratory birds — A flock of 100 or more turnstones and a few plover were seen circling the island but in general, shore birds were relatively scarce. Bristle-thighed Curlew were common in the interior grass land.

Pearl and Hermes Reef

On March 12, we arrived off Pearl and Hermes Reef at dawn. We were able to make an easy landing on Southeast Island and spent an hour and a half ashore. Two refuge signs were posted and photographic stations were established and several interesting observations were made.

Visitation and disturbance

Deep tracks on the beach landing point and over the length and breadth of the island were examined and it was established that some sort of amphibious tractor had been ashore within the last year or so. Near these tracks, in the center of the island, Foxtail grass (Setaria sp.) was found to have become established in small patches; usually not more than a foot or two across. It was assumed that the tractor must have come from Midway or some place where foxtail grows and seeds were brought in by it. In the time available, several plants were pulled up and the roots exposed to the sun. Establishment of such grasses on these small islands could have a drastic effect upon the ecology. Foxtail competes rather successfully with other strand zone plants in Hawaii and could conceivably crowd out such plants as Tribulus and Portulaca.

Other signs of visitation to the island were: a steel observation tower, about fifteen feet high; several 55 gallon drums, some apparently full of fuel; the shells of four or five turtles which were killed and some hollow tile blocks lying about. A later inquiry on Midway, revealed that an amtrack had indeed landed on Southeast Island sometime last year on a project known as "LORAC." It is not known what this project involved.
### Table I. Monk Seals Observed in Beaches - March, 1961

<table>
<thead>
<tr>
<th>Island</th>
<th>Adults</th>
<th>Yearlings</th>
<th>Pups</th>
<th>Undetermined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shark</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>East</td>
<td>168</td>
<td>33</td>
<td>23</td>
<td>1</td>
<td>229</td>
</tr>
<tr>
<td>Laysan</td>
<td>117</td>
<td>36</td>
<td>19</td>
<td>6</td>
<td>172</td>
</tr>
<tr>
<td>Lisianski</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>186</td>
</tr>
<tr>
<td>SE Is. P &amp; II</td>
<td></td>
<td></td>
<td></td>
<td>55+</td>
<td>35+</td>
</tr>
<tr>
<td>Kure</td>
<td>298</td>
<td>75</td>
<td>43</td>
<td>51+</td>
<td>467</td>
</tr>
</tbody>
</table>

* Count incomplete
** Counted March 12 by Naval officer

### Table II. Sex Ratios of Seals on Laysan and Lisianski islands, March, 1961

<table>
<thead>
<tr>
<th>Island</th>
<th>Adults</th>
<th>Yearlings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Laysan</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Lisianski</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Totals</td>
<td>26</td>
<td>41</td>
</tr>
</tbody>
</table>
Notes on a visit to Laysan Island by extracted from notes in the files of Hawaiian Department of Fish and Game on September 1968. No report was apparently made on the trip. R.B.C.

Arrived on the ship Matagorda
Departed on the ship Chataqua

Arrived Laysan at 0905 3 December 1963 (2nd boat arriving at island 0945)
Departed Laysan at 10 December 1963

Personnel: Nixon Wilson, Roy Tsuda,

General notes:
Dec.3,1963 -- made seal and shorebird count
Dec.4,1963 -- 12 coconut trees from 10 to 35 feet tall at the north end of the lagoon. 7 coconut trees from 15-20 feet tall at the south end of the lagoon. Lice and ticks are being recovered from petrels and shorebirds and albatross nests by Nixon Wilson.
Dec.5,1963 --
Dec.6,1963 -- continued photostation work. Roy Tsuda, phycologist, looked at plants. Planted the following seeds north of coconut grove on north side of island. [Scientific names below were difficult to read. alternative spellings are given in parentheses. R.B.C.] Tsuda took salinity samples.
1.) Lipochaeta integnifolia (integrifolia) -------- NEHE
2.) Solanum nelsoni var. Intermediate ----------------- POPOLO
3.) Chenopodium oahuensis ----------------------------- AHEAHEA
4.) Achyranthnes splendens (splenoens) var. reflexa-
5.) Cenchrus agrimoniodes (agronioides) ----------- BURGRASS
6.) Lepidium awaihiense (awaihoense) -------------- PEPPERPLANT
Dec.8,1963 -- planted nehe down near the lagoon. Deepest part of lagoon is about 2 1/2 feet. Three plants not found by Tsuda that were here in 1961 are Capperus sandwichiana, Portulaca lutea, Heliotropium.
Dec.9,1963 --
Dec.10,1963 -- received signal from Chataqua on schedule

Notes on the Birds [Given by species rather than by day. R.B.C.]


*Many of these notes are paraphrased to put them in the form of sentences. I don't believe there is any information bias or loss in these phrases. R.B.C. Comments on albatross where no species is indicated are included under Laysan.
Wedge-tailed Shearwater: (Dec.3) About 150 dead young on the beach. Saw several in weakened condition. Made skin of bird found with broken wing. (Dec.4) Wedge-tailed Shearwater young are in the last stages of feathering. (Dec.10) Saw several Wedge-tails in the surf attempting to fly.

Sooty Storm Petrel: See summary statement; p.3

Bonin Petrel: (Dec.9) One burrow dug up contained two mature birds.

Bulwer’s Petrel: None mentioned in notes; apparently absent.

Red-tailed Tropicbird: (Dec.5) Found fully feathered young under bush near camp. No adults seen yet. (Dec.9) Saw adult Red-tailed Tropicbird leave area where young was. I examined the spot and found the young gone. (Dec.10) Three Red-tailed Tropicbird adults flew over the landing.

Blue-faced Booby: Blue-faced Boobies seen, one immature. (Dec.4) Saw another Blue-faced booby young -- full grown but not full plumaged.

Red-footed Booby: See summary statement; p.3.

Brown Booby: See summary statement; p.3

Great Frigatebird: (Dec.4) A few frigates unable to fly but most able (Dec.6) Saw two young frigates with down around neck, still being fed by parents.

Sooty Tern: (Dec.4) Saw several Sooty Terns in the air, none on the ground. (Dec.4) Common at night but not seen during the day.

Gray-backed Tern: No mention is made of this species in the notes. Apparently not present.

Common Noddy: (Dec.4) Saw a Common Noddy fledging and an immature not quite able to fly. (Dec.7) Birds seen on eggs and young seen. (Dec.8) Saw subadult Common Noddy just able to fly.

Hawaiian Noddy: (Dec.4) Most of Hawaiian Noddies in Casuarina have newly hatched chicks; some with eggs. Finches seen eating egg from nest. (Dec.8) About 1/2 the Hawaiian Noddies in the Casuarina have young or eggs.

Fairy Tern (Dec.3) Most abundant at SW sector; several in flocks; no eggs seen. (Dec.4) 1/2 grown young still in down stage, seen on outer beach ridge. (Dec.6) Fairy Terns on eggs at rock pile at south end.


Ruddy Turnstone: (Dec.3) Counted on outer beach: 427. Counted on inner beach: 2341 Total: 2868. (Dec.5) Examined injured bird for ectoparasites. Found several large ticks under bill on neck. Noted in evening large flocks of Ruddy Turnstones roosting on rocks on the north and south ends. (Dec.8) Saw Ruddy Turnstones feeding around broken gooney egg (flies?)


Shoveler: (Dec. 7) Saw 9 Shovelers (5♂, 4♀) on the west side of the lagoon.

Pintail: (Dec. 7) Saw 3 male Pintails (one not in full plumage) on the west side of the lagoon.

Duck sp. (Dec. 6) Saw a pair of ducks not Laysan Teals near the north end of the lagoon. Reddish head on male, white underparts but no pin-tail. Dr. Wilson also saw a duck, not pintail.

Gull sp. (Dec. 7) Saw a gull (Glaucous-winged or Herring?) feeding along the lagoon edge -- same as yesterday's "strange bird". (Dec. 6) Saw strange bird feeding in Cyperus mats (flooded) near south coconuts. Large, almost as big as albatross, with large sharp heavy beak, gray all over with black and white flecks. Long pointed wings in flight. Took picture.

Least Sandpiper (? RBC1 (Dec. 8) "Nixon Wilson saw a least sandpiper yesterday"

Laysan Finch (Dec. 4) Laysan Finches seen eating eggs from Hawaiian noddy (nest(s). Also seen eating abandoned albatross eggs and coconut seeds in the north grove.

Laysan Teal: (Dec. 3) No Laysan Teal seen on outer beach or at Scaevola. (Dec. 4) Caught duck 575-94117 - a male banded 9/7/61 in the same area. (Dec. 3) Counted on inner beach: 112. (Dec. 4) Ducks concentrated at east side at water's edge. "Pothole" effect in ???? grass favored by birds. Recovered 2 banded in 1961. 575-94117 ad♂ that was young in 1961; 575-94248 ad♂. Band 16 teal: 575-94259-27♀ (Dec. 6) Saw flock of 55 Laysan Teal in water, some on Cyperus mats; some in morning glory by south coconut grove. Another 50 seen by Wilson on west side of lagoon at same time. (Dec. 10) Caught 4 9 ducks (lists two rec.) 575-94180, 575-94177. Result of Dec. 10th duck census around perimeter: 103 ducks. Average flushing distance: 13 yds. Range from 0 to 40 for from 1-12 birds. Count on Dec. 3 gives 112:75 of which it could not be observed whether were banded or not. Of rest 11 were banded and 25 unbanded. Banded: totals: 17 (5♂, 12♀).

Summary comments on birds

Sooty Storm Petrel: present, not breeding.
Albatross: laying
Bonin Petrel: present, not breeding.
Red-footed Booby: present, breeding.
Blue-faced Booby: present, not breeding.
Brown Booby: present, not breeding.
Frigates: present, a few fledglings.
Sooty Tern: present, not breeding.
Common Noddy: present, breeding.
Hawaiian Noddy: present, breeding.
Fairy Tern: present, breeding.
Results of Salinity Tests

I Ocean water (surface) analyzed by D. Hashimoto (P.O.F.I.)

1. slightly wave washed beach 35.01 0/o/o
2. tidepool on coral ledge 35.19 0/00
3. slightly wave washed beach 35.12 0/00
4. wave washed shore 35.17 0/00
5. calm shore over reef 35.20 0/00
6. sandy area between shoreline and reef 35.14 0/00
7. shore off NW (???) 35.15 0/o/o

II Lagoon water (surface) analyzed by Tim O'Callaghan (Dept. of Botany)

8. over Cyperus laevigatus ---- lost ---
9. " " " 59 0/o/o
10. " " " 80 0/00
11. " " " 66 0/00
15. over Sesuvium portulacastrum 60 0/00
18. " " " 62 0/00
10. over Cyperus laevigatus 64 0/00
20. " " " 62 0/00
30. " " " 60 0/00
14. over Lyngbya & Cyperus 62 0/00
13. near Cocos nucifera 61 0/00
31. over Cyperus laevigatus 60 0/00
16. in one foot deep puddle 12 0/00

III Spring on NE side of lagoon (surface samples) analyzed by Tim O'Callaghan

12. flooded spring 43 0/o/o
17. flooded spring 53 0/o/o

Seals and Turtles: (Dec 3) 3 sea turtles and 179 seals. (Dec.4) tagged 3 turtles with two tags (?RWC) each.

# 1 ♀ left rear right rear
    1030 1024
    3 ft. 1 5/8 inches long by 3 feet 2 inches wide

# 2 ♂ 1032 1031
    3 feet 2 inches long by 2 feet 10 1/2 inches wide

# 3 ♀ 1034 1033
    2 feet 10 inches long by 2 feet 6 inches wide.