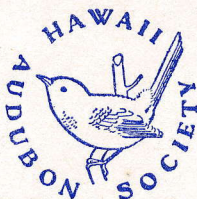


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NOTES ON THE SEA-BIRDS OF SAND ISLAND
OF THE JOHNSTON ISLAND GROUP
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In connection with a study of the courtship of noddy terns, I had an opportunity to visit the Johnston Island group for a few days, from April 6 through April 10, 1957. (I must thank the Office of Naval Research for arranging this trip, and the personnel of the air force base on Johnston for the help and facilities they provided.)

These islands are not visited by ornithologists very frequently; and so it may be of interest to record the sea-birds I saw there.

There are actually two islands in the group.

The main island is relatively large, over a mile long; but it is hardly more than a series of runways at the present time. The only birds I saw on it were the usual shorebirds and one Short-eared Owl which flew out of a small patch of grass one evening.

The other island, Sand Island, was covered with sea-birds of several kinds.

Sand Island is really two very small and low islets, connected by a largely artificial causeway and road. The whole thing is about a half mile long, extending almost exactly due east-west, about three quarters of a mile north-west of the main island. It was part of the air base until very recently (the last personnel seem to have left in October, 1956); but it is now completely abandoned except for occasional visits. The various man-made structures on the two islets have been allowed to decay, and some of them have already collapsed.

The species I saw on or near the island can be listed as follows:

Puffinus pacificus, the Wedge-tailed Shearwater.

At least 10 or 11 of these birds were found on the eastern islet, sitting on the ground in the open or just inside the mouths of their burrows. (I was never able to visit Sand Island at night; so it is quite possible that the total population of shearwaters was much larger.)

Phaeton rubricauda, the Red-tailed Tropic-bird.

There were approximately 12 birds of this species, most of whom were busily engaged in their aerial "courtship" display, flying back and forth the length of the whole island and circling over the surrounding lagoon. Most of the "courting" birds landed from time to time on the eastern islet, and seemed to be prospecting future nest-sites under bushes and small trees. Three birds were already incubating eggs under one particularly large Scaevola bush.

P. lepturus, the White-tailed Tropic-bird.

A single individual of this species flew straight across the island around mid-day of September 7th; and the same bird or another flew by at approximately the same time the next day.

P. aethereus, the Red-billed Tropic-bird.

One individual of this species was present during every day of my stay. It flew back and forth in company with the Red-tailed Tropic-birds; but did not participate in their displays. It did, however, come down to land with one of the Red-tails several times. A second Red-billed Tropic-bird appeared on September 9th. It also flew back and forth with the Red-tails; but the two Red-bills appeared to ignore one another.

This record seems to be a considerable extension of the known range of P. aethereus (Joseph E. King, personal communication); but it is quite definite. I did not collect the two birds; but I got excellent views of both, even picking one of them up in my hands, and heard their shrill screaming calls (quite different from the rather hoarse croaking of the Red-tails).

Frigate Birds (presumably Fregata minor).

Frigate Birds were the second most abundant species on Sand Island. There were at least 900 adult birds nesting on the girders of four overturned and partly collapsed radio towers on the western islet. A few of these were still incubating; but most of them were sitting on chicks, some of which were half-grown. There were also many birds in juvenal plumage flying overhead or resting on the same four towers, another collapsed tower a few yards away, and a few low bushes on the same islet. I would guess that the total number of Frigate Birds in the area was not less than 2000. (It might be noted, incidentally, that none of them ever landed on the bushes, trees, or houses of the eastern islet.)

Sula sula, the Red-footed Booby.

There were approximately 100 Red-footed Boobies on the western islet. Some of them were immature birds in juvenal plumage; but most of them were adults, sitting on nests with eggs or fairly small chicks, on the same towers as the Frigate Birds.

S. leucogaster, the Brown Booby.

A small breeding colony of 18 pairs of Brown Boobies was located on the southern tip of the western islet, in the low grass and shrubbery. One pair was still sitting on eggs; and the rest had young in various stages of development, some of them beginning to fledge. The male of one pair with a small chick was still in immature plumage (with spotted belly), and retained a honking voice like the female.

S. dactylatra, the Masked Booby.

A small number of Masked Boobies, about 11 or 12 (mostly adults, with 2 or 3 immatures among them), spent most of the day time resting on the shore near the Brown Booby colony. None of these birds showed any sort of reproductive behavior during the period of my observations.

Sterna fuscata, the Sooty Tern.

This was the overwhelmingly dominant species on the island, in point of numbers. There must have been at least 10,000 birds present, almost equally divided between two colonies, one on the bare ground and low grass in the center of the western islet, and the other in the grass on a low dune in the north-central part of the eastern islet (some distance away from a group of abandoned buildings and oil tanks). These birds all seemed to be in the later stages of the "pairing phase" of the breeding cycle; i.e. at the stage, after pair-formation, when sexual behavior is most common and most vigorous, before the appearance of the first eggs.

S. lunata, the Gray-backed Tern.

A small diffuse colony of Gray-backed Terns, including perhaps 200 birds, was stretched along both sides of the causeway between the islets. Most of the birds were

incubating eggs in nests on the bare ground between boulders or patches of low vegetation.

Anous stolidus, the Brown Noddy.

There were also approximately 200 Brown Noddies on the island. Many of them were obviously paired; and most of them held territories, on either side of the causeway (alternating with territories of the Gray-backed Terns), or on the outskirts of the Sooty Tern colony on the western islet. It is perhaps surprising, therefore, that none of the Brown Noddies showed very much in the way of overt reproductive behavior. The few reproductive activities that did occur may have been the earliest signs of "courtship", or, possibly, a mere temporary recrudescence of reproductive mood in the middle of non-breeding season.

A. minutus, the Black Noddy.

Some 5 or 6 Black Noddies spent considerable periods of time resting in two low bushes on the side of the causeway. They showed no reproductive behavior of any kind.

A. ("Gygis") albus, the White Noddy or Fairy Tern.

Five pairs of White Noddies were breeding on the eastern islet, in trees or on abandoned houses. One pair was still incubating an egg; but the others had young in various stages of development, from newly-hatched to almost fully-grown.

FIELD NOTES:

Field Trip: Puuloa Rifle Range and West Loch, Pearl Harbor, October 27, 1957.

With not a cloud over the whole length of the Waianae Range, seven members and two visitors enjoyed a perfect day for a visit to the Puuloa Salt Pans and Pearl Harbor near Waipahu. A possibility of finding something different among the returned migrant birds gave our party a heightened expectancy. Could there be anything as exciting as the finding of the white-fronted goose in 1956?

Evidence of a much drier season greeted us as soon as we entered the reservation. The skylark area was completely dry. Three larks were sighted against four last year, and only one dragon-fly versus about a dozen a year ago, however this year's trip was a month earlier in the year, which probably accounts for it all.

Brazilian and American cardinals, an English sparrow and a white-eye, and both barred and lace-neck doves were seen. In a tangle of morning glory vines and kiawe trees we discovered ricebirds and quite a few linnets.

As we drove through the reservation we were puzzled by evidences of activity. Swaths of the dry land jungle - kiawe trees, shrubs, high herbaceous plants and tangled vines - had been laid low as though men had been practicing the handling of bull-dozers. Such lanes occurred about every five hundred feet. One speculates on the effect to the remaining vegetation where rainfall is perhaps as scant as anywhere on Oahu - beneficial or detrimental?

Many of the salt pans were almost dry, or entirely so. The two deepest ones, however, gave us a surprise. Their bottoms were pock-marked with pits from 20" to 27" in diameter. Swarms of mosquito fish were present, as usual, and then we saw the new fish, two or three - slate grey, about a foot long, with long heads, the mouth extending fully a third of the length of the body and with the lips and chin of a pale sulphur yellow.

Mr. Joseph King recognized the species as the tilapia from Africa. He surmised it

had been a recent introduction in an effort to establish a new source of bait fish for the tuna industry, and that it could be a food fish in itself.

Mr. King explained that the yellow coloring at the mouth indicated that the tilapia was in the breeding stage, though probably coming to its close as it was not as bright as at the height of that period.

The tilapia belongs to the mouth-breeders. The male builds the nest, lifting a mouthful of mud from the center of the site selected and carrying it to the limits of the nest in prospect, where he drops it and returns to repeat the operation until his excavation is as large as he considers ample. He next attracts the female of his choice and escorts her to the nest, where she deposits her eggs. After the male fertilizes them, the female gathers the eggs into her capacious mouth and carries them about with her until hatched, which takes about four to six days. For several days afterward she carries the young in her mouth.

A female at this stage has been teased until she spews out the young in all directions, but, once left alone, at a signal she somehow gives, the young, four or five hundred in number, immediately return to her as filings to a magnet, and it is said to be amazing to watch how her pouches and gills swell to accommodate each and every one of them.

By this time an alarm had been spread among the feathered inhabitants of the salt pans, warning of our presence. A black-crowned night heron flapped heavily away, some of the thirty-two pink-legged Hawaiian stilt counted rose up and settled farther away, or cautiously edged away from our vicinity as they fed. A turnstone froze to its rock, then decided we could not be trusted and fled. A coot took refuge behind a hummock of grass and a gallinule did likewise. An arriving flight of nine tattlers changed direction when it discovered us.

Three greater yellow legs were bolder, but on the alert. However we had the pleasure of watching them for sometime through our glasses; and a shoveller duck was observed. Adding an estimated over-all count of one hundred plover, plus several common mynahs, brought a list of birds to nineteen varieties before we sought the shade for lunch.

We timed our visit to Waipahu just right. What a wealth of bird life was presented to our view, spread out over the mud flats dotted with low mangrove bushes! Hawaiian stilt, in great number, Pacific golden plover and sanderlings. Then an observant eye spied two semi-palmated plover and one black-bellied among the many golden. Two dowitchers were discerned, and two more shoveller ducks close to us. We could only hazard a guess as to what might be among the many birds feeding beyond the limit of our field glasses. We contented ourselves with a count of twenty-four varieties for the day, a most satisfactory day of birding in Hawaii.

Margaret Smail

Editor's Note:

The semi-palmated plover were a first record for Hawaii, so far as we are able to ascertain. Dowitchers are very rare, but one dowitcher was seen at Kahuku on October 23, 1955, another in the same area on January 29, 1956, both on scheduled trips of the Society; one was seen at Waipahu on November 28, 1954, by Bob Pyle and Joseph King.

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Field Trip: Aiea Heights trail, October 13, 1957.

Eight members of the Society and two visitors enjoyed a beautifully clear day and a dry trail. Near the water tank at the start of the trail we were all surprised to hear the call notes of the Japanese Tit. Unoyo Kojima was the only one of the group,

however, who obtained a good look at the bird. This is one of the few areas on the island where the Tit is frequently sighted. Farther up the trail we heard another, but it was not seen. There was some eucalyptus in flower but very little ohia.

Having just returned from a mainland trip where I spent considerable time searching for birds, I was greatly impressed by the apparent density of the bird population. Bird song, particularly of Leiothrix, was almost continuous with frequent call notes of White-eye, Amakihi, and Elepaio. Many more birds were heard than seen, however. Although an accurate count for the day was not obtained, the relative numbers were roughly as follows:

Amakihi - numerous; I caught glimpses of 10	Barred Dove - 1 on the trail,
Apapane - numerous; but I only saw 6	several along the road
Elepaio - numerous; I had 20 on my list	House Finch - several
	Leiothrix - abundant
	Ricebird - several
	Japanese Tit - 1 sighted, 1 additional heard
	White-eye - numerous

Some of us went a short distance up the "ridge trail" that extends towards the crest of the Koolaus from the middle of the Aiea loop trail. We were approached within arm's length by a number of very curious and very friendly Elepaio. They seemed much more interested in our presence than those we had sighted along the main trail. Perhaps they don't see as many people here.

Joseph King

DECEMBER ACTIVITIES:

There will be no regular field trips this month.

CHRISTMAS COUNT (Oahu) Dec. 22 - Plan to join one of the groups. This is the year's high point in interest, and fun besides. If you aren't too sure of the birds, we need recorders, too!

CHRISTMAS COUNT (Hawaii National Park) Dec. 27 - Where else can you count 71 iiwi in one day, as we did in 1955? We plan to leave Honolulu Dec. 26, each returning as his vacation time expires. We still have room for several more. Call Chuck Hanson, 997881 for further information and reservations.

MEETING: Dec. 16 - At the Aquarium Auditorium at 7:30 p.m. This is the annual meeting, with election of officers. Plans for the Christmas count will be completed at this time.

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