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PROBLEMS OF ALBATROSSES AND MEN ON MIDWAY ISLANDS[1]

By Hubert and Mable Frings
(Pennsylvania State Univ., University Park, Pa.)

To members of an Audubon Society the term, "pest birds," may seem to combine two opposing ideas. Yet birds are becoming pests, as man sees it, in many places throughout the world. Some birds have competed with man for food since time immemorial, and they still do. But civilization has created dozens of ways in which birds can run afoul of man and gain his disfavor. In fact, we should be honest and admit that, in almost all cases in which birds have become pests, it is man who has moved in on the birds or furnished the birds with new environments that forced them into this status.

When man forces his civilization on the birds, they really have only two choices -- to move out, or to adapt to the new conditions. If they move away and become scarce, then man regards them with particular favor as objects for recreational searching. But if they learn to live near man, through adapting themselves to use what his civilization offers them, they are nearly always certain of beingconsidered pests. Starlings, which have learned to gather in the excellent roosts man has provided in his tree-studded towns and to keep warm on his heated buildings during the winters, are hated sincerely by the very people who provide them with their roosts.

What of birds, however, which avoid man and still find themselves in his way? Such is the fate of the Gooney Birds on Midway Islands. Midway Islands -- without natural source of fresh water, without natural crops -- are certainly inhospitable to man. And man did not manage to survive on Midway until recent years. Yet now, national defense -- certainly an aspect of civilization of which man should not be overly proud, reflecting as it does his inability to get along with himself -- forces us to keep on Midway large groups of people and a large air-base. And so the Gooney Birds now find themselves listed as serious pests, because their normal activities on Midway interfere with man's activities. How far can we ask a bird to go to escape from becoming a thorn in man's side? How far can we ask man to go in allowing a bird to endanger his civilization, as he sees it?

So far, man has been rather loath to solve his pest bird problems by the use of avicides, as he uses insecticides. Perhaps he realizes, subconsciously, that he is the creator of pest birds. At any rate, large scale killing campaigns for birds are seldom advocated. What is to be done, then, if birds and man are to live harmoniously in the web of man's creations? Obviously, some means must be found to induce the birds to move away, if space can be found, or to change their habits.

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1. These studies were aided by a contract between the Office of Naval Research, Department of the Navy, and Pennsylvania State University (NR160-464). Reproduction in whole or in part for any purpose of the United States Government is permitted.

We have had the good fortune to be able to show that some birds can be induced, without damage to them, to leave places where they are not desired by broadcasting to them recordings of their own communication signals, or language. In 1953, we found, rather by accident, that the recorded distress call of the European Starling (Sturnus vulgaris), when played to the birds in tree roosts could cause them to leave their roosts. If this clearance were carried out systematically, with proper attention to details of the habits of the birds, the Starlings could be driven away for long periods of time. This work was followed by more systematic studies of the languages of the Herring Gull (Larus argentatus) and the Eastern Crow (Corvus brachyrhynchos). The success attending attempts to induce these birds to move toward or away from selected spots led naturally to the thought that the Gooney Birds on Midway might be similarly affected. Accordingly, we were asked to survey the situation in January, 1958, and to return for a more detailed study during October, November and December, 1958. The practical objective was not attained; however, information was obtained on various facets of behavior and physiology of the birds, and some suggestions can be made for possible consideration. We shall present briefly some of our observations on these fascinating birds as a result of this study.

Midway Atoll, with its two islands -- Sand Island and Eastern Island -- is one of four atolls at the western end of the Hawaiian Chain which the Gooney Birds use for breeding sites. Sand Island is the location of a small town nestling alongside giant airstrips, as towns of former years lay by rivers. The building boom on Sand Island has been so spectacular that our visits, just nine months apart, seemed to be to two different places. The U.S. Navy, capitalizing on the efforts of the Morrisons, who went to Midway in 1908 as representatives of the Cable Co., has converted a potentially inhospitable sand-spit into a grass-carpeted and tree-covered island. It may well be "The Navy's Most Beautiful Isle," as claimed. This tiny islet -- only about 2 miles long and 1 mile wide -- houses about 3,500 people and thousands of sea-birds. Eastern Island, somewhat smaller, formerly more highly populated, is now much more wild.

Sand Island has broad, white, coral sand beaches rising from the limpid blue lagoon to form dunes covered with Scaevola. Inside the ring of dunes the island is generally rather low and flat. The airstrips occupy much of the western end of the island. North of these is an area covered thickly with ironwoods, Scaevola and other shrubs and low plants. Between the airstrips is a triangular area, formerly covered with trees, but now having only scattered bushes, as a result of levelling and clearing programs. South of the airstrips is an area formerly covered with trees and bushes, but now being levelled and denuded. The latter is part of a program designed to test the idea that the birds flying in front of the airplanes, and thus creating the hazard, are using the updrafts along the edges of the trees in this area. The housing and office areas occupy the northern two-thirds of the eastern half of Sand Island. Here the scenery is like that in many small towns -- tree-lined streets, grass-covered lawns, neat houses and buildings. The southern third of the eastern end is either bare, newly created land dredged from the lagoon, or is covered only by grass and low plants among a man-made forest of radio towers.

Before proceeding with an account of the habits of the Gooney Birds on Sand Island, we would like to give a word of caution about a prevalent misinterpretation of this term. Many persons, impressed by what they think is silly behavior by these birds, believe that they are really gooney. Nothing could be farther from the truth. Naturally, when an animal so perfectly adapted for life over the vast oceans comes onto land, its gait is not, to our land-locked minds, very graceful. But once one sees these birds as they are and studies their behavior sympathetically, he finds them to be among the most intelligent of birds. Man's insertion of baffles, wires and other unnatural obstructions in their paths may produce ludicrous results when they try to land, but one may ask whether a pilot could bring an airplane in through such an obstacle course. Movies emphasizing supposedly funny landings can be put together, if one wishes to take the trouble to find disturbed landings and then to photograph them in

slow motion. But these are like candid camera shots of otherwise dignified persons caught in ungainly poses. The amusement of spectators when a bird in landing comes down too fast and falls forward onto its breast is innocent enough if they realize that the thick layer of feathers on the breast make the bird's behavior most understandable and useful. Too many people, however, even those with some scientific training, act as if they believe that any animal "allowing" itself to be called gooney, must be so. Let's call these beautifully adapted birds by their correct names: the Laysan Albatross (Diomedea immutabilis) and the Black-footed Albatross (D. nigripes). If one wishes to use the nickname, let it be Gooney-bird, not gooney bird.

The life cycles and breeding habits, in general, have been described by Hadden (Hawaiian Planters' Record, 45: 179-221, 1941), and Bailey (Denver Museum Pictorials, Nos. 6, 1952 and 12, 1956), and others, so there is little need to review these here. The specific problem created by these birds on Midway is the hazard to aircraft resulting from the flying of the Albatrosses over the airstrips. The birds generally remain at lower than 50 feet in the air, and thus, if struck by a plane, cause damage to it at a most critical time. The Albatrosses have a wing-spread of about 7 feet and weigh 5 - 8 pounds, so a collision between a plane and one of these birds can be, and has been, serious. While no lives have been lost up to this time, the danger is always present.

The original question posed to us was whether sounds, particularly recorded language of the birds, could be used to influence their behavior so that the birds would either leave Sand Island to nest on the other islands, or, better yet, that they would cease flying over the airstrips while planes were landing and taking off. Our original survey, in January, 1958, indicated that this was unlikely. But many questions about the behavior and populations of these birds seemed worthy of investigation, in the hope that some leads might be found toward a solution of the problem.

While on Midway in January, we made an observation that has since had interesting consequences. In 1956, Knut Schmidt-Nielsen, one of the world's leading students of water and salt balance in desert animals, discovered that the nasal glands of Cormorants and Gulls excrete concentrated solutions of salt, sodium chloride, which drip from the tips of the beaks. This excretion probably allows these sea-birds to drink sea-water and then to get rid of the excess salt. This exciting work was done at The Mount Desert Island Biological Laboratory in Maine, where we also do research during the summers. Knowing this, we decided to see whether these Albatrosses could be found dripping from their beaks after returning from the sea. Before we had the opportunity to do much of this kind of observing, however, we found that Albatrosses that were being disturbed by an harassment campaign designed to rid certain areas near the airstrips were most actively losing salt by this route. It seemed quite possible that excitement or stress could activate the nasal glands. Perhaps this might be a method to discover something about inner excitement or stress in these otherwise apparently placid birds.

This led to our requesting, on our return to Penn State University, that some Albatrosses be shipped to us for further studies. After the request was made, we discovered that these species had not previously been kept in captivity for more than a few weeks. A check on the methods used showed that the birds had been given fresh water to drink, in the erroneous belief -- before Schmidt-Nielsen's work -- that sea-birds could not drink sea-water without damage, and had been fed squid or other invertebrates by force. The newer discoveries obviously suggested that the salt intake should be kept high. Further, a survey of the literature gave little reason to believe that squid is the chief food of these birds, in spite of acceptance of this by many writers. Squid contains relatively large amounts of magnesium and calcium, as compared with sodium ions. It seemed, therefore, that, under stress of captivity, the birds probably excreted excessive amounts of sodium chloride, which they could not replace by drinking sea-water, as in nature. Squid, with its low sodium content, not only failed to replace the lost salt, but actually aggravated the situation by supplying the depressant magnesium and calcium ions. So we decided to avoid force-feeding and all

other stressful situations as much as possible, to feed only fish, which has ion ratios more nearly like those of the birds, and to give the birds sea-water to drink. This was to be supplemented by the feeding of salt tablets. Every week, the salt sufficiency of the birds was tested by feeding a large amount of salt and observing for excretion of the excess by the nasal glands. The dripping of the concentrated salt solution from their beaks made a clear-cut sign that they were getting all the sodium they needed. By these methods, these birds were kept in captivity successfully, and we were able not only to study salt excretion, but, more important possibly, to learn much about the intimate behavior of the birds.

To be continued

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SIGHTING OF THE COLLARED THRUSH, GARRULAX ALBOGULARIS (GOULD)

By Richard E. Warner

At 4 P.M. on July 12, 1959, at Ulu Kukui, Lihue, Kauai, I was seated at the kitchen table idly watching white-eyes feeding on a papaya I had placed in the feeding tray. Suddenly my attention was directed to a movement under the golden shower tree which stood in the back part of the yard near a wooded gulch. As I watched I again perceived the movement of what appeared to be a large brownish bird. Its actions gave the impression of very large size, and I was immediately puzzled at what the creature in question could be. Female pheasant first came to mind, then was discarded because the bird was much too agile.

Then as I watched the bird flew down to the newly raked ground beneath the tree to capture an insect. Obviously thrush-like in many ways, it hopped vigorously around on stout legs, looking enormous to eyes which had been accustomed to thrushes no larger than the Chinese. Presently it flew back into the tree, dawdled there a short while, then flew into a panax hedge and into the neighbor's yard. I took the opportunity to sneak out to my cottage and gather up a pair of binoculars, then stole back to the house to locate my quarry once again.

As I watched from the seclusion of the bedroom window, I once again saw the bird moving about in the shrubbery, this time looking for insects amongst the dead leaves at the base of an ornamental banana plant. It would vigorously pull and shove the large parchment-like leaves about, peering in and under the foliage searching for tid-bits. It worked its way along the side of the neighbor's house, then flushed and flew into the hibiscus hedge between the houses as someone next door made a loud noise.

There seemed to be so much movement that the question arose, could there be a pair here? A moment later it was answered; a pair of large brown, thrush-like birds flew up into the lower bare branches of a cypress tree, hesitated momentarily, and then moved across the drive into another clump of ornamental shrubbery. They were wary, but no more so than the rather common Chinese thrush, and seemed less so than the not uncommon shama thrush. Never having seen the species before and quite unaware that another thrush was extant on Kauai, I debated the wisdom of collecting one for the museum but immediately gave the idea up as impossible. It was obviously a mated pair, and probably uncommon since it was the first of its kind I had seen in the area. For all I knew it was the only pair in the area, and with no idea of how large the total population was it seemed useless to consider taking one purely as a matter of record and for identification. So I contented myself with observing the behavior of the pair, and trying to fix carefully the description for later identification.

After about forty minutes of hopping about between the residences, the pair worked its way back to the wooded gulch behind the houses and disappeared. Several notes were uttered by the birds, but because both the Chinese and shama thrush were also in the area I was unable to determine for sure the nature of its song.

Both birds of the pair were large (one third larger than the Chinese thrush), heavy-bodied, similarly marked, and with a tail that drooped much the same as the Chinese thrush. There were, I believe, three white eye stripes, more white and pronounced than the Chinese thrush. The back was a dull brown, throat white, ending with a blackish band along the lower edge; breast rufous orange, belly light grey with a tinge of yellow. The outer tail coverts were tipped with a very light brown, a distinct demarkation of dark to light at the tips. There seemed to be prominent rictal bristles around the bill. Legs were stout and strong, used for vigorous hopping on the ground as well as scratching in the leaves to a lesser extent. Bill used often to poke and probe in piles of leaves and duff.

A check of Munro after the first excitement of seeing a new species wore off produced a very similar description for the collared thrush, Garrulax albogularis. At the moment it is my feeling that this species is probably much less abundant and more restricted in distribution, at least in this area, than the Chinese or shama thrush, as both of the others are observed rather commonly, the Chinese more than the shama. Perhaps the most distinguishing identifying characteristic of the collared thrush is its large robust size, in conformation something like the scrub jay of the south-western states.

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NOTES FROM KAUAI
By Charles Hanson

Our family spent an interesting ten days at Kokee on the island of Kauai in June, and I would like to take this opportunity to tell about the birds seen there.

The Ohia trees were in blossom so Amakihi and Apapane were having a wonderful time. It was a thrilling experience while preparing breakfast to look out the window and see Apapane flitting about.

I was interested in the large numbers of Chinese Thrush that could be heard singing throughout the day and was very happy to get an excellent view of two of them.

On one morning I got what I thought was my greatest thrill. I saw three birds which I identified as Akepa.

It was interesting to note that Cardinals and Mynahs were found at all elevation levels, even as high as 4000 feet.

I was very happy to be able to show my family a pair of Iiwi. We had an excellent view of them for 15 or 20 minutes. They were firsts for my family and the boys especially were very excited. We finally walked away and left them, something that I thought I would never do.

We had a wonderful time. I would like to list the birds seen, both at Kokee and in the lowlands. I will not list some which were duplicates.

KOKEE

Pueo - Owl
Elepaio
Amakihi
Anianiau
Creeper
Akepa
Apapane
Iiwi
Moa - Jungle fowl
Ring-necked Pheasant
Chinese Dove
Barred Dove
Japanese Tit
Mynah
White-eye
American Cardinal

LOWLANDS & SEASHORE

House Finch
White-tailed Tropic Bird
Coot
Golden Plover
California Quail
English Sparrow
Western Meadowlark
Red-tailed Tropic Bird
Red-footed Booby
Frigate Bird

FIELD NOTES:

Field Trip, June 28, 1959, Hapapa Trail.

Eighteen members and guests made the trip to a new trail for us, Hapapa. The approach led through the pineapple fields close to Schofield. The driest June in a number of years had left the powder-fine dirt of the approach roads inches thick, so that both cars and occupants were coated with a uniform red. Two cars, falling far behind to escape the clouds of dust, were lost for a time. May and Tom McGuire met us at the start of the trail, and went with us for a time, giving us, as always, information on plants and other items of interest.

An Elepaio put on a good exhibition for us before we had even entered the trail, which wound up a valley, crossing and recrossing the dry stream bed. Beautiful ferns were on every side, and unusually tall Kukui trees were overhead, providing welcome shade. Leiothrix, White-eyes, House Finch, and more Elepaio were seen. The high point of the trip was an Iiwi, whose loud, clear call was heard by all, and many of us had an excellent view of him, silhouetted against the sky, with the long curved beak clearly visible. Apapane were heard by those who went farthest along the trail.

As leader, I must confess that I had not scouted the trail in its entirety; Tom McGuire had kindly taken me part way, but I failed to come back to cover the whole trail. I would suggest that next time we should keep to the right on both the first and second branchings of the trail, which should lead us out of the gulch, and might give better birding, although it could hardly provide a more beautiful trail.

Grenville Hatch

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Field Trip, July 18, 1959, Popoia.

In spite of small difficulties, the fifty-nine grown-ups and children who gathered for a trip to Popoia had a most happy time. Everyone, most particularly the seven children, was keen to see the shearwaters. While we were waiting on the beach to make connections with Frank Gonsalves and his motor-boat, a young female frigate-bird skimmed by at a low level, bound for waters off Lanikai. Its not being engaged in bullying any other bird at the time allowed us to admire it fully.

A cool, sturdy trade-wind delayed our reaching the island in record time, for more speed would have meant more splash, and Mr. Gonsalves saved us from that. It took six trips to land the party.

Arrivals on the island spread out at once. The children were advised to stay on the path, which they did for a few moments! In no time, boasts were made of seeing eggs, in the open, unprotected, and seeing young far down in the coral "burrows." One bird was on the surface in a tangle of vegetation. The party was too scattered to eat together, or talk together, but there was much conversation in the groups, and many questions about the shearwaters. Those who had not been on the islet before marveled at the chance to see the birds at close view. The rest of us enjoyed seeing the birds again, but mourned the steady loss in numbers. Mrs. Gonsalves said gently that it was due mostly to children who swim over the quarter-mile from shore, or paddle on floats of some kind. Without instruction, guidance, or supervision, they unthinkingly destroy many eggs and young.

The moon was so bright that dark never came. But the adult birds swooped in from the sea at the normal time, at end of day. It was a new delight to see them veer over the water, often touching it with one wing, showing the aptness of their name: shearwater, then wheel swiftly over the land and light with precision. The characteristic low moaning began to be heard, but the volume of noise was by no means as great as in

former years.

By 8:30, a large group of birds, estimated to be between 75 to 100 in number, had congregated in the usual meeting ground on the seaward side of the island.

One Bulwer's petrel was spied, deep in a coral pocket. It had many callers.

The ride back to shore took less time, before a tail wind. Everyone enjoyed the beauty of the scene and the nearness to those lovely birds.

Margaret Titcomb

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It is with deep regret that we announce that our President, Joseph E. King, is being transferred to Washington, D.C., to assume a position as Assistant Chief, Branch of Commercial Fisheries, Fish and Wildlife Service. We congratulate him on this advancement in position, but his departure, scheduled for the middle of August, is a heavy blow to our Society. Joe has done a tremendous amount for us, more than most of us realize. We shall miss his level-headed guidance, his willingness to do an infinite number of tasks, and his knowledge of ornithology, which is far greater than most of us possess. Our aloha and best wishes go with Joe and his family, and our hearty thanks to Chuck Hanson, who again assumes the leadership.

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NEW MEMBERS:

We welcome the following new members to our Society:

C. Duane Carlsmith, 2999 Kalakaua Ave., Honolulu 15, Hawaii
Miss Barbara Davis, Koloa, Kauai

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AUGUST ACTIVITIES:

FIELD TRIPS: BLANCHE PEDLEY WILL LEAD BOTH TRIPS.

August 9 - To manoa Cliffs trail.
We will make the loop, emerging by the Hogback. Transportation will be arranged, so that we will not have to walk back to the cars.

August 23 - To Manoa Falls.
The elusive Dial Thrush has been reported from this area, and Shamas are usually heard, if not seen, here.

Meet at the Library of Hawaii at 7:00 a.m. for each trip.

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MEETING: August 17 - At the Honolulu Aquarium auditorium at 7:30 p.m.
Mr. Brian K. Mukai will talk on "Teaching Methods in Natural History," illustrating his talk with slides.

NOTICE

The Hawaii Audubon Society is "governed" by a Board of Trustees which consists of the five officers of the Society listed below. Ordinarily the Board meets once each month to plan hikes and meetings, hear reports on the activities of the various committees, and to discuss such special items as sales promotion of our new book "Hawaiian Birds," and current conservation problems.

It is possible that members of the Society may sometimes feel that they do not have sufficient opportunity to express their ideas about what the Society is doing, should do, or shouldn't do. Supposedly at the monthly meetings of the Society, which are open to the public, a member is free to rise and speak, but since more than half our audience is usually comprised of visitors we are all a little reticent to sound-off at such times. Our annual business meeting in December probably presents a better opportunity for open discussion of Society business, policies and activities -- or lack of activity.

Members are always welcome, however, to attend Board meetings if they will simply indicate their desire to do so. Your ideas and suggestions will always be welcomed and are definitely needed if we are to keep our Society alive and performing a useful function in the community.

Joseph E. King,
President.

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