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PROBLEMS OF ALBATROSSES AND MEN ON MIDWAY ISLANDS[1]

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

Fourth & Final Installment

It will be noted that we have not mentioned the complex of vocalizations produced by the birds during the noisy dance. As far as we can tell, the sounds heard during dancing are only intensive variants of the sounds just catalogued. Thus, one hears most consistently the territorial call, in intense form, occasionally the nest call and victory call. At the "climax", when the birds throw their heads into the air, the sky call is uttered, again intensified but fully recognizable. The sounds during dancing, except for the greatly increased occurrence of beak clappering, seem to be merely intensified forms of sounds usually used for identifying territories and nesting sites.

The precise function of the dance in the lives of these birds still remains to be determined. Earlier workers guessed that the members of the dancing pair were bisexual, but they had nothing to go on but their intuition or such secondary observations as they could make. We have been able to show, by measuring the heads and beaks of dancers, that the dancers are usually of opposite sex. If not, the dancing seldom continues long and usually ends in a fight. Actually, it seems fairly obvious that the male and female assume different roles in the dancing ritual. This, however, is as far as we dare go until we have had time to study the many reels of movies of dancing which we took for this purpose. This study will almost certainly not allow us to decide what the purpose of the dance is in the lives of the birds, but may enable us to distinguish the structure of the dance and the activities of males and females during dancing.

The dance of these birds is a most fascinating and provoking performance. For this alone, the average person on Midway, separated from ordinary forms of recreation, loves the birds. In the fall, everyone waits with eager expectation for their return. They make Midway distinctive. And the concern of the birds for their eggs and young also seem to most people on the island almost human. Yet there are those very few who, probably because of their fear of the hazard the birds create, or maybe for no rational reason at all, hate the birds. The kills were perpetrated by these individuals. It may be hard to believe that someone could kill an innocent bird of such striking size and beauty, but it happens. And it is hard to see how, with so many persons on the island, this can be stopped, when it is done at night.

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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).

What would probably surprise the friends of the birds, however, would be the statement that they too, with their petting and solicitous behavior, also are harassing the birds. True, the birds sit on the nest and seem to allow petting and handling. But the subtle signs of stress can be seen, if one looks for them -- dripping from the beak, trembling, shifting of position on the egg. Thus, the friends of the birds might be just as influential as their enemies in making Sand Island inhospitable for them.

The results of these harassments and the purposeful harassments tried by the Navy to try to rid certain areas of the birds, in the hope that local clearances would solve the problem, are now beginning to show. In 1957, according to Kenyon et al. (1958), there were 131,000 Laysan Albatrosses and 10,300 Black-footed Albatrosses on Sand Island. Our censuses this year show only about 35,000 Laysans and 6,000 Black-foots. In areas where molestation campaigns have been carried out, the drop in population was even more dramatic, down by a factor of ten. In short, it seems as if the Albatrosses, which for a time seemed able to weather any sort of storm in maintaining their ancestral breeding grounds, are giving way. We feel that, for their own good, this is desirable, and should be speeded up by humane methods.

This immediately raises the question of the effects of clearance of Sand Island, or possibly even both islands at Midway, on the world populations of these birds. Certainly, we do not want to so decimate the populations that extinction becomes possible. Assuming that ultimately all the Albatrosses on both islands at Midway were to leave, with no increase in populations on Laysan, Lisianski and Kure Islands, where the birds also breed, the total loss of numbers would be 16,000 Black-foots and 136,000 Laysans, based on censuses of Kenyon et al. (1958). These figures, though seemingly large, represent only 14% of the world total of Black-foots (117,000) and 21% of the total Laysans (650,000) indicated by these workers. This, in itself, therefore, would probably not result in extinction.

But do Laysan, Lisianski and Kure Islands now accommodate all they can? To decide this, we flew over these islands for an aerial survey. So that we would have some quantitative figures with which to judge what these islands might accommodate, we determined the average distance between nests and the average nest diameters in regions of highest density of natural populations on Eastern Island and parts of Sand Island. Assuming that the same conditions were furnished on the other islands, it seems reasonable that the birds would utilize the land for breeding just as effectively. The nests averaged about 40 inches in diameter to the outermost edge of the "moats" around them. The average distance between nest edges, under conditions maintained over large areas of high population density, was 24 inches. Thus the diameter of the average nesting territory, under these conditions, was 64 inches, an area of 25 square feet. Using this figure, one can compute thenumber of birds that the other islands could accommodate, if optimum conditions were furnished. For Laysan Island alone, discounting beaches and other unsuitable habitats for Laysan Albatrosses, about 1 million nests, or 2 million nesting birds, of this species could be supported, as well as an unknown number of non-nesting birds. Kenyon et al. (1958) found about 300,000 on Laysan Island. Thus, Laysan alone could more than absorb all the displaced Laysan Albatrosses from Midway, were conditions to be made suitable for them. Our estimate for Black-foots show that about 500,000 nesters could be accommodated on Laysan alone, while only 75,000 are there now. A similar situation exists on Lisianski and Kure Islands, both of which could house many more than they now do, if conditions were made optimum.

What are the conditions which seem to result in high populations of these birds? For the Laysans, the presence of grass and some overhead cover, such as ironwood trees and bushes, seems to be very suitable. It apparently is the presence of these environmental factors, along with the seeming greater fearlessness of the Laysans, that has resulted in their nesting in such large numbers among the houses on Sand Island. The overhead cover and bushes cannot be too heavy, however, or flight, particularly during landing and take-off, is interfered with. Thus, on Kure Island, the Scaevola is so thick that the birds must walk to the beaches to find space for running to become air-

borne. It would seem that planting of grasses and some trees on Laysan Island, still showing the effects of its denudation by rabbits in the 1920's, would be most beneficial. The same would help on Lisianski, which now has only a sparse covering of Scaevola, with a few lonely trees. On Kure, the destruction of some of the Scaevola, to produce landing strips for the birds would undoubtedly make it much more acceptable. If these habitat improvements were to be made, we feel that the other islands could absorb many times more Albatrosses than are now on Midway Islands as a whole. Thus the world populations would be unaffected, or even increased, while the movement of these birds away from Midway could be accomplished for the benefit of man and for the benefit of the birds themselves.

These must, of necessity, however, be long range and possibly prohibitively expensive plans. What of the present? Could any suggestions be made to help? Two discoveries made during our trip seem possibly worthy of trial -- again depending upon expense involved for possible results to be obtained.

We noted that the Albatrosses would not fly beneath overhanging flat objects, indeed they were quite terrified whenever some large flat object came toward them, whether on the ground or in the air. This led to the idea that perhaps some conspicuous apron hanging about 50 feet in the air would cause the birds to stop flying beneath it. Our trials with a small scale model confirmed this idea. Two poles were set up, so that the birds were flying between them in their flight pattern. After the birds flying between the poles were counted for a time, a piece of red cloth, 2 feet wide, was hoisted between the top of the poles. Immediately the flight pattern of the birds was changed so that they no longer flew beneath the cloth strip. This avoidance was maintained for the day during which the cloth was in place. It would thus seem that possibly the use of strips of cloth hung on wires between barrage balloons, or other such aerial supports, might be useful in blocking the flight paths. This could possibly be used to cause the birds to fly over the ocean instead of over the runways.

In testing various sounds with flying birds, we noted that, if the intensity were high enough, the birds could be made to turn away from the sound source. It mattered little what the sounds were, just as long as they were loud enough. So, loud sounds broadcast from speakers along the runways just before the planes land or take off might cause the birds to stay clear of the runways for the short time necessary for the planes to get away. But this too is expensive and requires careful planning. And both it and the hanging strips may only work for short times.

So, most of the practical problem remains unsolved. It looks very much as if it may ultimately solve itself, if present trends continue, simply because the birds are leaving Midway. This is a slow process, for life among these large birds is not conducted in a rush. It reminds us of our work with Starlings, in which a number of nights with continuous treatments are required before one sees results. In the case of the Albatrosses, the nights must be extended to years. Perhaps by using some humane means to drive the birds away before they settle and make nests, such as by using flat objects to drive them or by using wires near the ground electrically charged by a fence-charger, the process could be speeded up.

As with other problems which man has created for the birds by confronting them with his civilization, there is not likely to be any one-shot, all-time cure. Only patient studies on behavior, physiology, ecology, and many other facets of the lives of these birds can give information which will help to alleviate the problem. And we must always keep in mind that the solution of the Gooney Bird problem may not be the solution to the whole problem. For instance, the Noddy Terns, which compete with the Albatrosses for nesting space, seem to be definitely on the increase in areas where the Laysans are decreasing. Certainly we cannot, as long as we must maintain a base on Midway, live with the constant threat of loss of life and money because of these birds. But we

must all hope that some means can be found to solve the problem and keep the birds. It would surely be tragic were these Albatrosses to follow the Laysan Rail, Laysan Honey-Eater and the Miller Bird. How far can we ask the birds to go to avoid being caught in man's drive to "civilize" the world?

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INFORMATION ON CATTLE EGRET*, A BIRD NEW TO HAWAII

By Paul L. Breese

A new bird, the Cattle Egret, has been released in the Hawaiian Islands to help reduce the number of flies. This program is a joint effort on the part of the Hawaii Board of Agriculture and Forestry, various public spirited cattle ranchers, the Honolulu Zoo, and the Honolulu Hui Manu organization.

The Cattle Egret was selected by the Board of Agriculture and Forestry after careful research indicated that this bird would be of real value to the ranchers, (and other residents) in the battle to control house flies, horn flies, and other flies that damage hides and cause lower weight gains in cattle.

The Cattle Egret is a beautiful white bird with a long neck and long legs. Its body is about the size of a pigeon and is quite different in appearance from any other bird in the Islands. During the breeding season the neck and back become golden in color.

Cattle Egrets live throughout the tropical and subtropical parts of the world. They range over Africa and Asia, and in the last two decades have flown to South America and from there have spread to the United States.

Their highly beneficial feeding habits make them welcomed by people whenever they are found. Groups of these birds associate with cattle and horses (and in Africa even hippos and elephants) and catch flies and other insects that are attracted to these animals or are stirred up from the grass.

These birds walk along beside the cattle or even ride on their backs. They are always on the lookout for flies and when they see one on a cow's hide they dart the neck out and snap the insect up with such good aim that the animal is not even disturbed. These hard working birds feed almost constantly during the daytime and each one can consume many dozens of flies and other insects daily. The Honolulu Zoo has displayed some Cattle Egrets for several years in with the American Bison and some other large hoofed animals, and they spend most of their time searching for flies and catching any they find.

The Board of Agriculture and Forestry recently obtained several dozen young Cattle Egrets from the vicinity of Miami, Florida for this project. Funds were provided by Island ranchers to purchase some of these birds for release on their ranches. All birds released were marked with numbered leg bands. In addition the Honolulu Hui Manu donated a number to the Honolulu Zoo. The details of the birds released are on the attached chart.

The first Cattle Egrets began to appear in the Southeastern United States about eight years ago and they have now increased in numbers and spread throughout the South, and have even appeared in the New England States.

Several Mainland scientists have studied the effects these birds have had on flies as well as on native birds. In the encouraging words of Roger Tory Peterson, one of America's formost ornithologists, "The environment for this Cattle Egret, pastures and cattle, is man created. The bird is merely completing the picture. The Cattle Egret, beautiful and beneficial, is a fine addition to American avifauna."

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Agriculture and Forestry and Board of Health officials are optimistic that as this new bird increases, it will be of great help in controlling the flies around ranches and dairies. This will in turn be a significant step toward reducing the total fly problem.

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* Bubulcus ibis

ACCOUNT OF CATTLE EGRETS INTRODUCED TO THE HAWAIIAN ISLANDS

ISLANDS	LOCATION	SPONSORING AGENCY	NO. OF BIRDS	DATE RELEASED	TH FISH & GAME DIVISION BAND NUMBERS
Kauai	Near Lihue	Kipu Ranch	25	Jul 17, 1959	C1546-C1570 Inclusive
Hawaii	Mahukona, Kohala	Parker Ranch	20	Jul 30, 1959	C1584-C1603 Inclusive
Hawaii	Keeau	Shipman's Ranch	12	Jul 30, 1959	C1604-C1615 Inclusive
Maui	Old Puunene Dairy, Kahalui	HC&S Co and Maui Hui Manu	12	Jul 30, 1959	C1616-C1627 Inclusive
Molokai	Between Upper Kalae & Lower Kapali	Molokai Ranch Co and Kalae Ranch	12	Aug 19, 1959	C1628-C1639 Inclusive
Oahu	Kaaawa Valley	Kualoa Ranch	12	Jul 22, 1959	C1571-C1582 Inclusive
Oahu	Koko Head	Earl Thacker Ranch	12	Aug 24, 1959	C1640-C1651 Inclusive
Oahu	Honolulu Zoo	Honolulu Hui Manu	16	Being released gradually	Banding not completed

NOTE: Total number released on Ranches -- 105

Observations indicate that most of these birds are remaining in the vicinity where they were released.

September, 1959

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EXCERPTS FROM: OBSERVATIONS ON THE CATTLE EGRET IN COLOMBIA by F.C. Lehmann V. Condor, 61:265-269, 1959

"In a recent publication ... I mentioned that African Cattle Egrets (Bulbulcus ibis ibis) seemed to be established in the plateau of the Department of Cauca Valley in Colombia ...

"I found a beautiful nesting colony ... established in a very large and tall saman tree ... some 300 to 350 nests in different stages of development. Some were being built at the time, and the birds were very active carrying building material that consisted of sticks, twigs, and even large branches and small bushes. Certain of these objects were too bulky and heavy for their carriers and had to be dropped from the air when the birds could not reach the height of the nesting place. At other times the

birds had to circle to gain altitude to reach the nests with their load. There was feverish activity, and the noise and cackling of the birds was almost deafening. To judge from the birds' antics, many nests contained eggs, some of which were being tossed out by the pugnacious egrets that kept chasing each other from the nests. Many more nests were occupied by young birds, which ranged from recently hatched juveniles to those that were almost ready to leave the nest. There were also some young ones following their parents in short flights.

"The ground under the tree was literally covered with egg shells, twigs that were being re-used by birds that came down for them, dropped food, live young, and dead nestlings too young to survive the fall. And there were of course droppings and regurgitated pellets.

" ... I had the privilege (of visiting) another colony ... 30 miles south ... Both are located not more than 100 yards from farm houses where there is constant activity of all sorts, even including that of heavy agricultural machinery. The birds seem not to be much disturbed by the presence of people. Of course when one approaches the colony, some of the birds take to the air, but they return shortly afterward to their respective places.

"This second colony was located for the most part on two low, but large chiminango trees ... but it extended also to a tall, dead gualanday tree (Jacaranda) that had been killed by the birds and to a young saman ... Dr. Miller and I estimated that it contained about 500 nests ... the ranch owners ... showed us two big dead ceibas ... that were occupied by the birds in the beginning and which died because of the bird invasion ... "

Many more interesting observations are included, as to the bird's spread in Colombia "almost all the country", its favorite localities for nesting and feeding, some of the habits of the "voracious" young, and the cheering statement that "at about 7 p.m. all activity stops completely in the colony and no more noise or cackling is heard during the night-time hours." Nothing is said about its help to cattle-men, but a naturalist is speaking. Of two trees killed, supposedly, by the birds, one was cut down, the other left standing. It came out with new leaves "on its eastern side", to the surprise of the author.

The cattle egret has now spread over British Guiana and Surinam as well as Colombia, says the author. At one point he says that it could reach the Pacific.

Margaret Titcomb

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FIELD NOTES:

Field Trip, September 27, 1959, Shore-birding around the Island.

Enroute to the regular meeting place Sunday, September 27, a Plover was sighted amid the "early bird" Mynahs on McKinley Field, and three Brazilian Cardinals were perched on a downed Kiawe tree on the Ward Estate -- no doubt wondering why their home had been so wantonly destroyed.

A light rain was falling as two cars carrying six members and three visitors left the library, but the rain was soon left behind and a clearing day spelled good birding for the group.

Three Brazilian Cardinals were seen in a Navy Housing Area as we drove to East Loch for our first counting stop. A Black Crowned Night Heron crouched in characteristic pose on the beach waiting for an unwary fish. Also seen here were three Stilt and eight or ten Plover. We felt there were many more birds in the vicinity but the vegetation has become so dense that visibility on the surrounding beach area is fast becoming nil.

A Wandering Tattler and the American Cardinal were heard here but not seen.

After the early morning rains the air was fresh and clear and all birders were in a gay mood as we started on up the highway. Three Plover were seen on a newly leveled pineapple field near Wahiawa, and some fifteen Plover were seen on the Wheeler Field grounds. Mary Riggs predicted there should be one on the lawn of the Army Laundry and sure enough, there it was, sharing the area with a barred dove. Several in the party heard the skylark near here. One Plover was sighted on the highway on the Haleiwa side of Wahiawa.

The next stop, at the Haleiwa Pond, brought forth only the count of one Hawaiian Gallinule and one Coot. (More fishermen have been noted around the pond recently which may account in part for the absence of the birds.) Only one Plover was seen on the Haleiwa Park grounds.

A large bird seen flying over the highway enroute to Kahuku was counted as a possible Night Heron, though its flight seemed to be faster than that of the Heron.

After turning off the highway on to the road to the Kahuku Beach area one male Ringneck Pheasant appeared on the road ahead of us but flew off at the approach of our cars, and an American Cardinal was heard singing. The ponds and mud flats at Kahuku seemed to be covered with birds. It was possible to get an accurate count of only two of the species. A "first" for Hawaii Audubon members was the viewing of four Cattle Egrets which have so recently been released on the Island. Their beautiful white plumagestood out in sharp relief against the drab surroundings and we were able to study them for some time with the 'scope and binoculars before they flew to another area. It was noted, however, that they seemed to be eating off the ground and were not too close to the cattle in the vicinity. It is to be hoped that soon they will revert to their natural habits and be a great help to the cattlemen. (The fact of the Cattle Egrets being in this area was reported to the Bureau of Fish and Game, to be called to the attention of Game Wardens who will help keep track of them and try to educate the people as to their need here.)

A long-looked-for Bristle-Thighed Curlew was seen by visitor Paul Schaefer and this "made" the day as far as Charlie Hanson was concerned. But when the second Curlew was sighted, Charlie was on cloud nine and the day's count could not be more complete as far as he was concerned.

The lovely picture of eighteen ducks in flight was a memorable one, and there were five on one pond and four on another while these eighteen were in the air. All were thought to be Shovelers.

After the excitement of seeing the Egrets and the Curlews, it was rather an anti-climax to settle down to counting the many other species in the area. However, when large flocks of Turnstone wheeled into the air showing the beautiful pattern of their wings, the "ohs" and "ahs" heard from all birders proved that birding definitely has its compensations. It was estimated that there were some 300 Turnstones, 10 or 12 Wandering Tattlers, about 50 Stilts, 40 Coots, 35 Sanderlings and innumerable Plover in the area. Many Doves, both Lace-necked and Barred were also seen, but no actual count was made of them.

We chose a sandy hillock overlooking the beach for our luncheon area and all of us enjoyed the beauty of the waves as we talked over our morning's thrilling sights. One lone Frigate Bird soared overhead adding to the beauty of our surroundings.

After lunch we retraced our steps to the area where the Curlews had been seen but unfortunately they were not to be seen again. However, we did see the Egrets from time to time. Also at this time two Hawaiian Gallinules were seen in one of the drainage canals.

It was noted that many of the Turnstone and the Curlew seemed tired and sat quite still as though resting from their long flight. Although at times the Turnstones would flush they did not fly far before landing and resuming their feeding, so it was felt that perhaps they had only recently arrived at the area. We left here reluctantly and

drove to Kahana Bay where we saw 16 Coots. What fun they were having scooting across the water in their characteristic way or splashily bathing. One wonders why birds who live on the water feel the need of bathing!

A coffee break was called as we neared Tiki Tops restaurant in Kaneohe and afterwards we drove to the Kapaa Quarry Road to look for some ducks that had been reported as being seen there. We could not even find the pond, but the trip was not in vain, for as we drove back along the road the Chinese Thrush were having a concert and how beautiful it was! We stopped the cars and listened for some time and Paul Schaefer went into the grove and was fortunate in seeing one. Also seen and heard here were American and Brazilian Cardinals, and the Leiothrix.

Those of us in one car decided that since we were out we might as well try for the Shama Thrush so we covered the Old Pali roads but alas, no Shama's beautiful song did we hear. One Plover was seen at the Reservoir No. 1 however and five Night Herons were seen on the Nuuanu Reservoir.

All in all, we felt that it had been a most satisfactory field trip, right down to the three or four tiny baby mongooses seen playing along the road in the Kahuku area.

Elizabeth Stephenson

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NUMENIUS TAHITIENSIS

As reported elsewhere in this issue of the Elepaio, the members on the bird walk of Sunday, September 27, were given the rare privilege of seeing the Bristle-thighed Curlew or the Kioea, as the Hawaiians call it.

I had been looking for this bird for all of the 5 years that I had been in the Islands. I had spent many hours on bird walks previously trying to spot the Curlew, but had been unsuccessful. In fact it was a joke among my "fine-feathered" Audubon friends that I tried to make Curlews out of any and every shore bird that I saw.

Well, you can imagine my untold excitement when there it was. It seemed as if any thing else would be anti-climax. But then we saw it fly close by and heard it give its distinctive call. I could hardly restrain myself.

The Bristle-thighed Curlew is a large shore bird about 17 inches long with a distinctive, long (6"), downcurved bill.

The bird is generally buff-brown in coloration with the head having a few white stripes running the length of it, with a white stripe running through each eye.

As the bird flies there is a distinct cinnamon-buff patch on the upper tail.

The Bristle-thighed Curlew nests in Alaska. The first nest was found there in the 1940's by Arthur A. Allen. In the winter the birds migrate to the Hawaiian Islands and south to Fiji, Samoa and the Marquesas.

Charles Hanson

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A SPECIAL CHRISTMAS OFFER TO HAWAII AUDUBON SOCIETY MEMBERS ONLY

From Nov. 1 to Dec. 15, copies of HAWAIIAN BIRDS may be purchased for Christmas gift for 75¢ each.

NEW MEMBERS:

We welcome the following new members to our Society:

Mrs. J. D. Babcock
3228 Oahu Ave., Honolulu 14, Hawaii

Mr. Bert E. Tudor
130 Ohana St., Kailua, Oahu, Hawaii

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NOVEMBER ACTIVITIES:

FIELD TRIPS: CHARLES HANSON WILL LEAD BOTH TRIPS.

November 8 - Kalena Trail, in the Waianae Range back of Schofield.

November 22 - Shore bird trip.

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

MEETINGS: Board - The Board of Trustees holds its regular meeting on the second Monday, November 9, at the Hawaiian Mission Academy, 1415 Makiki St., at 7:30 p.m. Members are always welcome.

General - November 16, at the Honolulu Aquarium auditorium at 7:30 p.m.

Dr. Horace Clay will tell us about "A Horticulturist's Visit to Kure Island."

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