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SEABIRD OBSERVATIONS ALONG A TRANSECT

From Hawaii to Fanning Island

28 December 1969 - 2 January 1970

By Donald C. Gordon, Jr. *

This winter I had the pleasure of participating in an expedition to Fanning Island. Fanning, one of the Line Islands, is an atoll located about 1200 miles south of Honolulu ($30^{\circ} 50'N$, $159^{\circ} 20'W$). The expedition was undertaken by scientists from several departments of the University of Hawaii and sponsored by the National Science Foundation. Its purpose was to study the general marine environment of Fanning Island with the thought of possibly setting up a permanent research laboratory for tropical marine biological and oceanographic research.

Our cruise from Honolulu to Fanning Island on the R.V. Mahi afforded an excellent opportunity to observe seabirds. This brief report summarizes my observations during the five-day cruise down. Since I flew back, observations were not made on the return voyage. Being a novice bird watcher and a relative newcomer to the Pacific area, my observations are not very detailed and may contain some inaccurate identifications. Nevertheless, I think they are worth reporting since few people have the opportunity of making such observations. They do serve as a guide as to what seabirds one can expect to see when traversing this part of the Pacific Ocean. In the following observations, the locations in parentheses following each date roughly indicate the area covered during the daylight hours.

28 December (Honolulu to $20^{\circ}N$)

We departed Honolulu at 0800, but my observations did not begin until about noon when we were well clear of Oahu. Black-footed albatrosses (Diomedea nigripes) were with us all afternoon. At most times, several were visible at once, gliding back and forth across the ship's wake. We were also accompanied by a large number (10-15) of pomarine jaegers (Stercorarius pomarinus). These were most abundant near dusk. During the afternoon, several boobies were seen at a great distance. Their white bodies and black wing tips indicated that they were either blue-faced (Sula dactylatra) or red-footed (Sula sula) boobies, most likely the latter. Just at dusk, several grey petrels were seen. Since their tails could not be seen clearly, they could have been either Bulwer petrels (Bulweria bulwerii) or sooty storm petrels (Oceanodroma markhami).

29 December (18° to $16^{\circ}N$)

The only sightings during the entire day were several solitary boobies, one definitely blue-faced and the others blue-faced or red-footed, and one black-footed albatross which followed us most of the afternoon. The sparcity of birds this day

* Assistant Professor of Oceanography, Department of Oceanography, University of Hawaii, Honolulu, Hawaii.

illustrates the biological barrenness of this part of the Pacific. The large number of birds with us the day before, particularly the jaegers, appeared to have left the ship during the night to return to the more productive waters around the Hawaiian Islands.

30 December (14° to 12°N)

Just after dawn, a brown booby (*Sula leucogaster*) was seen and a few minutes later a blue-footed booby. About 0800, two brown boobies were seen feeding on flying fish quite near the ship. In mid-morning, a tropicbird (*Phaethon* sp.) was seen at a distance diving for fish. Several solitary brown boobies were spotted during the afternoon. The most remarkable sighting of the entire cruise came just before sunset when a great frigatebird (*Fregata minor*) was spotted soaring high overhead watching a nearby brown booby feeding. This great frigatebird was about 400 miles from the nearest land (Palmyra Island) which is quite a distance for a bird which normally does not fly far from home. Just at sunset, a Harcourt storm petrel (*Oceanodroma castro*) flew by the ship. The increased number of birds over the previous day was matched by an expected increase in flying fish abundance, indicating that the ocean in this region is more productive than it is a few hundred miles north.

31 December (10° to 8°N)

During the morning, an unidentified shearwater (*Puffinus* sp.), two Bulwer petrels, and several terns were spotted. The terns, apparently sooty terns (*Sterna fuscata*), were the first seen since leaving Oahu. Several solitary shearwaters, three sooty terns and a Bulwer petrel were seen during the afternoon. At 1600, a large flock (20-30) of feeding sooty terns passed by the ship.

1 January 1970 (6° to just north of Fanning Island)

The nearness of Fanning Island to the south and of Palmyra and Washington Islands to the west was quite evident by the numbers of birds observed during day. As expected, the frequency of sightings increased as we neared Fanning. During the morning, while steaming through the tropical convergence, four blue-footed boobies, a shearwater, a fairy tern (*Gygis alba*), and a sooty tern were spotted. During the afternoon, many more of these plus red-footed boobies, Bulwer petrels and sooty storm petrels were seen.

Several interesting generalizations can be made from these observations of seabirds between Hawaii and Fanning Island. Except for the section between 18° and 16°N, where birds were scarce, boobies and petrels were fairly evenly distributed along the transect. However, jaegers and albatrosses were seen only near the Hawaiian Islands while terns were seen only in the vicinity of the Line Islands.

COLOR TAGGED AND DYED GULLS IN WESTERN NORTH AMERICA

All beachcombers, bird-watchers, fishermen, and those who just like to look at seacoasts, harbors, and bay shores, are asked to be on the watch for "seagulls" wearing bright colored plastic tags on the back or on one wing, or any that have a prominent amount of red, yellow, green, blue or violet dye on the ordinarily white or light brown parts of the plumage. All these fancy "dressings" are just different ways of marking the individual gull so that records of its movements can be obtained, or (for those with dyed plumage) at least records of where birds from certain populations travel.

Several study projects are under way in the western U.S. on gull movements. One species (California Gull) is being marked on and near their nesting areas in Wyoming by Dr. Kenneth L. Diem of the University of Wyoming. He is using circular bright orange plastic-coated nylon tags attached to the leading part of either the right or left wing near the body (which may appear to be almost on the bird's back or "shoulder" when it is not flying). Each tag bears a single large numeral

(0 through 9) and a smaller "symbol" either to left or right of the number. Any of the birds on which the whole symbol and numeral can be read with certainty can be traced to its original place of capture as well as to locations of subsequent observations that have come in to Dr. Diem. California Gulls annually undertake a widespread migration, spending the fall, winter and spring largely in central and southern California. A number of these Wyoming marked birds have been spotted at garbage dumps, harbors, school yards, and park lakes in the San Francisco Bay Area.

In the San Francisco Bay Region itself Dr. Howard Cogswell, Professor of Biology at California State College, Hayward, with the help of a crew of assistants, is using rectangular tags of bright orange, light blue, light green or bright pink to mark gulls of five species (Glaucous-winged, Western, Herring, California, and Ring-billed). These tags are of the same plastic coated nylon material as the wing tags described above, but are larger and are placed on the back of the bird and attached around the body with strips of the same material attached so that the bird can fly without difficulty. There are one or two black numerals on each tag, which can usually be read only when the bird is flying or when it lifts its wings to preen, since in a gull at complete rest part of the tag is often covered by the wings.

Dr. Cogswell's project includes the whole Bay Region and is supported by a grant from the U.S. Public Health Service in relation to birds and solid waste disposal. Most of the birds are marked and released close to one of the land fill sites where garbage attracts them to feed. It is already evident that many of the gulls do not stay at any one location, however, so the marked ones should be looked for anywhere there are gatherings of these birds. Reports of all such tagged birds are valuable data for the better understanding of the seasons and extent of these movements and if there are observations from distant places it will add to knowledge of the migrations of gulls. If the number as well as the color of the tag can be seen, it will identify the individual bird; but all reports even of tagged birds (when the number is not readable) will help, since the color of the tag indicates the general part of the bay in which the original tagging was done. The same applies to the birds that have dyed plumage, with or without a back tag.

In addition, there is a project on the Farallon Islands of dyeing the plumage of Western Gulls (the only species breeding in the San Francisco Bay Region). This is being carried out by Point Reyes Bird Observatory personnel in cooperation with the U.S. Bureau of Sport Fisheries and Wildlife.

Any records of observations of gulls with any of these sorts of markings should be sent to: Dr. Howard L. Cogswell, Dept. of Biological Science, California State College, Hayward, Calif. 94542. If your observation pertains to one of the birds from Wyoming or the Farallons, Dr. Cogswell will forward your report to the appropriate person.

Be sure to include date and place of the observation (local spot as well as town or general area), name and address of the observer, and as much of the information about the tag or dye as you can. Observers do not need to know the species of gull nor what particular one of the several age categories it is in. If, however, its bill and feet colors and plumage could be described in a general way (mottled dark and light brown; gray back but brownish wings and tail; mostly gray and white, except for black wing tips; etc.) it will be an extra help. If you do know the species of gull, of course mention it; but no two birds have the same number on a back tag of the same color.

BOOK REVIEW by Wayne C. Gagne, Entomology Department, Bishop Museum, Honolulu, Hawaii

Thomas Whiteside. 1970. Defoliation: What are our herbicides doing to us?
Ballantine/Friends of the Earth. xvii + 168 pp, 95 cents, paperback.

Following on the heels of Ballantine/Friends of the Earth's "Environmental Handbook" prepared for Earth Day, and treating a subject of very topical interest, Whiteside's book may well become obsolete even before it gets a wide reading. The book deals with the horrors associated particularly with the herbicide 2,4,5-T,

now coming under increasing scrutiny by the Federal Government.

After a 43 page analysis of the human implications of defoliation with 2,4,5-T in Viet Nam, its domestic uses and its teratogenic (fetus-deforming properties) and carcinogenic effects in rats, mice and birds, there follows a hodgepodge of chapters. Among them are treated the veil of secrecy associated with the lab testing of its possible effects on man, the pros and cons concerning its use here and abroad, the controversy over its use as an agent in warfare; all of these giving just a little more insight into the labyrinthine channels which develop when a problem such as this enmeshes the government between an aroused public, agriculture and the military.

The direct implications for bird life are found in statements made on pages 38 and 46; also of relevance here are the toxic properties of dioxin, a contaminant formed in the synthesis of 2,4,5-T which is discussed on pages 35ff. On page 38 there appears the following:

As a consequence of studies that have been made of the deaths of millions of young chicks in this country after the chicks had eaten certain kinds of chicken feed, government scientists are now seriously speculating on the possibility that the deaths were at the end of a chain that began with the spraying of corn crops with 2,4,5-T. The hypothesis is that residues of dioxin present in the 2,4,5-T remained in the harvested corn and were concentrated into certain by-products that were then sold to manufacturers of chicken feed, and that the dioxin became absorbed into the systems of the young chicks. One particularly disquieting sign of the potential of the dioxin material is the fact that the bio-assays made on chick embryos in another study revealed that all the embryos were killed by one twenty-millionth of a gram of dioxin per egg.

And on page 46 there appears the following:

In more recent studies of the dioxin contaminant, conducted by Dr. Jacqueline Verrett, of the Food and Drug Administration (who earlier was responsible for revealing the carcinogenicity of cyclamates), extensive teratogenic, or fetus-deforming, effects were discovered in chick embryos when the dioxin.... was present at concentrations of little more than a trillionth of a gram per gram of the egg. The magnitude of this effect on chick embryos may be gathered from the fact that, according to Dr. Verrett's studies, the dioxin appears to be a million times as potent a fetus-deforming agent as the notorious teratogen thalidomide was found to be in tests on chicks.

If the herbicides bode ill for man and beast, let's hope it doesn't take two decades to do something about curtailing their use, as it has taken with DDT.

The book ends with a special section, the "What You Can Do Department". This consists of a number of detachable coupons of letters to persons who could be instrumental in stopping what appears to be another case of "biocide". The book might also have been titled "Since 'Since Silent Spring'" for it is an admirable attempt to keep the public up to date on the rapidly developing field of Environmental Toxicology.

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PESTICIDES & BIRDS: A SHORT GUIDE TO THE RECENT LITERATURE

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Wayne C. Gagne

DDT -- the WRONG insecticide

What's Wrong with DDT?

It remains toxic in the environment for at least 10 years and spreads by wind and water around the globe.

It is harmful to wildlife, killing some animals outright and inhibiting reproduction in others.

It affects our food supply; our fisheries are particularly vulnerable.

While the amount of DDT now in our bodies is small and has not yet proved harmful, scientists fear possible long range effects.

What Are the Alternatives?

Numerous other insecticides that do the job and become harmless to the environment within a few weeks.

Non-chemical measures such as water level control to eliminate breeding areas, local destruction of diseased trees, introduction of natural insect eaters.

Then Why Is DDT Still Used?

It's inexpensive--large volume production, a result of its World War II fame, keeps its cost low.

Conclusive proof of its danger is recent--only now, after 10 years of research have scientists amassed irrefutable evidence.

What Can You Do?

Use only such sprays as pyrethrum, rotenone, nicotine sulfate, methoxychlor, Sevin, malathion, diazinon, dibrom, guthion, Dursban, naled or Abate, and these with extreme caution--check the ingredients on the label.

Never use DDT, aldrin, dieldrin, endrin, or heptachlor; only qualified professionals should use chlordane, BHC, endosulfan or toxaphene for special limited uses.

Urge your neighbors, local tree sprayers and government officials to be guided by the above lists.

Make a tax-deductible gift to the National Audubon Society's Rachel Carson Memorial Fund, founded to finance our work in this area.

BAN DDT

The world is at last awakening to the alarm Rachel Carson sounded seven years ago. Sweden and Denmark have outlawed DDT. Here, Arizona and Michigan and a number of towns, mosquito control commissions and other governmental agencies have banned it; many more have restricted its use and still more are considering doing so. Public opinion against DDT is rising.

The National Audubon Society, a leader in this fight from the start, has launched an all-out campaign to finish the job. Our story is simply this: DDT is harming the environment we live in. There are other far less dangerous ways of controlling insects. Therefore DDT should be banned throughout the land, and banned from export.

We welcome your support in this campaign.

National Audubon Society, 1130 Fifth Avenue, New York, New York 10028.

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HONOLULU STAR-BULLETIN, 5 March 1970, page D-9: Pesticide Found in Isle Hawk Egg
Residues of a pesticide and other foreign substances were found in the un-hatched egg of a rare Hawaiian bird, the 'Io, biologist Winston Banko said today.

Banko is studying Hawaiian birds, with special attention to endangered species. ...He said he has been notified by the Patuxent Wildlife Research Center in Laurel, Maryland; that the 'Io egg, which he sent last summer for analysis after it failed to hatch, contained traces of DDE, a form of DDT, and PCB, a substance used in certain paints and plastics.

The egg was discovered by George Schattauer, manager of Kona Properties, in an 'Io nest in the Honolalino area of South Kona. He notified Banko and they kept a check on it during the normal incubation period.

When it failed to hatch, Banko sent it to the center's laboratory for analysis as a part of a continuing program of research into influences on wildlife.

Banko said the implications of the discovery are not yet clear, including whether the chemical prevented hatching. The amounts of the man-made substances in the egg were considerably smaller than some found in Mainland wildlife samples, he said.

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Any comments? Please share your experiences with other members by writing to Kojima, 725-A 8th Avenue, Honolulu, Hawaii 96816.

BE A BIT BIRDIE! *
By Henry J. Yuen

Forget about the high, inaccessible reaches and the hopeful flash of 'I'iwi or 'O'o. There is spectacular birdwatching on Oahu, almost in our own backyard. Out Kalaniana'ole Highway, to be exact. The drive from Kuliouou to Makapuu is already a scenic drive of weathered cliffs, volcanic or ash cones and the ever-pounding surf from the Molokai Channel. But pause long enough and you will also see a diversity of wildlife--especially birds--feeding in estuaries and pausing in craters of tuff cones or swooping over off-shore islands.

Begin at Paiko Lagoon, a refuge for wading and shorebirds outside Kuliouou. Birds that are native to Hawaii or migrating from Alaska and the West Coast are easily observed, particularly during winter months.

Did it ever occur to you that our islands are part of that vague and mysterious "south" where birds winter after the grueling 2,000-mile flight over the Pacific? Here are a few of our guests of the past winter: The Sanderling is a small, gray-white shorebird that runs up and down the surf, following the waves out to feed and running ahead of them to keep dry. From the birds' way of feeding, the Hawaiians named them HUNAKAI, or "the foam of the waves."

Ruddy Turnstones are aptly named as they really do turn stones over with their beaks in search of food. Readily recognized to the practiced birdwatcher are the Wandering Tattler and the Golden Plover, a long-legged bird also found on large lawns feeding on insects. These are two species that visit Hawaii.

In contrast to migratory birds there are those found here who don't travel. They include the Black-crowned Night Heron, a bird seen readily during the day. He appears hunch-backed as he keeps his neck folded in while he waits for food to come along. Cranes, on the other hand, appear to have long necks outstretched at all times. There are no wild or uncaged cranes in Hawaii.

The Black-necked Stilt is endemic and, as the name implies, he is long-legged and his back is black. But black neck and long legs are not as noteworthy as his unforgettable characteristic--pink legs, as if he wore long pink tights. So, he is easy to spot.

Occasionally a bird, rare to Hawaii, makes its way to the islands by accident or with the tail winds of a storm. These are exciting to birdwatchers as they are not regular visitors to our shores. Some time ago, just a few days before the Hawaii Audubon Society's annual bird count, someone spotted either a Bar-tailed Godwit or a Long-billed Dowitcher.

But on to Koko Head!

The next stop is Koko Head an extinct ash or tuff cone but, among birdwatchers, it is unusual because of its small but rare Fairy Tern colony. These small seabirds

were first observed nesting at Koko Head around 1961. Exquisite in form and snowy white, these fairy-like birds have rare aeronautical skills: they can fly up, hover, float backward. In the summer of 1968, seven or eight adults were recorded, but the next year only three remained. Building no nests, Fairy Terns lay their single egg in tree forks or hollows in branches or even on rocks. The pair observed on Koko Head re-nested in the same spot, some 60 feet above ground, the next year.

When alarmed, Fairy Terns fly straight up, giving their alarm notes as they rise. Seabirds are not as musical as land-based passerines. Some grunt and others moan. The cry of a Fairy Tern is almost electronic. It resembles the "plunk" of the lowest string on a guitar or, better yet, a Jew's harp, and at the same instant a high pitched squeak. They repeat this cry until the interloper disappears--in the meantime inspecting you as they hover with wings outstretched over one spot, with 15 to 20 knot winds supporting them.

Continuing on, Sandy Beach may be worth a stop to look for boobies diving for fish. Terns may be seen flying low over the water on their way to Manana. Manana (Rabbit Island) is a protected refuge for nesting seabirds. You must have permission from the fish and game division to land there.

There are no trees except a few coconut palms and all the birds lay their eggs on the ground. Before landing one cannot possibly imagine all the noise the birds make--nor their fishy smell. Birds nesting there include the Wedge-tailed Shearwater, of those species which moan, and Bulwer Petrel, both readily seen in the evenings as they return from fishing.

All other off-shore islands along the windward side are bird refuges, too, particularly for the shearwaters. It is difficult to realize that these birds nest there. Because of their breeding habits they hide their nests underground in burrows, many of which they dig themselves.

Unlike shearwaters nesting in burrows, Red-footed Boobies nest in KOA trees, or more descriptively, bushes that seem too small to support the large birds; some two feet long when flying. Their habitat is Ulupau Head or Mokapu peninsula, associated with Frigatebirds which pirate on the boobies for food. Frigatebirds, however, roost on Hoku Manu, two islands three-quarters of a mile offshore, on the leeward side. Sharing Hoku Manu with them but actually nesting here are Gray-backed Terns, Hawaiian Noddies, Masked Boobies and Brown Boobies, Sooty Terns and Noddy Terns nest here as well as on Manana. The latter are the birds responsible for the incessant noise there.

Inland, still within the Kaneohe Marine Air Station, there are fish ponds to be found. These are the habitats of the Hawaiian or White-capped Noddy. The other noddy mentioned nesting on Manana is the Brown Noddy, found in the open seas instead of in inland and sheltered waters. Here are also the haunts of night herons, stilts, and plovers.

All these birds were sighted while merely driving along Kalaniana'ole Highway from Kuliouou to Hikapuu and continuing on to Kaneohe Marine Air Station, Mokapu Peninsula, along the coast, looking toward offshore islands where they are seen. So keep a sharp eye when next in these areas.

* Reprinted from the April 1970 issue of HONOLULU by special permission.

Editor's Note: Henry Yuen, a 19-year old biology major in his junior year at the University of Hawaii, has made the front cover of HONOLULU, a topical tropical magazine. If you have not yet seen the April 1970 issue, get a copy, for not only the stilts on the cover but also the colored pictures of brown noddy, sooty tern, stilt, red-footed booby and especially the fairy tern on pages 34 and 35 are most attractive. Congratulations! Henry, keep up your good work.

Field Trip to Ulupau Head, 12 April 1970:

Our annual excursion on April 12 to observe the red-footed booby colony on Ulupau Head brought out the largest turnout of the year, over fifty members and visitors.

The weather was fine, though somewhat windy, and we had a fine day. We were able to count over 500 nests in the colony, which seems to be expanding. Most nests observed contained one egg as expected, but one held two. As has been observed before, the sitting boobies are not easily dislodged and one can approach to touching distance quite easily if one is adept at dodging a disgorgement of partially digested fish. When approached, the sitting birds continually indulge in extensions of the bill toward the one approaching (agressive behavior?) and then follow this extension by dipping the bill almost rhythmically to the right and then to the left down to the nest level usually touching the sticks of the nest (anxiety, displacement?).

There were many more boobies nesting on Moku Manu as well as thousands of sooty terns and hundreds of great frigatebirds. At one time over forty frigatebirds were circling over us. Some of the observers saw turtles surfacing in the water of the bay below us.

The makai pond was almost dry and held only a dozen or so golden plover, almos t all in breeding plumage, but the adjoining pond on the Kaneohe side of the base road held about forty stilt, a half dozen black-crowned night heron, and two pairs of white-capped noddies (black or Hawaiian) fed and bathed at extremely close range for us. A wandering tattler perched on a rock for our scope at about forty yards.

Doves, cardinals, ricebirds, sparrows and one mockingbird completed our observations for the day.

Charles G. Kaigler

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Editor's Note: Any comments on the behavior patterns? Please share your experiences and ideas with other members by writing to Kojima, 725-A 8th Avenue, Honolulu 96816.

Field Notes from David L. Olsen: Cackling Goose on Oahu

During the first week of June 1969 several golfers reported seeing a large duck or goose on the greens at Kaneohe Marine Corps Air Station Golf Course. The observation was reported to personnel at the Hawaii Division of Fish and Game. Mr. Ralph Sito spent an afternoon looking for the bird, but he was unable to find it.

Additional reports of sightings of this unusual bird were received by both state and federal wildlife authorities. On June 27, I visited the golf course and noted the bird feeding on the grass near the 7th green. The bird was a small Canada goose, not much larger than the mallard duck. The darker plumage pattern together with the extremely small bill immediately suggested the bird was a cackling goose.

I studied the bird for 15 minutes with the aid of 6X30 binoculars. The bird was quite tame and I was able to approach within 30 feet. The plumage on the bird appeared to be excessively worn and it never did fly.

On June 30, I again visited the Marine Corps Air Station and this time took several photographs of the bird with a 200mm telephoto lens. A photograph and subsequent news release was published in the July 2 edition of the Pali Press.

LETTERS: From Cmdr J. Richard Gauthey, Charleston, S.C., 30 November 1969:

...We're enjoying South Carolina--have a house near woods and marsh where there are many birds (and unfortunately, many poisonous snakes). Painted Buntings are fairly common and Purple Gallinules occur--both beautiful birds. The whole family, however, is very eager to get back to Hawaii.

From Mr. & Mrs. Ira Wissler, Castle Dale, Utah, 3 December 1969:

...The birds are exciting. The Broad-tailed Hummingbird has not been educated to sugar feeders. I put mine out but Mr. and Mrs. Hummingbird just looked it over and went on their merry way. Maybe next year. The great flight of White-faced Ibis stopped here in the valley for five days eating and resting in the Spring. We had a Great Horned Owl sit on a post and peek in our bedroom window at dawn. A Screech

Owl caught bugs over the bird trays at night. One can see the Bald and Golden Eagles cleaning the highways most any time. The five Bohemian Waxwings that ate apples at the bird trays furnished many hours of pleasure for two and a half months. The more than fifty species of birds around us are all exciting.

The desert and mountain flowers were dainty and demanding. The fall colors were a thrill beyond description....I stood watching a sunset ever changing colors against the gold of the cottonwood trees this evening and breathed a prayer of Thanksgiving for the beauty all around us,...

From Miriam N. Davis, Kaunakakai, Molokai, 10 December 1969:

In October four white-fronted geese were seen by Noah Pekelo and myself at Kainalu. One was shot by a boy (who was not punished in any way--why?). The other three are still in the water front pasture and pond on the Dunbar property.

Yesterday I counted five pintail ducks feeding in the pond in the same pasture.

The Brazilian cardinals seem to be working their way east. I have seen a pair in the mangrove trees at the edge of the Pukoo fish pond.

From Howard L. Cogswell, Hayward, California, 29 December 1969:

...Covered Kilauea to Kipuka Puula back to Hilo and across Saddle Road to dinner at Kailua-Kona. 'Apapane singing and displaying by hundreds in all 'ohi'a areas. Also saw 'Amakihi and at the Lava Tubes 2 Creepers plus 1 'Io very close at 3000' on the road to the Volcano, and several 'I'iwi. It rained most of the time.

From Netty Hansen, Kalaheo, Kauai, 26 December 1969:

...We have a pair of meadowlarks in our pasture which are a joy to see. Also several mockingbirds, pheasants, thrush, and an occasional owl.

So far our land is untouched, but on the next ridge there are several subdivisions being planned. How sad!...

From Billie Pyle, Chevy Chase, Maryland, 18 January 1970:

...On December 27 (a very bitter day) Bob went out on the Christmas count for D.C. He left in the afternoon with Peter for Cape Charles, Virginia, (south tip of Eastern Shore) for a count there on December 28. Then up to Chincoteague for a count there on December 29. He really loved it and it was so cold!! I did my part just keeping bird seed on the feeders. There was a foot of snow on the ground.

We are getting a nice flock of evening grosbeak, a few purple finches, goldfinches and many of the regulars.

The past weekend...I went to New York....The Bronx Zoo has a very nicely displayed bird house and a new aquatic bird house with the most wonderful bird habitat settings. A beach with even a tide! A marsh with all sorts of plants and also a swamp and a river scene. In the regular bird house I saw a black-throated cardinal (Paroaria gularis) which reminded me very much of the one I saw in Moanalua Gardens....

From Mr. & Mrs. Joseph E. McNett, Webster, New York, 8 February 1970:

...Our winter with the birds has not been too unusual. We always enjoy the bright red of the Cardinals as they feed against the snow and we usually have a flock of 24 or more of these lovely birds. They are resident birds and have been able to withstand the cold and snow, because so many people maintain feeding stations in the northern states. The lovely blue of the Jays makes a beautiful contrast and the lively Chickadees and Titmice keep things cheery. Our busy Nuthatches feed steadily on very cold days and the quiet little Downy and its larger relative the Hairy Woodpecker are constantly at our suet feeders. Numbers of Goldfinches feed at our sanctuary irregularly and of course the ground feeding birds such as Junco and Tree Sparrow find us when they need food. A flock of Mourning Doves and some Ring-necked Pheasants usually frequent our ground feeding areas. Also we have had many days when no birds could come in as we have a predator which has really been a continuous visitor. We think it is a Sparrow Hawk, but we have not seen it in action too often. Of course, we realize it must have food too, but we are sorry when we know it is finding our 'feathered friends'. Numbers of Robins have remained in our area for some unknown reason this winter and we see them

feeding on the Mountain Ash berries throughout the section. They may be birds that have moved south from Canada or possibly ones that just didn't migrate in the fall. Also we did have a rather interesting little Saw-whet Owl that came one day in December and sheltered in our Big Yew for the day. It was interesting to watch the other birds as they discovered him, for he is not a regular visitor with us. The English Sparrows chattered in little huddles as they eyed him curiously, and the Chickadees danced around him 'tee-deeing' constantly. Juncos and Cardinals moved about him in the trees and were obviously aware of his presence, but there was no sharp alarm, just excitement. It was fun to watch.

Our Christmas Census came two days later and we did not find him then, but he did go on the records. We enjoyed the Census and spent the day in the field. Joe found a real good bird for the day, a Boreal Chickadee which was a record for us. We both enjoyed watching it and hearing it call....Our Webster group had a total of 51 species for the day, so our contribution was good....

Excerpts from the minutes, Hawaii Audubon Society General Meeting, 20 April 1970:

...President Charles Kaigler reported on the meeting held on Maui regarding the new harbor at Maalaea Bay and the potential destruction of Kealia Pond. It appeared that the Army Corps of Engineers and the U.S. Fish and Wildlife had already agreed that the harbor should be constructed on the extreme western end of the pond. One individual is interested in using the pond for aquaculture.

...Henry Yuen was congratulated for his excellent article in the April issue of HONOLULU magazine. It was titled "Be a Bit Birdie."

...Mr. Walter Donaghho reported that he now has almost \$400 for his trip to the Kohala Mountains. Mr. Donaghho is inviting Audubon members to contribute....

Colonel Kaigler discussed the possibility of the Hawaii Audubon Society chartering a ship for an ocean-going field trip.

Miss Mona Cunningham was our speaker for this evening. She discussed and showed slides of the birds of Australia....

ALOHA to new members:

Dr. Walter Arnell, 4219 Kaikoo Place, Honolulu, Hawaii 96815.

Mrs. Almeda Townsend Goss, 45-090 Hanoku St, Apt 1307, Kaneohe, Oahu 96744

IN MEMORIAM

Mrs. Reginald H. Carter, a long-time member of the society, died 28 April 1970. We'll miss her devoted support, and we extend our deepest sympathy to her family.

LAST CALL: If you are interested in receiving either one or both indexes, please send in your request indicating (1) annual, (2) five-year, or (3) both before July to Kojima, 725-A 8th Avenue, Honolulu, Hawaii 96816.

JUNE ACTIVITIES:

June 8 - Board meeting at the Zoo entrance bldg at 7:30 p.m. Members welcome.

June 14 - Field trip to Koko Head to see the fairy terns. Usually a half-a-day trip. Bring water and if possible your car. Transportation cost (50¢) to be paid to the drivers. Meet at the State Library at 8:00 a.m. Leader: William P. Mull, telephone 988-6798.

June 15 - General meeting at the Waikiki Aquarium Auditorium at 7:30 p.m.
Speaker: David H. Woodside Topic: NENE (movie)

HAWAII AUDUBON SOCIETY EXECUTIVE BOARD:

President-LtCol Charles G. Kaigler, Vice Pres.-Miss Margaret Titcomb & Jack L. Throp
Secretary-Mrs. Virginia Cone, Treasurer-William W. Prange, Jr.

Board Members: William P. Mull & David H. Woodside

THE ELEPAIO: Editors-Miss Charlotta Hoskins & Miss Unoyo Kojima

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