

THE ELEPAIO

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Hawaii Audubon Society



For the Better Protection
of Wildlife in Hawaii

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FIRST RECORDS OF EMPEROR GEESE FROM THE NORTHWESTERN HAWAIIAN ISLANDS¹

By Roger B. Clapp,² Vernon M. Kleen,² and David L. Olsen.³

During the period from December 1968 through April 1969 a total of ten Emperor Geese was found on Midway Atoll, Kure Atoll, and Laysan Island. Most of these birds occurred at Midway Atoll but single stragglers were found to the west on Green Island, Kure Atoll, and to the east on Laysan Island.

Details of all the Midway sightings are not available but enough is known to document their arrival and number with reasonable accuracy. Eight birds arrived at Midway 15 and 20 December. One was collected by Dr. Robert Klemm and preserved as an alcoholic and another was found dead and was preserved as a skeleton by Dr. Harvey Fisher. The alcoholic is now at Kansas State University and the skeleton is at Southern Illinois University (D. LaBolle, pers. comm.). Several birds were seen on both Sand and Eastern Islands during the winter. The most recent records were of four birds seen and photographed by Kleen at the runway overrun on Sand, 30 March and five seen in the same area by Kleen on 10 April. Kleen and Dr. Robert L. Pyle searched unsuccessfully for these birds on two subsequent occasions (17 April, 16 May). Thus it seems likely that the birds departed the island in mid or late April, or died, since LaBolle noted that several appeared to be growing weaker during the winter.

On Kure, Kleen first saw a goose at 2300, 15 December, as it sat at shoreline near the east end of the runway. We can be almost certain that this bird was observed within a day or less of its arrival since the Pacific Ocean Biological Survey Program was then keeping a constant surveillance of the bird life of Green Island. The bird, apparently exhausted, was captured by hand and preserved as a study skin (USNM 544274) the following morning. Examination of the bird revealed it to be a female weighing 1080 grams with little fat.

An Emperor Goose was first recorded from Laysan in March on one of the periodic surveys by the U.S. Fish and Wildlife Service. On the 27th, while making a circuit of the island, Olsen and John L. Sincock flushed four Pintails (Anas acuta) and 11 Shovelers (Anas clypeata) from the southeastern edge of the lagoon. Remaining behind was an Emperor Goose that was carefully studied through a 7x35 binocular from a distance of about 75 yards. It was approached within 30 yards before it flushed to alight again at the north end of the lagoon. The following day Eugene Kridler saw the bird on the east side of the lagoon and confirmed the identification. It was seen again on the 29th by other members of the field party.

1. Paper No. 59, Pacific Ocean Biological Survey Program, Smithsonian Institution, Washington, D.C.
2. Pacific Ocean Biological Survey Program.
3. Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service.

No Emperor Geese have been recorded previously from the Northwestern Hawaiian Islands but their occurrence has been well documented in the Main Hawaiian Islands on four previous occasions. Henshaw (Auk, 1903, 20:165) reported four captured 12 December 1902 by H.E. Wilson at Kalapana on the Puna coast of Hawaii. More than 50 years later, in January 1956, Joseph Redo found a dead bird in the uplands of Punaluu, Oahu. He later presented this bird as a mounted specimen to the Bishop Museum in Honolulu (E.H. Bryan, Jr., pers. comm.). Laurie Dowsett found two in Kailua, Oahu, on 3 December 1960. One of these birds, much emaciated, died on 7 December and the other was caught on the 10th for eventual release at Kanaha Refuge, Maui (Hatch, Elepaio, 1961, 21:59). Telfer (Elepaio, 1968, 28:71-72) saw a pair in the Wailua beach area, Kauai, on 13 December 1967 and the following day saw two individuals, one of which had been captured. The captured bird, extremely emaciated, died the following day and was evidently sent to the Kauai Museum (Anon., Elepaio, 1968, 28:72). The other bird, also emaciated when captured, was released on 26 December after having been cared for in captivity. In addition, Munro (Birds of Hawaii, 1955:134) reported that "A goose probably of this species landed in Makaweli, Kauai, in 1940." We do not believe that this record is sufficiently well documented to be considered a valid record.

AXIS DEER - WELCOME OR NOT?

By Margaret Titcomb

In Hawaii as well as all over the rest of the world there is great and growing interest in preserving as much of our natural heritage as we can, especially the land. For we must be able to look at land covered with greenery, as well as structures, and see to it that our children have the opportunity as well. Someone has said that without nature, man will die.

What many of us do not think of or know of are some other uses of land. One is by hunters. Several animals have been introduced to the islands for the benefit of hunters. That is a pastime that requires land of many acres, for it must have sufficient grass or other vegetative material to give the animals food, and enough land for their "cover" so that hunters can enjoy the game of hide and seek with them. Hunting is classed as recreation. Comparing the requirements of land for tennis players, or even golfers, hunters' requirements are enormous. They say they use "waste" land, but no land in Hawaii is wasteland - more of which later.

What happens in these large areas where the game roam at will? Sheep stay put but deer do not. They must eat grasses and other low plants, the young and tender new growth is especially desired, including leaves. This constant removal of low growth prevents the forest from renewing itself and eventually leads to its death. The land is not allowed to remain in its natural state, but is constantly changing character, the soil hardening, according to the treatment it gets from animals.

Shifting our thoughts to an event of 1868, Kamehameha V, ruler of that period, was given a present by a friend in India: eight spotted deer, called Axis deer. They are small, charming to look at. Hunters like the prestige of shooting wild rather than tame animals gone wild, deer rather than sheep, goats or pigs. The deer were sent to Molokai, later a few were sent to Lanai, a few are on Maui, and are sure to increase. Oahu had a few.

Those eight deer of 1868 roamed over Molokai, and after thirty years had reached the number of about 7000. Agriculturists then wanted to use the land, and therefore rid it of deer. Hunters were hired from California to kill them off and before many weeks had reduced the number to an estimated 2500. During that thirty years, the forests of Molokai changed greatly, it has been said. Vancouver's gift of cattle, plus the deer, possibly pigs also, had done great harm. They have never recovered their healthy state of Hawaiian days, even though hunting laws were drawn up, and hunting "controlled."

The Fish and Game Division of the Land and Natural Resources Department of the State is in charge of this control and doubtless does an excellent job. There are many poachers, but this is nothing new, alas. Control however, is of and for the hunters, aimed at their benefit. Not too many animals are allowed to live, so that it will not be too easy to find an animal to shoot; likewise not too few, so that there is no sport at all. But control is not from the standpoint of preservation of the land, except incidentally. Otherwise all hoofed animals would be removed entirely.

To the minds of many, this hunting use of the land and the forests is to be regretted. We would rather see a healthy forest, evidence of what nature developed on her own than a shambles of the original stand of trees and other plants. Recent observers have called East Molokai's forest a disaster area, as to its vegetation.

Other than desolation versus healthy conditions, we can consider the harm to the soil beneath the trees. As young growth is removed, the soil dries and hardens. There is less material to catch the rain. As animals tread on the soil, especially hoofed animals, that too hardens it. Paths of animals through forests get especially barren. When rain falls or mist settles, the run-off of water is fast. Instead of seeping into the soil and therefore adding to the water stored there that does good to all plants in the area, it runs off fast and is lost. This is enormously important to animals and plants. Water is life to them. With increased population we must conserve our water on all parts of the islands. The tread of animals, and even of man himself, is detrimental to the land, in and outside of the forests.

What many of us have escaped knowing is that Hawaii is a treasure-house biologically. The story of its plants is as exciting as a novel. Being so far from other land, Hawaii received very little in the way of plants and seeds, anciently. Winds, ocean currents carrying drifting vegetation, and seeds carried by birds "clothed" the islands with vegetation, doubtless taking centuries to do it. Whatever arrived from various other lands either died in this new land or adjusted to conditions, forced to change in order to do so. A delicate balance was achieved in this isolation. But when there was sudden addition of plants of the early arrivals from southern Polynesia, the plants had to adjust to the strangers. When the great influx of plants after the arrival of European man hit the islands, all sorts of changes had to occur, and many plants "retreated" to areas not frequented much. The contest for space began and the new plants were the more aggressive, thus many of the original plants died. But many have remained, and still survive in these "waste" areas of the land. These we hope to keep, representatives of our historical heritage. Many of them have not been studied sufficiently, and a great many scientists, here and elsewhere, are eager to solve the riddles of their development. These are part of the treasure of Hawaii.

As to harm to agriculturists and others engaged in land use, the deer will be a more formidable enemy than other game now present. They are more mobile, have never adjusted to man's rules (domestication), they are skillful at jumping high fences, as well as crawling under. The cost of keeping them in their place would be enormous. The cost of fencing is high and the great length of such areas as the National Park and the large ranches and farms and sugar cane would prove almost prohibitively expensive. Gardeners would never know when these quiet night-feeders would visit their gardens and leave desolation behind. Shooting them? By whom? Lawsuits? Accidents in the half-light of dawn or dusk? They have occurred.

Compare the islands of Molokai, Lanai and Hawaii. The scene is very different. Molokai and Lanai are devoted chiefly to agriculture, Hawaii has agriculture but also is dotted with villages or scattered houses. The deer may be released in the cold of Mauna Kea, according to present plan, but they are animals of the tropics or semi-tropics, at home in large, open forests. Instinctively they will seek such conditions. They will want any food they can get and may be quite content in pasture lands, competing with the cattle for the carefully cultivated grass. They will roam. They will share water troughs and salt licks, and if either cattle or

deer contract diseases the two animals will share them. Cattle can be found and eradicated, if sick. It is expected that deer will hide as successfully as goats. The diseases, if there will stay, a constant menace.

Hunters make up about one per cent of our population. Some of us think that they are asking a great deal too much of the rest of us.

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The following articles on the Axis Deer are from HONOLULU STAR-BULLETIN:

9 October 1969, page A-18: Deer to Be Released on Big Isle Despite Protest
by Helen Altonn

The Governor's Committee on Preservation of Scientific Areas has expressed strong objections to State plans to release axis deer on the Big Island, but Land Chairman Sunao Kido said the first shipment of seven deer from Lanai will be made as scheduled Wednesday "unless there is any compelling reason why the action should be postponed."

He indicated that the committee has not so far presented sufficient cause for a postponement.

The Committee explained its position in a letter to Gov. John A. Burns this week. Kido received a copy of it yesterday. It was signed by J. Linsley Gressitt, Bishop Museum entomologist and chairman of the committee.

The committee noted that negotiations are under way for funding of Hawaii's participation in the International Biological program (IBP). More than 50 scientists from Hawaii and elsewhere will be involved in the study of "areas which have been affected as little as possible by man and his activities," the committee said.

Much of this work will be done on the Big Island, and introduction of the deer would obstruct the program, the committee contends. Conceivably, the committee added, the deer introduction could jeopardize funding for the research, expected to be about \$500,000 for the first year and more during each of the next four years.

Despite this, the Board of Land and Natural Resources is expected to clear the way for the deer shipments at its regular meeting in Honolulu tomorrow. Kido pointed out that the board already has approved release of the deer on the Big Island. This was done five years ago. At that time, the board voted unanimously to instruct Fish and Game Director Michio Takata "to expedite the capture of the deer and have them shipped to Hawaii and place them in the 300-acre holding pen on Mauna Kea..."

...For several years, however, the matter was tied up in court. W.H. Greenwell, Ltd., filed a complaint for an injunction against the Land Department and a temporary restraining order was issued in March, 1964. The State filed a motion to dismiss the restraining order which was denied. The trial court decided in favor of the cattle ranching company and enjoined the State from releasing the deer.

The Supreme Court in January of last year, reversed the decision on appeal from the State and the injunction order was dismissed by the Circuit Court.

The Fish and Game Division since then has been capturing axis deer on Lanai and testing the animals. There are now 19 axis deer in captivity on Lanai. Seven have been found free of diseases and will be shipped to the deer-proof enclosure at Puu Laau on Mauna Kea for observation and study. Seven had negative results on tests. These and the five others will be tested and shipped after the State veterinarian declares them in healthy condition.

..."This is not a rampant release of deer," Kido emphasized, pointing out that they will undergo further study in a fenced area before they are freed. Even then, he said, the Fish and Game Division will have to return to the Land Board for permission to release the deer. "So it will still be controlled."

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11 October 1969, page A-5: Board Reaffirms Deer Will Go to Big Island

The State Board of Land and Natural Resources yesterday reaffirmed an action it took 5½ years ago - Allowing its Fish and Game Division to ship Axis deer from Lanai to the Big Island. The first shipment of seven deer is scheduled Wednesday.

...

16 October 1969, page A-9: Axis Deer Transplant Postponed

A controversial shipment of axis deer from Lanai to the Big Island--scheduled yesterday by the State Fish and Game Division--has been postponed. Sunao Kido, chairman of the Board of Land and Natural Resources, said he called it off for two reasons: "The Governor asked if I would delay shipping the deer to give him time to review the situation. And, simultaneously, I was advised by our men that the 300-acre holding pen is not ready for the deer." ...Kido said the holding pen is not ready because it must be cleared of other wildlife and some mouflon sheep recently were spotted there. He could not say how long the shipment will be postponed....

21 October 1969, page A-4: Group to Renew Fight Against Deer Imports by Helen Altonn

The Governor's Committee on Preservation of Scientific Areas is assembling forces to renew its fight against the introduction of Axis deer on the Big Island. The committee has been given a reprieve - with a scheduled shipment of deer from Lanai to the Big Island called off last week at the Governor's request.

"We are providing more data to the government to back up our arguments," said Dr. J. Linsley Gressitt, committee chairman....The committee was established by a resolution adopted during the 1968 session, but was only recently organized with appointments by the Governor.

Gressitt said the committee is to plan for nature preserves in the Islands--"something very important that this State just hasn't done." He added, "Hawaii's natural environment is so vulnerable" that it is already too late in many cases to save rare areas and wildlife. "We want to tell everybody we can that we don't think the ecology of these Islands is enough well known to predict what the species (deer) will do....We have no funding and there have got to be ecological studies because there haven't been any."

He said the committee is working on recommendations for the Governor to present to the next legislative session.

21 October 1969, page A-19: Vote Asked on Axis Deer Transplant

A referendum should be held to determine whether Big Island landowners want axis deer introduced on their Island, a conservationist said last night. Richard H. Davis, who has observed deer on Molokai, said as far as he knows, no poll has been taken....

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Letter to Governor Burns from President Titcomb, 21 October 1969:

The Hawaii Audubon Society has been attempting for years to point out the dangers to vegetation and environment of the proposed and ordered introduction of the Axis deer to the island of Hawaii. We are therefore most thankful for the reprieve to introduction which you granted on the 15th of October for the benefit of your Committee on Preservation of Scientific Areas. The ecologists who have studied such introduction of wild, hooved animals to areas already damaged by hunters' game animals see so clearly the constant harm being caused now, and know what folly it would be to add another animal to the "hunting" area, perhaps less harmful in some ways, more harmful in other ways.

Our Society hopes you will always be on the side of CARE OF THE LAND.

Letter from Eleanor C. Robbins, Laurel, Maryland, 11 November 1969:

I am very opposed to introducing axis deer on Hawaii. Once established they can never be completely removed. Killing deer will not undo the damage they have done. Even native white-tailed deer eat half of the corn crop in Dorchester County, Maryland.

Field Notes from Jack L. Throp: Hawaiian Monk Seal

On 4 November 1969 an Oahu family named Bixby saw an adult Hawaiian Monk Seal in Kaneohe Bay. They were greatly surprised to see what they thought was a Walrus, not knowing that the Hawaiian Islands has a seal special of their own.

Excerpts from the minutes, Hawaii Audubon Society General meeting, 15 September 1969:

...The society discussed the planned shipment of Axis deer to the Big Island.... Mr. Throp showed a series of seven slides of Molokai depicting the present condition of that island's flora. Introduced goats, cattle, and deer have denuded great areas where the forests of native 'Ohi'a and fern understory flourished less than fifty years ago. The goats and cattle opened up the area; the deer followed. Halawa Valley, once heavily forested land, is now open savannah. The island of Molokai, with its heritage of endemic and native flora and fauna, is irredeemably devastated.

Miss Hona Cunningham showed slides of the birds of Australia.

20 October 1969:

...Mr. Richard Davis, who is a well known hiker and sportsman in this state discussed the Halawa area of Molokai and the depredation of the native flora by feral goats and cattle and by the Axis Deer. He also discussed possible effects on the biota of the Big Island if the deer are introduced there. Mr. Davis made the following points:

1. There is a possibility that the cattle on Molokai have a higher incidence of tuberculosis than do cattle elsewhere in the state. Deer use the same salt licks and watering troughs as do the cattle. The deer themselves could become infected and spread the infection even further.
2. Only a few mainland visitors and about 100 local people would benefit if the Axis Deer were introduced to the Big Island....
3. The Big Island has extremely rare plants. To protect them, it would be necessary to build a deer-proof fence fifteen feet high.
4. No hunting is permitted in Volcanoes National Park. If the deer went into that area, it would be extremely difficult to eradicate them.
5. The State Board of Fish and Game is not permitted to control game on private property. The Big Island landowners could turn their lands into hunting resorts. The state has absolutely no control over a landowner posting his land and forbidding entry to fish and game personnel. Mr. Davis suggested that we write to our legislators pointing out this lack of state control over the personal policies of landowners regarding game animals on private property.

Mr. Davis showed a depressing series of slides of the Halawa Valley area on Molokai which is owned by Mr. George Murphy.

There was an extended and animated discussion among the members of the Audubon Society after Mr. Davis's talk. It was suggested that a referendum be put before ranchers and farmers on the Big Island asking them if they want the Axis Deer.

Miss Titcomb pointed out that "control" is a deceptive word. Even if the deer population were kept down on the Big Island, those remaining would continue to damage the native vegetation.

Dr. Charles Lamoureux emphasized that we should have a positive approach to protecting the entire environment. We should avoid a "Bird Watchers vs. Deer Hunters" type of campaign. He suggested that we should not advocate the fencing of a specific area anywhere. Any valley in these islands, even on Oahu, contains one or two plants that are found nowhere else in the world except in that valley.

Dr. Lamoureux also told us that the cattle and goats opened up the virgin forest areas on Molokai, and the deer followed them. The Conservation Council and the Botanical Society have been writing letters since 1950 to prevent the same thing from occurring on the Big Island. He told us of a study made by Charles F. Yocom in 1966 entitled "Ecology of Feral Goats in Haleakala National Park, Maui, Hawaii" ...Professor Yocom recommended in this study that Haleakala National Park be completely fenced in and the feral goats all be shot!

Dave Woodside related a bit of history. A move was initiated by the Territorial Board of Agriculture and Forestry in 1950 to bring deer to the Big Island. Action was deferred until an ecological study could be made. This study was made by William Graf of San Jose, California.

We learned from Mr. Woodside that there are an estimated nine thousand goats in the national park on Hawaii. There are deer in Makalapa Crater on Oahu, and there

are deer on Maui. The Maui deer were introduced about ten years ago by the Hawaii State Department of Fish and Game.

To explain partially the legislative mandate to locate the Axis Deer on the Big Island, Mr. Woodside explained that resident hunters on that island want equal treatment with Molokai and Lanai.

An opinion was expressed that the goals of "Preservationists" among conservationists will be given little serious attention.

Mr. Davis told us, as a matter of especial interest to Audubon members, that there are a "fantastic number" of feral house cats in Waimea Canyon on Kauai.

Miss Unoyo Kojima expressed a need in this state for more courses in ecology. Dr. Lamoureux said that such courses are multiplying at the University of Hawaii. Both of these individuals pointed out that we need textbooks on Hawaiian ecology, not mainland ecology.

Dr. Lamoureux suggested that we write a letter to Governor Burns thanking him for holding up the transport of the Axis Deer to the Big Island....

Field Trip 9 November 1969 to Sand Island, Waipio, and Kahuku

The November field trip to observe shore birds was both successful from the number of birds observed and unsuccessful in that we were unable to find the bristle-thighed curlew in Kahuku. My wife and I had found one lone curlew in the area on October 24.

The group drove first to Sand Island where golden plovers, ruddy turnstones and sanderlings were observed in numbers. Several wandering tattlers and stilts were also present on the offshore sandbars while almost every buoy in the distance held one or two resting brown boobies. Several more were flying in the area.

The Waipio Peninsula settlement basin was quite active, and we found at least three sharp-tailed sandpipers and one pectoral sandpiper, as well as the usual complement of shore birds. Cattle egrets, shovelers and pintails were also observed as well as black-headed mannikins, strawberry finches, white-eyes, doves, cardinals and mynahs. Walker Bay produced another sandpiper (sharp-tailed?), over 66 ducks, mostly pintail, and four black-crowned night herons.

The Kahuku settlement basin is beginning to dry up, but the coots remain in quantity and we were able to spot several gallinules. The area was well searched to the airstrip termination and the adjoining lagoons and while plovers, turnstones, stilts, egrets and ducks were present in large numbers (well over 200 ducks) we were unable to locate any of the curlew. They have apparently changed areas or moved on to outer islands. Bill Hull found a mockingbird in the brush bordering the airstrip lagoon, and three great frigatebirds were seen soaring low along the shoreline.

Charles G. Kaigler

Field Notes from Dr. Delwyn G. Berrett, Associate Professor of Zoology, Church College of Hawaii: Bristle-thighed Curlew and Shama Thrush

A note in the October issue of the ELEPAIO concerning the occurrence of the bristle-thighed curlew at Kahuku has prompted those of us who live nearby to check the area more frequently. On September 17 Philip Bruner, a senior student here at the Church College, saw a flock of between 15 and 20 birds on the Kahuku airstrip. Since that time, despite frequent visits, neither of us has seen a curlew.

To my knowledge the Shama is not known to occur regularly on our side of the island. I was surprised to find a large colony of these birds frequenting the wooded valleys at the base of the Koolau east of Haleiwa and near the Pupukeya region. We have in our collection at the Church College a specimen taken from that area on August 16, 1968. We saw them in the same area again this past summer. Although I have never seen one on the Kahuku or Laie side of the mountains, Phil Bruner recorded one mauka of Kahuku during August 1969 and another during September mauka to the Church College of Hawaii campus.

We will continue to look for the elusive curlew.

Field Notes from Charles G. Kaigler, 10 November 1969: Chinese Thrush & Red-vented Bulbul

Today Mrs. Okino of 1260 Olupii, Kailua, Oahu, phoned me for identification of two birds she had observed in her yard. From her descriptions, which were good, the two birds were provisionally identified as a Chinese Thrush and a Red-vented Bulbul.

IN MEMORIAM

We have just learned of Mr. Robert I. Baldwin's death. He was a long-time member from Hilo, and we'll miss him. We extend our deepest sympathy to his family.

1969 Christmas Bird Count

The Honolulu Christmas bird count is scheduled for Sunday, December 28, 1969. The count is conducted within a circle 15 miles in diameter, centered close to Nuuanu Pali. This same area has been covered each year since 1954. General coordinator will be Charles G. Kaigler, with groups assigned to territories as follows:

- Group A: Kaelepulu Pond, Kawainui Swamp, Kailua residential area, and Kaneohe Marine Corps Air Station--Ronald L. Walker, 235-1681
- Group B: Aiea Trail--Unoyo Kojima, 734-0985
- Group C: Keehi Lagoon, Salt Lake and Nuuanu Valley--William P. Mull, 988-6798
- Group D: Punchbowl and Tantalus--Margaret Titcomb, 536-5717
- Group E: Manoa Valley, Manoa Falls Trail, and downtown Honolulu--
- Group F: Kapiolani Park, Zoo, and Ewa side of Diamond Head--Jack Throp, 923-7723
- Group G: Diamond Head Crater (inside) to Paiko Lagoon and Kuapa Pond including the residential area--Walter R. Donagho, 747-975

All members and guests are welcome to participate in the count. Please call the leader of the area of your choice, or Charles Kaigler, 988-3195, to arrange meeting place and time. The fee paid by each participant was \$1.00 last year. We have not yet heard from the National Audubon as to the fees for this year. This money is forwarded to the National Audubon Society to help defray the cost of publishing the Christmas Count issue of Audubon Field Notes.

Full details and discussion of count plans will be given at the annual meeting on December 15.

HAWAII'S BIRDS, a field guide for \$2.00, is an excellent gift for mailing to friends. Send in your orders to: Book Order Committee, Hawaii Audubon Society, P.O. Box 5032, Honolulu, Hawaii 96814.

DECEMBER ACTIVITIES:

- December 15 - Annual meeting at the Waikiki Aquarium Auditorium at 7:30 p.m.
Program for the night: (1) Elect officers (2) Work out details of the Christmas bird count.
- December 28 - Christmas bird count.

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Dr. Donald C. Gordon, Jr.	Mr.&Mrs. William P. Mull	Dr. G. C. Whittow
Ray Greenfield	Hector C. Munro	Mrs. Maxwell J. Wilcomb
G. A. Hicks	Dr.&Mrs.William A.Myers	Henry Yuen
	Mr.&Mrs.Walter K.Nakanishi	

Regular - Rural Oahu

Mrs. Mabel R. Becker-Kailua
 Dr. Delwyn G. Berrett-Laie
 Mrs. Nancy A. Conklin-Kailua
 Mrs. Helen A. deS. Canavarro-
 Kaneohe
 Marvin K. Devereux-Kaneohe

Mrs. William G. Gorst-Kailua
 Mr. & Mrs. William C. Hodge-Kailua
 Eugene Kridler-Kailua
 Curtin A. Leser-Kailua
 Mrs. Anne Powlison-Kailua
 Robert Shallenberger-Waimanalo

Gerald E. Swedberg-Kailua
 Hiroshi Tagami-Kaneohe
 George E. Vickery-Kailua
 William H. Vickery-Kailua
 Ronald L. Walker-Kaneohe
 Richard Young-Pearl City

Regular - Other Islands

Mrs. Robert I. Baldwin-Hawaii
 Winston E. Banko-Hawaii
 Myrna Campbell-Kauai

Mrs. E. C. Cluff, Jr.-Kauai
 Barbara H. Davis-Kauai
 Mrs. Hans W. Hansen-Kauai

Mrs. Violet Hansen-Hawaii
 Mrs. Carroll E. Lindley-Hawaii
 Dr. P. Quentin Tomich-Hawaii
 Tom Vaughan-Hawaii

Regular - Out of State

Dr. Dean Amadon-N Y
 Dr. Alfred M. Bailey-Colo
 Fremont O. Ballou-Calif
 Mrs. Diane Birindelli-Cal
 Donald Brock-Calif
 John W. Brown-N Y
 Larry Brown-Wash
 Timothy A. Burr-Calif
 Dr. Robert H. Cooper-Ind
 Paul F. Covel-Calif
 Orville Crowder-W. Va
 Kenneth L. Cuthbert-Calif
 Elizabeth Dyer-Del
 Mr. & Mrs. William J. Edger-Mich
 Dr. William H. Elder-Mo
 Jane G. Eliason-N J
 Dr. R. A. Falla-New Zealand
 F. R. Fosberg-Wash, D C
 Norman Foster-N Y
 Mrs. Bertrand Fox-Mass
 Mr. & Mrs. Carl F. Frings-Okla
 Dr. & Mrs. Hubert Frings-Okla

CDR J. Richard Gauthey-S C
 Mrs. Ralph A. Goni-Calif
 Earle E. Greene-Calif
 Mr. & Mrs. Virgil L. Griner-Mich
 Karl W. Kenyon-Wash
 Joseph E. King-Wash, D C
 Mrs. Walter Klaubunde-N Y
 Dr. Frederick W. Landers-N J
 Mrs. George Laycock-Ohio
 Dr. Alfred J. Marston-N Y
 Mrs. David J. Martin-Canada
 Mrs. Ethel Matheson-Wash, D C
 H. R. McKenzie-New Zealand
 Mr. & Mrs. Joseph E. McNett-N Y
 Dr. Norman H. Mellor-Calif
 George T. Morrison-Mont
 E. W. Mudge, Jr.-Texas
 Mr. & Mrs. C. Turner Nearing-Ill
 W. M. Ord-Guam
 Dr. Roger T. Peterson-Conn
 Mrs. H. Paul Porter-Va

Roy T. Puchey-N J
 Dr. & Mrs. Robert L. Pyle-Md
 Barbara Rae-Mich
 Hannah T. Richards-Minn
 Dr. Frank Richardson-Wash
 Mrs. Donald P. Russell-N H
 Mary Orr Russell-N Mex
 Paul M. Scheffer-Wash
 Euphie G. M. Shields-Calif
 Mrs. Jane Solamillo-Wash
 Mrs. Nina Dean Steffee-Fla
 Mrs. Clyde K. Stroburb-Calif
 John W. Swanstrom, Jr.-Ill
 Laurence J. Taylor-Neb
 Mrs. S. F. Thomas-Calif
 Dr. Miklos D. F. Udvardy-Calif
 G. Bernard Van Cleve-Pa
 Mrs. Owen H. Wangensteen-Minn
 Dr. Richard E. Warner-Canada
 Mrs. Ann E. Wissler-Utah
 James R. Wolf-Pa

Institutions

Amer Mus of Natural Hist-New York, N Y
 Atlantic Naturalist-Washington, D C
 Bishop Museum-Honolulu, Hawaii
 British Museum-London, England
 City of Refuge Nat Hist Park-Honolulu, Haw
 College of William & Mary-Williamsburg, Va
 Div of Fish & Game-Honolulu, Hawaii
 Fort Shafter Library-Honolulu, Hawaii
 Haleakala National Park-Kahului, Maui
 Harvard University-Cambridge, Mass
 Hawaii Public Library-Hilo, Hawaii
 Hawaii Natural Hist Assn-Hawaii
 Hawaii State Library-Honolulu, Hawaii
 Hawaii State Library, Kaimuki Branch
 Kapahulu Branch
 Hickam Base Library-Hickam AFB, Oahu
 Honolulu Advertiser-Honolulu, Hawaii
 Honolulu Zoo-Honolulu, Hawaii
 HSPA Experiment Station-Honolulu (LIFE)
 Kanehameha Schools-Honolulu, Hawaii
 Kauai Public Library, Hanapepe Branch
 Kapaa Branch
 Waimea Branch

Kauai Public Lib Assn, Ltd-Lihue, Kauai
 Maui Public Library, Wailuku, Maui
 Kahului Branch
 Lahaina Branch
 Makawao Branch
 Molokai Public Library, Kaunakakai, Molokai
 National Audubon Society-New York, N Y
 Oceanic Institute Library-Waimanalo, Oahu
 Palama Settlement-Honolulu, Hawaii
 Patuxent Wildlife Res Cen-Laurel, Md
 Peabody Museum-New Haven, Conn
 Pennsylvania State Univ-Univ Park, Pa
 Point Reyes Bird Observatory-Bolinas, Calif
 Simon Fraser Univ Lib-Burnaby, Canada
 Smithsonian Institution-Washington, D C
 University of California-Berkeley, Calif
 Los Angeles, Calif
 University of Hawaii-Honolulu, Hawaii
 University of Kansas-Lawrence, Kansas
 University of Michigan-Ann Arbor, Mich
 Waikiki Aquarium-Honolulu, Hawaii
 Waikiki Beach Press-Honolulu, Hawaii