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For the Better Protection
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HAWAIIAN HAWK

By George T. Morrison
National Park Ranger

Introduction

Shortly after my arrival in Hawaii Volcanoes National Park, Winston Banko suggested several bird study projects I might pursue during my assignment in the Park. After some discussion and thought, I selected the Hawaiian Hawk as a study species.

Objective

In general, there are no distribution maps for any endemic Hawaiian avian species. Though the Hawk is considered restricted to the Island of Hawaii there are sizeable areas on this island where the birds probably do not occur. It was hoped that establishing a definite hawk distribution keyed to certain vegetation types in the park would give some clues as to the total hawk distribution island wide.

Method of Study

Available time and funds have prevented a direct approach to finding the hawk distribution such as dyeing or marking birds to chart their movements. However, hawks are frequently noticed by Park Service employees as they perform official duties. These people were asked to report all hawks seen to the author. Each report was recorded on a 5 x 8 Unisort Analysis Card. A short form was typed on the upper portion of each card to aid the author in securing standard information from each sighting. The following data were sought: Date of sighting, time of day, length of sighting, name and address of observer, location and elevation of sighting, number of birds seen, color phase of bird and brief weather description. The bottom half of the card was left open for specific comments on any action noticed. Each card was completed by the author through a short verbal interview with the individual reporting the sighting. It was hoped that a collection of sightings over a two year period would show a preference by the hawks for certain vegetation types.

Description of the Hawk

The Hawaiian Hawk (Buteo solitarius) called "'Io" by native Hawaiians, is a small Buteo about 15 - 18 inches in length (Henshaw 1902a). Two color phases exist. The dark phase is dark brown to black upper with ferruginous color on wings. Light phase is primarily buffy-white under parts, darker brown upper parts (Henshaw 1902b).

Description of the Park

Hawaii Volcanoes National Park is situated on the southwest slopes of the mountains Mauna Loa and Kilauea on the Island of Hawaii. It lies between the altitudes of sea level and 13,680 feet. In certain regions deep craters are sunk

into the ground, some of which have erupted in very recent times. In the Kilauea region a broad, slightly elevated hump runs down the mountain which forces air upwards and causes it to lose its moisture as it comes in with the northeast trade winds. This condition results in the presence of well-defined wet and dry areas within the park boundaries. (Baldwin, 1940)

'Ohi'a, Metrosideros spp., is the predominant overstory tree. In combination with various fern, grass, and shrub species, the 'ohi'a covers most of the vegetated area in the park. Approximately 50% of the park is either barren lava and various volcanic products or vegetated by a few grass species.

Thirty-two vegetation types have been described in the park. A complete, detailed snalysis of each type is obtainable for those desiring such information (Doty & Mueller-Dombois 1966).

Summary of Current Records

The study began in January 1967. Table I gives a complete break down of the sightings made during the study period.

Most sightings were made close to park roads where employees travel, as could be expected. Few sightings were reported from back country regions. Areas such as upper Mauna Loa, Kau Desert and Keone to Kuee coastal regions are not represented by a sighting (See Map #1).

During the study period, park employees, myself included, spent approximately 1200 hours in back country areas on official duties. An effort was made to question employees as they returned about possible sightings. No hawks were reported by these people in back country areas.

Range of the Hawk in the Park

Map #1 shows location of sightings within the park. Each dot represents one sighting. As earlier indicated, most sightings were made along park roads.

Conclusions

The study shows that the Hawaiian Hawk is likely to be found anywhere in the park below about 8500 feet where woody vegetation exists. The barren sections of the park are apparently not part of the normal hawk range. The hawk does not show a preference for any specific vegetation type within the park.

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Literature Cited

Baldwin, Paul H., 1940, Environmental Relationships of Birds in the Kilauea Section, Hawaii National Park, Natural History Bulletin No. 6, Hawaii National Park, 26 pp.

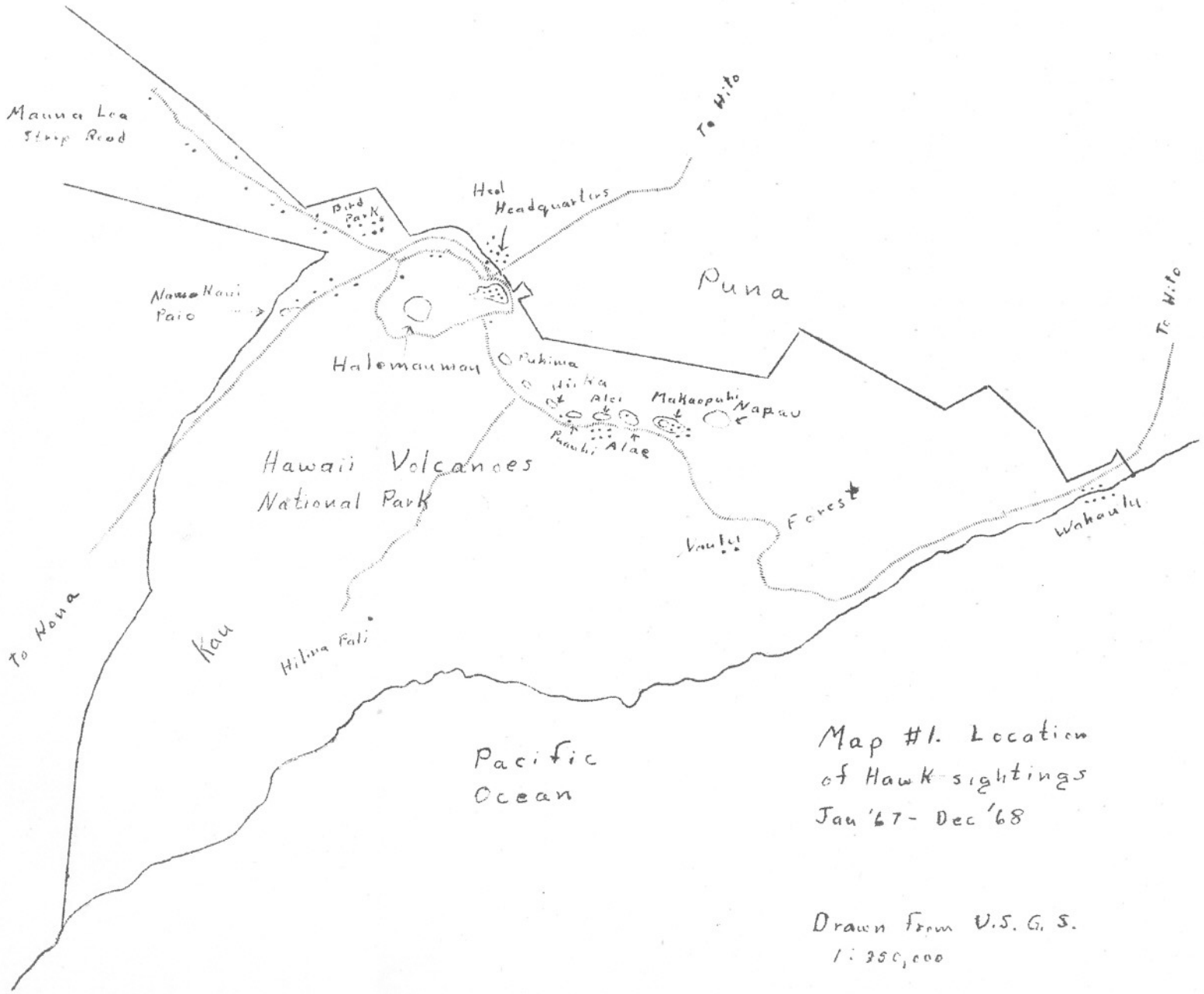
Doty, M. S. and Mueller-Dombois, D. 1966, Atlas for Bioecology Studies in Hawaii Volcanoes National Park, University of Hawaii, Hawaii Botanical Science Paper No. 2, 507 pp.

Henshaw, H. W., 1902a, Birds of the Hawaiian Islands, Thos. G. Thrum, Publisher, Honolulu, 146 pp.

Henshaw, H. W., 1902b, "On the Various Plumages of Buteo sòlitarius", Ibis, Vol. 2.

	1967												1968											
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Alae									1															
Aloi			1	1		1		1				1							1					
Headquarters						1		2	1					1						1		1		
Hilina Pali																			1					
Kipuka Puaulu				2				1	1			1			1	1				1			1	
Kilauea Iki				1					1											1	1	1		1
K M C																				2				
Makaopuhi						1								1								1	2	
Naulu									1														1	
Namakani Paio																	1		1	1	1			
Pauahi					1											1								
Strip Road			2	2			1		1										1			1		1
Uwekahuna																1								
Wahaula								3	2		1			1										

Table # 1. Summary of Hawk sightings for 1967 & 68 by month and location.



Map #1. Location of Hawk sightings Jan '67 - Dec '68

Drawn from U.S.G.S. 1:250,000

THE CONDOR, July 1968, Vol 70, No. 3, pages 265-266: Short Communications -- Rediscovery of Maui Nuku-pu'u (Hemignathus lucidus affinis) and Sighting of Maui Parrotbill (Pseudonestor xanthophrys), Kipahulu Valley, Maui, Hawaii by Winston E. Banko, Bureau of Sport Fisheries and Wildlife, U.S. Department of the Interior, Hawaii National Park, Hawaii 96718.

The following account if of extreme interest:

"Kipahulu Valley is a prominent geological feature of the east slope of Haleakala Volcano, rising from sea level to 2470 meters where it adjoins Haleakala National Park at the rim of the crater. An expedition sponsored by Nature Conservancy carried out a biological survey of this little-known valley during August 1967.

"I participated in the Kipahulu Valley expedition from 17 to 31 August with the principal goal of finding out what I could about several rare species of birds which possibly inhabited the valley...

"The first sighting (of the Maui Nuku-pu'u) was made at 10:30 24 August at an elevation of 1801 meters while I was descending the expedition's trail alone on the ridge dividing upper Kipahulu Valley. I was proceeding slowly, observing every visible bird with 7x35 binoculars when a small, dull, yellowish bird with a dark eye stripe and a moderately long, distinctly sickle-shaped bill was sighted an estimated 20 to 30 meters away in the crown understory of a large 'ohi'a tree. This individual was active, moving about on the branch and hopping frequently to other twigs. This action afforded various views of its unique bill. After about 15 seconds or so it flew into the crown of another, more distant 'ohi'a where a distinctly yellow posterior was noted, and its peculiar hook-bill was silhouetted against an overcast sky. After 10 to 20 seconds in its new location, where it was somewhat less active, it flew away.

"The second individual was seen along the same trail 25 minutes later at about 1786 meters elevation. This bird possessed much more yellow underparts with the dark eye stripe contrasting markedly with the moderately bright-yellow head. It was observed for about 30 seconds at a distance of not more than about 10 meters as it foraged 3 to 5 meters above the ground in a community of 'ohi'a, pilo (Coprosma sp.), and 'olapa (Cheirodendron trigynum) trees. Several birds of the genus Loxops were also foraging in the immediate vicinity. Neither this nuku-pu'u nor the first one seen was heard making a sound.

"The last sighting of this very rare bird was at 14:05 the same day at about 1740 meters altitude along the same ridge trail. The plumage of this third individual appeared much duller than either of the preceding nuku-pu'u, but the sickle-bill was seen clearly as the bird approached to within about 8 meters in response to my 'squeaking' before it flew off. Several sharp shrrp call notes similar to those of Loxops sp. may have been given by this bird, although there were individuals of the latter genus in the immediate vicinity which could have conceivably made these calls. I did not see movement of the bill that would actually pinpoint the nuku-pu'u as the source of the sound. This third bird, unquestionably an immature, or a mature female, was watched for about 30 seconds....Substantial periods of time were spent on 25 and 28 August along the section of trail where these birds were sighted, looking for others, but with negative results.

"A few weeks after conclusion of the expedition, George Morrison reported seeing a nuku-pu'u in Kipahulu Valley. Mr. Morrison, a National Park ranger, was descending the expedition trail alone 11 September when he made his sighting at about 2048 meters elevation....Mr. Morrison reported seeing the unusual bird several times at distances varying from 8-10 to 12-15 meters. Size, bill shape, and coloration of this individual as described to me by Mr. Morrison were similar to those of the nuku-pu'u I saw....I consider his sighting of nuku-pu'u valid, substantiating my own observations in this area. Thus two of the three races of Hemignathus lucidus, those of Kauai and now of Maui, have been rediscovered in recent years; only the Oahu race is now believed extinct.

"Pseudonestor xanthophrys. Maui Parrotbill. Late in the afternoon on 29 August, the last day of expedition field work, I was seated at an overlook of the upper Kipahulu Valley at about 2000 meters elevation and prepared to photograph any of the

various species of honeycreepers that might visit an 'ohi'a tree in bloom below. At 17:33 a smallish, but "big headed" bird was seen to fly into a nonblooming 'ohi'a tree, one of a stand below my lookout. Observation through the 7x35 binoculars made identification of this bird positive at the first viewing. It was Pseudonestor xanthophrys without a question. It flew toward me and alighted several times, finally perching directly overhead not more than 10 or 20 meters away. Body size and plumage color were not greatly different from the first nuku-pu'u I saw, but the much shorter,more hooked upper mandible and massive lower one left no doubt of its identity. This individual was actively moving in a more or less direct line through the 'ohi'a midstory. It was in sight for about 30 seconds and did not call....

"Sightings of the Maui Nuku-pu'u at from 1740 to 1801 meters (and by George Morrison at 2048 meters), and of the Maui Parrotbill at 2000 meters extend the known altitudinal ranges of these birds considerably above the 1219 to 1372 meter levels previously reported for the Maui Nuku-pu'u and the 1219 to 1524 meter levels ascribed to the Maui Parrotbill. More significantly, this upward extension of range places both of these rare birds in a forest dominated by 'ohi'a rather than by koa. Conservation possibilities for both birds are therefore markedly increased since 'ohi'a is the dominant plant in the little-disturbed upper elevation forests of Haleakala's northeast slopes.

"Another endangered species, the Crested Honeycreeper (Palmeria dolei), and the rare Maui Creeper (Loxops maculata newtoni) were found in Kipahulu Valley by other members of the expedition as well as myself....

"The occurrence of four rare birds in Kipahulu Valley, one previously considered extinct, points up the importance of retaining this area in a natural condition if populations of these birds are to be preserved. In Hawaii, many unique birds found nowhere else in the world have become extinct because of land use practices and environmental changes brought about by civilization."

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GOOD NEWS! According to Dave Donnelly, HONOLULU STAR-BULLETIN, December 20, 1968, page A-4, "It looks like the long fight to preserve Maui's Valley of the Seven Sacred Pools has been won. We hear that Nature Conservancy, the group which has worked so diligently toward preserving the landmark, has just received pledges from Doris Duke and Mr. and Mrs. DeWitt Wallace of the Reader's Digest for $100,000 apiece, putting the fund-raising goal over the top."

On the same subject from National Audubon's CONSERVATION GUIDE, February 1,1969, "Secretary Udall may have failed in one of his attempts to see that he left behind as large a legacy of national parklands as possible. But a private project long in the works was completed the week before he left: an addition of 4,300 acres to Haleakala National Park in Hawaii.

"The land came from Laurance S. Rockefeller and the Nature Conservancy. Mr. Rockefeller gave land that he already owned and the Conservancy raised more than half a million dollars for purchase of the rest. It's all along the eastern slope of the dormant volcano of Haleakala on the island of Maui."

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Field Notes from Jack Throp, 10 February 1969: Java Ricebird

The slopes of Diamond Head hold a few surprises for bird watchers in Hawaii. Small colonies of exotic finches and weavers are becoming established. The latest to be reported is a breeding group of Java Ricebirds (Padda oryzivora) reported by Mrs. Rae A. Pagel of Diamond Head Road. About two years ago a Java Ricebird came to Mrs. Pagel's bird feeder which was maintained for the benefit of Cardinals, Linnets, and Sparrows. A few days later the single bird was joinedby nine or ten more. They have been feeding daily, at her home ever since. This year the adults nested, and the colony increased by several young. These few birds might represent a new species eventually to be seen elsewhere than at Mrs. Pagel's bird feeder.

CAGE BIRDS IN COLOR by G. Mandahl-Barth, page 113: Java Sparrow (Padda oryzivora) 5-5½ inches

This bird is common in southeastern Asia from the Malay Peninsula to Java. It appears to have been originally a native of Malacca, Sumatra and Java, but has been introduced elsewhere including Zanzibar, Pemba Island, the coastal area of Tanganyika and the Seychelles.

Ricebird and Paddybird are alternative names and bestowed because of its rice-eating habits. It feeds on a variety of seeds including, of course, cultivated grains. It is a colonial nester, building a domed nest of grasses in a tree, in bushes or under the eaves of buildings, four to seven white eggs being the clutch. The sexes are alike in plumage. The white form is said to breed more freely than the normally colored bird.

FINCHES AND SOFT-BILLED BIRDS by Bates and Busenbark, pages 186-190:

Java Ricebirds are often called munias, and they would normally be classed with the mannikin family. However, the general characteristics are greatly different.

Java Ricebirds are among the most readily available, hardiest, and most popular of all finches. Their low price and smooth velvety plumage are major factors for their popularity....In the United States the Java Ricebird as a caged household pet is perhaps exceeded in number only by Budgerigars and Canaries....Most of the beauty of the Ricebird stems from the smoothness and sharp contrasts in coloring.

The overall size of the Java Ricebird is a heavy-bodied five and a half inches including the tail, which is slightly over an inch long.

The Gray Java Ricebird is the most attractive of the three color varieties. It is also the original, or wild type....The head is glossy black except for a large, very white cheek patch covering most of the facial area below the eye. A prominent, fleshy eye ring is red; and the huge beak shows a deep rose-pink concentration near the upper and lower bases which fades gradually to whitish at the tips. The feet and legs are also pinkish. The tail is black, and the undertail coverts are white. The body is gray. On the back, wings, and chest, the shading is a uniform soft slate-gray. The abdomen is buffish-gray fading to a whitish shade in the ventral area. The overall effect is one of smooth, uncluttered uniformity with pleasantly balanced contrasts. In good plumage, the Java Ricebird has a lovely sheen which cannot help but attract admiring glances.

The White Java Ricebird is completely white in a glowing, glossy sheen except for the rose, red, and pink found in the beak, eye ring, feet and legs....The White Java is a mutation which occurred in captivity. It is not an albino. Immature White Javas often show extensive areas of buffish-grays which later change to white upon maturation.

A third variety, the Calico, or Pied Java Ricebird, appears to be a mixture of the two previously described varieties. Pieds may be predominantly dark or predominantly light, but the most attractive is a nearly equal division of colors. Those leaning far to the basic gray pattern are usually unattractive because of the destruction of the beautiful and classic uniformity found in the Gray Java Ricebird. The Calico, or Pied Java Ricebird, is also the result of a mutation in captivity.

Immature Gray Java Ricrbirds are dull grayish with just a faint hint of rose in the beaks. Before they begin to acquire adult plumage, usually starting at four months of age, Ricebirds can be finger tamed in much the same manner as Budgerigars.

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If you have any information on this bird, please write to Kojima, 725-A 8th Avenue, Honolulu, Hawaii 96816.

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Field Trip to Honouliuli Trail, February 9, 1969:

Some thirty members and visitors enjoyed the February 9th outing to the Waianae Mountains to look for native birds. Group leaders decided on the Honouliuli Trail rather than the Palikea Trail because of the size of the group and the possibility of

danger along the cliff due to the recent rains. The choice was a good one as the forest was full of birds, although many more were heard than seen. I don't believe that I have ever heard so many 'elepaio and 'amakihi in one morning. A number of each were seen as were several 'apapane. House finches were particularly numerous; white-eyes and leiothrix were observed as well as both species of dove, both American and Brazilian cardinals. Mockingbirds in the kiawe during the approach to the trail completed the list. Some few members of the group got a bonus as a large wild pig broke across the trail in front of them and quickly disappeared in the underbrush.

Charles G. Kaigler

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Field Notes from Thelma A. McNett, 22 December 1968:

Memoirs of a delightful morning birding on December 22nd on a return trip to Hawaii: With the kindness of Unoyo Kojima who escorted us on a delightful birding trip we were again introduced to some of the birds of Hawaii.

Driving with precision and forethought Unoyo took us first to a spot we had never had the pleasure of visiting, the Munro Arboretum (Na Laau). Here on the mountain path one can spot easily the Brazilian Cardinal with its bright scarlet head and contrasting gray and white plumage. The American Cardinal which is always a joy to see and hear made itself known readily. Its song here in Hawaii is deceiving for it has quite a different variation. One male appeared to be exhibiting a mating antic and the question came up as to how often these birds nest throughout the year in Hawaii. In our locality in Webster, N.Y., we are sure they nest three times at least.

Although the exotic release finches eluded us on the trail, we heard what Unoyo pointed out to be a Waxbill song. Many White-eyes were visible, and Barred and Spotted Doves called from the trees. Ricebirds and House Finches chattered and a Mockingbird eyed us from his top-most perch. We were aware of the birds that could be found on this trail as THE ELEPAIO has had some very interesting articles about this area, but the spectacular view of Waikiki and the emerald Pacific was a special bonus. Unoyo also pointed out to us the many native plants and the African Land Snail and its welcome cannibalistic predator.

With regret we left the seclusion of the Arboretum and Unoyo's careful hands guided her car to Hickam Air Force Base where with special permission we were enabled to view some of the shore birds of the Islands. Black-necked Stilts gracefully drifted back and forth foraging for food and their wild call "Ae'o" could be heard. The Wandering Tattler or 'Ulili whose bell-like call I learned today was also spotted. Several Sanderling and Turnstones scurried along the beaches and Coot called from the marsh. Golden Plover were in evidence in this area as well as in the fields along the highway.

The Old Pali Road was our last stop of the morning and it seemed that the fates smiled upon us for we were able to view this lush tropical rain forest, a veritable paradise, with waterfalls, upside down falls and a scintillatingly clear reservoir under sunlit skies. All morning the bright Hawaiian sun shone and sparkled on the waters.

The birds of the Old Pali Road were quiet, but we shall return and hear the Thrush's song another day. ----

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Letters from Mr. & Mrs. Paul M. Scheffer, Vancouver, Washington, December 1968:

...We miss Hawaii the most during our cold, wet winter days. But today - we have two inches of fresh snow and there are lots of chickadees, juncos, fox sparrows, golden-crowned sparrows, and song sparrows at our feeder.

From Dr. & Mrs. Hubert Frings, Norman, Oklahoma, December 1968:

...Our thoughts are often with our friends of birds in Hawaii.

We have about 20 of the gorgeous blue jays regularly at our backyard feeders, along with purple finches, cardinals, chickadees, tufted titmice, and others. We now have a pair of Brazilian cardinals and a pair of leiothrix in large cages in our house. These, with a variety of tropical plants, keep us reminded of Hawaii,

in spite of our record-breaking cold weather.

Carl and Sheila are getting along well in their work. Sheila is studying wrens for her thesis; Carl is working on spiders....

From Mrs. Ethel Matheson, Washington, D.C., December 30, 1968:

...Looking out my window towards Rock Creek Park, it is sunny, and the bare trees are beautiful, and there is no snow on the ground. The other day it was very windy, and I watched a large number of turkey vultures coasting down wind over the park. It looked like fun. I must go to the Zoo and see the Kiwi birds from N.Z....

From Mrs. Mary Ellen Lindley, Kailua-Kona, Hawaii, January 6, 1969:

...We are at the 550' level just above kiawe country, where it is a little cooler and damper. We watch the ricebirds feeding on the tall grasses outside our kitchen window as we eat breakfast. They are our most common bird; the cardinal second. No English sparrows, but mynahs and white-eyes and linnets. Heard quail a few times....

From Janet E. Bell, Honolulu, January 20, 1969:

...I saw many birds but the Tue in Auckland was the most thrilling. Lots of hawks in the interior flying above the fields of South Island....

From Mrs. Charles G. Kaigler, visiting Escondido, California, 13 January 1969:

...The most spectacular sight was probably a field near Tucson with thousands of blackbirds--the yellow headed, Brewers', red-winged and brown-headed cowbird. It was on our way to Madera Canyon where we had a most lovely day full of new discoveries... so many different kinds of woodpeckers and wrens, Mexican jay and the brown creeper that had black lines...a Mexican sub-species, and the painted redstart was probably the most beautiful bird.

Previous to our trip through the desert we spent several days coming down the coast of California and found the number and variety of shore and seabirds simply overwhelming....We drove back to Escondido, where we will be staying...Every morning brings the songs of meadowlarks and mockingbirds right outside our window and the first invasion by the cedar waxwings in the surrounding berry bushes takes place. The mockingbirds in residence put up a good defense, but the huge flocks of the waxwings succeeded in getting a great many of the berries before they were driven off.

There are hills and orchards all a round us, and we have counted 28 species, including a beautiful white-tailed kite, within 5 minutes' walking distance from our place.

I didn't realize that the Anna's hummingbird was permanent in this part of the country and was thrilled to find it. When we hung up a feeder they found it the same day, and we now have another battlefield--a brilliantly colored male has taken over, sits in a bush right next to the feeder and drives all the others away. He gets terribly frustrated when the house finches consider it their feeder! I never knew finches were nectar eaters.

Escondido is only 15 miles from the ocean, and there are two conservation areas with thousands of birds. Every time we go there, we find something new--got about 175 species in those last four weeks!

From Mr. & Mrs. Joseph E. McNett, Webster, N. Y., 19 January 1969:

...It has been cold and wintery here and most of our birding has been done from the kitchen window. We have a nice viewing window with corner picture windows looking out into our backyard. The yard is closely shrubbed and a haven for the wintering birds. At this writing we have as regular winter visitors at our several feeders: about 30 Evening Grosbeaks, 20 Goldfinches, 20 Cardinals, 10 Sparrow, a nice little flock of Black-capped Chickadees, Doves, White-breasted Nuthatches, one cute little Red-breasted Nuthatch, Titmice, Downy, Hairy, and Red-bellied Woodpeckers, a few English Sparrows, and now and then a Starling.

Across the road on the Lake Front there are many wintering ducks such as Golden-eye, Old Squaw, White-winged Scoters, Bufflehead, Mergansers, and now and then a stray visitors such as an Eider....

We missed a cold, cold Winter Census here. They did not get many species

because of an ice storm the day before Census Day which was the 29th of December. The Club total was 68 or 69 while we have at times on mild Christmas Census Days had as high as 88 species in our radius.

...During our stay in Kauai we had rain on New Year's day and cloud cover on the day of our departure. We did drive over to the Lighthouse area and were surprised not to see many Boobies. One or two immatures were observed and a White-tailed tropicbird soared for us. The other sea birds were not there. We had seen a large colony of the Boobies in the summer when we were there in 1963.

We hope that Kanaha Wildlife Refuge in Maui will remain as a Sanctuary for the beautiful Hawaiian Stilt and other species that are found there....

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Excerpts from the minutes of the general meeting of the Hawaii Audubon Society, December 16, 1968:...The treasurer's annual report was presented by Bill Prange. The report on the Society's book, HAWAII'S BIRDS was presented by Robert Pyle. The nominated slate of officers was presented...and they were elected by a vote of members present. A detailed account of the Christmas Count to be held on Sunday, December 29, 1968, was given by Robert Pyle, Chairman.

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ALOHA to new members:

Jerome S.W. Marr, 1515 Dominis St, Apt 203, Honolulu, Hawaii 96822
Barbara Rae, 3466 S. Main St, Akron, Michigan 48701
John Salyer, 2426 Oahu Ave, Honolulu, Hawaii 96822
Robert Shallenberger, c/o Zool Dept, UCLA, 405 Hilgard Ave, Los Angeles, Cal 90024
Larry Stiver, 1519 A-2 Wilder Ave, Honolulu, Hawaii 96822
Allen Trubitt, 2703 Terrace Drive, Honolulu, Hawaii 96822
Thomas G. Vaughan, Route 1, Box 167, Captain Cook, Hawaii 96704
Dr. G. C. Whittow, 1704 Anapuni St, Honolulu, Hawaii 96822
James R. Wolf, 6329 Marchand St, Pittsburgh, Pa. 15206

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HAWAII'S BIRDS, a field guide, available for $2.00. Send in your orders to: Book Order Committee, Hawaii Audubon Society, P.O. Box 5032, Honolulu, Hawaii 96814.

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MARCH ACTIVITIES:

March 9 - Field trip to study shore birds. Bring lunch, water, and if possible your car. Transportation cost ($1.00) to be paid to the drivers. Meet at the Library of Hawaii at 8:00 a.m.
March 10 - Board meeting at the Zoo entrance bldg at 7:30 p.m. Members welcome.
March 17 - General meeting at the Waikiki Aquarium Auditorium at 7:30 p.m.
Speaker: Dr. Charles H. Lamoureux
Topic: The Natural History Course at the University of Hawaii.

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DUES: Regular-$3.00 per annum, Regular out of State-$2.00 per annum, Junior (18 years and under)-$1.00 per annum, Organization-$2.00 per annum, Life-$50.00

DUES FOR 1969 ARE NOW PAYABLE

Members whose dues have not been paid by March 31st will be dropped from the membership roll and THE ELEPAIO mailing list.