THE ELEPAIO

Journal of the Hawaii Audubon Society

For the Better Protection of Wildlife in Hawaii

VOLUME 35, NUMBER 1 JULY 1974

RECENTLY EXTINCT FLIGHTLESS BIRDS DISCOVERED ON MAUI

The partially fossilized bones of a recently extinct flightless ibis have been found in a lava cave on the Island of Maui. Ibises are long-legged wading birds related to herons. The discovery of this bird on an oceanic island is especially significant, because all other ibises have functional wings and are restricted to the continental tropics. This, the world's first flightless ibis, was discovered by Wayne Gagne and Frank Howarth of the Hawaii International Biological Program (IBP) at the Bishop Museum (Honolulu), and Betsy Harrison of the Hana Rain Forest Project at the University of Hawaii. The Hawaii IBP (Island Ecosystems Integrated Research Program, a part of the U.S. International Biological Program) and the Hana Rain Forest Project (a Student Originated Studies Program) are both funded by the National Science Foundation.

The bones of one or possibly two species of flightless rails were found with the ibis. The rail remains are also an important find as they are the first record of rails on the Island of Maui. Flightless rails were widespread on oceanic islands, and existed in historical times on the islands of Hawaii and Laysan, and possibly on Oahu and Molokai, in the Hawaiian Chain.

Dr. Alexander Wetmore of the Smithsonian Institution recently confirmed the initial identification of the ibis made by Bishop Museum zoologist Dr. Alan Ziegler. According to Wetmore, enough of the skeleton was recovered to verify that the bird was flightless. He and his associates will prepare the technical description of the bird.

The ecosystems projects that led to the discoveries are conducting basic terrestrial ecological research in the Hawaiian Archipelago. This new find points out the importance of the unexpected in these projects. For example, the Hana Rain Forest Project revealed a new species of living Hawaiian honeycreeper last year, the first new living land bird to be recognized in Hawaii in over 80 years. Earlier, University of Hawaii scientists with the IBP found a new species of native legume vine (described by Dr. Harold St. John of the Bishop Museum), which appeared in an exclosure built to examine the effect of introduced goats on a Hawaiian ecosystem.

The remains of the ibis appear to be very recent. Perhaps it was reduced to very low numbers by the colonizing Polynesians and the animals they introduced (pigs, rats, etc.). Then, the remnant population could have been quickly exterminated early in the 19th century, by a combination of new exotic influences following the advent of Western man.

The extermination of the well-known Dodo on Mauritius over 200 years ago signalled the acceleration of extinction of species of flightless birds on islands around the world. Beginning in prehistory with the enormous elephant birds of Madagascar and the mighty moas of New Zealand and continuing up to the present with the pint-sized Laysan Rail in the Hawaiian Archipelago in 1944, numerous species have vanished before the onslaught of man.

This significant discovery illustrates again the extreme fragility of the biota of oceanic islands. It is urgent that more attention be given to the careful conservation of what is left of the singular native environment of the Hawaiian Islands now besieged by a multitude of human influences.

Press release to University of Hawaii & National Science Foundation, Washington,D.C., / 20 May 1974.

HONOLULU STAR-BULLETIN, 30 May 1974, page B-7: First Flightless Ibis Fossil Found on Maui by Helen Altonn

The fossil remains of four, and possibly seven, species of birds which were not known to exist in Hawaii have been uncovered in a series of discoveries on Maui and Molokai. They include the bones of three flightless birds, among them an ibis--"an incredible find," said a Bishop Museum scientist.

It's the world's first flightless ibis, a long-legged wading bird related to the heron, and the first member of the ibis family found in Hawaii. The ibis bones were in a lava tube on Maui with the remains of a small, sparrow-size, flightless rail and the bones of another bird which may be a larger rail.

This is the first time rails have been known on Maui, although flightless rails were widespread on oceanic islands and in historical times inhabited the Big Island and Laysan in the Hawaiian chain.

The Molokai sand dunes yielded the remains of a flightless goose, a long-legged owl (not the Hawaiian pueo), a crow-like bird and an eagle-size hawk, among other individuals.

The fossil discoveries began two years ago when Mrs. Joan Aidem of Molokai was beach combing and found the fossil goose skeleton. She took it to Alan Ziegler, Bishop Museum vertebrate zoologist, who sent it to the Smithsonian Institution for positive identification. Ziegler said radio-carbon dating of shells just a foot below the goose in the sand put the death of the goose at about 25,000 years ago. "But it doesn't mean the bird became extinct then, or just existed then," he pointed out. ...

At about the same time, in 1972, Museum entomologists Francis G. Howarth and Wayne Gagne were on Maui doing research for the Hawaii International Biological Program.

John Hanchett of Hana Ranch and Jack Lind of Kipahulu Ranch took them to the lava cave containing the bones. ...

Howarth said in an interview that the bones "turned out to be a rail, and rails weren't recorded from Maui. This one was between the size of the Hawaiian gallinule and flightless rails known on Big Island and Laysan, so this one probably is new."

Because the bones were extremely fragile--some turn to dust when handled--the scientists gathered only the sturdiest ones. Gagne and Betsy Harrison of the University of Hawaii Hana Rain Forest Project went back two months ago and carefully picked up what they thought was the rest of the rail skeleton.

"Apparently they didn't get any of the original skeleton," Howarth said. "They got the bones of three other birds--an ibis, a very small flightless rail almost the size of the Laysan rail, sparrow-size, and possibly another individual of the larger rail." ... "The ibis was an incredible find, because it is not very well represented on oceanic islands and no flightless ones are known. The sternum has almost no keel at all...and to have an ibis without a keel is really strange."

Howarth said it's puzzling why the bird bones were preserved in the lava cave. "It appears that there was a skylight, although there is no longer an entrance, where the bones were found. So it was a pitfall trap. Why the skylight is now covered over and why the bones are preserved on the floor, I don't know," he said. "These two questions may lead to other sites to look for bones, because bones don't survive very long."

He said the find "indicates something different in the chemistry of that lava which is not so detrimental to bones, or that these bones are extremely recent. This cave is wet and some of the bones are still fairly well intact."

Ziegler tentatively identified the bones, which Howarth commented, "was no mean feat." Then he sent them to Alexander Wetmore, international authority on avian fossils, at the Smithsonian Institution. Ziegler told Wetmore that one of the skeletons appeared to be a flightless ibis. "However, this rather way-out conclusion of mine obviously needs checking with you," he said. Wetmore not only confirmed the identification--calling the ibis "truly a marvelous find"--but noted that earlier fossil material from Molokai contained a small fragment of a bill that he and his associate, Storrs Olson, decided must also have come from an ibis.

Wetmore did research in Hawaii in the 1920's. He discovered and described the Nihoa miller bird. "So he's familiar with Hawaiian ornithology and the grand old man of ornithology," said Howarth. ...

On Molokai, Ziegler said, "I don't think we're hitting the early stuff at all. I think it's buried under the sand. We've just started to scratch the surface in fossil

avifauna, or extinct avifauna, or Hawaii."

He said the discoveries raise some fascinating questions for research, particularly about flightless birds and their ecosystem. "How did they function in the ecosystem? What was the predator on them?" he asked, speculating: "Maybe it was the owl...It looks something like the introduced barn owl, but it is not, and it's not the Hawaiian pueo. It may have been a predator on local birds here. The pueo eats mostly insects, as does the barnyard owl."

Howarth said evidence shows that flightless bird species generally are found on oceanic islands where there are no mammal predators. It's theorized that they could have become flightless through generations of breeding in a process of adaptation to their environment.

Until now, Hawaii hasn't had a fossil avifauna to attract a paleontologist, Howarth said. "But I think the ibis will be a calling card..."

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HONOLULU ADVERTISER, 21 May 1974, page A-3: The Flightless Ibis of Maui Opens up a New Chapter in Isles' Natural History by Bruce Benson

Two recent discoveries of extinct birds have raised the possibility that an untold chapter in the natural history of Hawaii lies waiting to be read at the bottom of particular kinds of lava tubes. ...

By serendipity, two associates in entomology at the Bishop Museum have come across the bones of an ibis. The ibis is a medium-sized bird of the tropics. One species possessed religious significance for ancient Egyptians.

The find of the entomologists has raised the eyebrows of eminent zoologists...but what has raised eyebrows into wide-eyed astonishment is that the ibis found in a lava tube on Maui was evidently flightless. It marks the first time that flightlessness has been attributed to any species of ibis anywhere in the world. ...

The lava tube treasure trove raises the question of whether the bones of more extinct species are waiting to be discovered throughout the State, as if on file in storage sheds of nature. ...

From the Molokai and Maui sites have emerged at least four, and possibly seven new species of extinct birds, all of whose existence in the remote past was never suspected until their bones turned up.

"We apparently have a fantastic avifauna record in Hawaii that we're just learning about," Ziegler said. "From the two sites we now definitely have found the flightless Molokai goose and Molokai owl, plus the flightless Maui rail and flightless Maui Ibis." But what significance can there be in knowing that three of four confirmed new species in Hawaii were flightless?

A possible answer is that the phenomenon of neoteny is at work in bird species that arrive at benign island ecosystems. Neoteny is the retention of juvenile characteristics in an adult. The theory of neoteny derives from the work of Storrs L. Olson, a Wetmore associate. Olson is a student of flightless rails on South Atlantic islands. He suggests that birds with limited breast and wing development would likely fail to survive on a continent rife with ground predators as rats or pigs or mongooses; flightless birds may be at some advantage over their flighted brethren. The grounded cousins might possess additional energy derived from not having to develop the muscles and wings for flight. ... Birds with stunted breast and wing development perhaps were more swift in their ground movements. ...In the absence of predators, birds retaining juvenile characteristics in the wings, but showing adult traits otherwise, could find themselves naturally selected to survive. Through breeding among themselves they could achieve a flightless species within a matter of generations, instead of the millenia normally associated with evolutionary traits.

As for the lava tubes, the Bishop Museum scientists believe that tubes with skylight openings might be logical repositories for still other undiscovered flightless species. If such a bird fell in, it would be unable to flutter back out. It is a hot concept, and bound to attract national interest, Ziegler said.

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Letter from Dr. Alexander Wetmore, Smithsonian Institution, 8 May 1974: The large parcel that came to me by airmail recently was definitely a surprise to me. ...In the last lot of fossil material there was a small fragment of a bill that after some consideration

Storrs Olson and I decided must have come from an ibis, an interesting matter since there are no records from your localities. The material that you send now has enough of the rest of the skeleton to verify the identification and also to indicate the highly interesting point that, like the goose, the bird was evidently flightless. The tiny keel on the sternum certainly did not support any strong wing muscles. While some members of the ibis family have not been particularly strong on the wing, so far as I recall this is the very first one to join the specialized flightless group of species of birds--truly a marvelous find! ...

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VISIT TO KALAUPAPA, MOLOKAI

By George-Ann Davis

During the weekend of the full moon, 7-10 March 1974, a group of naturalists surveyed the Kalaupapa Peninsula on Molokai, looking for evidence of native plants and animals. Each of us had a special interest: Frank and Nancy Howarth (lava tube fauna), Wayne Gagne (insects), Betsy Harrison (plants), George-Ann Davis (birds).

We flew in on the morning of 7 March and were shown to our quarters in the guest cottages of the leper settlement. Kalaupapa is a very tranquil Hawaiian town of about 100 people--all of whom seem to have cars which are in frequent use. (Even though the peninsula has an area of only 10 square miles.) Richard Marks gave us a royal tour of the entire peninsula--up to the Crater Kauhako, over to Kalawao, site of the original settlement where Father Damien worked, and along the coast up to the lighthouse and airstrip.

Richard showed us an amazing sea cave, buffeted by high winds and surging surf. White-capped Noddy Terns dived in and out of the shelter, striving for equilibrium in the turbulent air and sea.

Other birds, too, seemed to be having difficulties in the unusually strong winds (more than 30 mph). White-tailed Tropicbirds struggled to make headway in their flights across the peninsula. Even the wind birds, the golden plovers and ruddy turnstones, stayed close to ground in the cattle-grazed fields. Flocks of House Finches grasped footholds in the ironwoods and continued singing.

In Kalaupapa itself, the combined cover of gardens and trees cut the wind's force and Mynahs, Barred and Spotted Doves, Kentucky and Red-crested Cardinals and English Sparrows foraged as usual.

Some of us spent the next two days up "topside," visiting Moomomi Dunes, Makalelau Ridge and fishponds near Kaunakakai. We listened appreciatively to the aerial songs of the Skylarks at Hoolehua airport and watched the Black-crowned Night Herons stalk fish in shallow fishponds now hardened by exotic mangroves.

Many gamebirds have been introduced to Molokai, and several, such as the Black Francolin, Grey Francolin, Chukar, and Ring-necked Pheasant are well-established. We heard them almost constantly, calling from kiawe thickets and occasionally flushed them.

Down in Kalaupapa, though, there are relatively few of these birds. I talked to Elmer Wilson, Mayor of Kalaupapa. He said they used to be numerous and easily hunted with dogs, but now the birds get trapped in lantana and are easy prey for mongoose.

We hiked down the pali in our return to Kalaupapa and were dismayed at the dense growth of Christmasberry, which shut us off from a one-time splendid view.

On our last day we explored Kauhako Crater whose volcanic activity formed the peninsula. Since it is difficult for cattle to get into the crater, it is a refuge for native dry land plants. We discovered a 20' deep pit which opened into a lava tube and spent several hours exploring it for cave-dwelling creatures. Evidently Hawaiians had spent time around this pit since some of their most useful plants--noni, kukui, breadfruit, papaya--grew in and around it.

Engrossed in our findings, we barely made it to the plane for our flight back to Honolulu, amidst promises to return to the heavenly peace of Kalaupapa.

Birds seen at Kalaupapa peninsula: White-tailed Tropicbird, Black Francolin, Golden Plover, Ruddy Turnstone, Wandering Tattler, White-capped Noddy, Spotted Dove, Barred Dove, Rock Dove, Common Mynah, White-eye, Ricebird, House Sparrow, Kentucky Cardinal, Red-crested Cardinal, House Finch; at "Topside": White-tailed Tropicbird, Great Frigatebird, Black-crowned Night Heron, Ring-necked Pheasant, Black Francolin, Grey Francolin, Chukar, Golden Plover, Wandering Tattler, Sanderling, Spotted Dove, Barred Dove, Rock Dove, Skylark,

Mockingbird, Common Mynah, White-eye, House Sparrow, Kentucky Cardinal, Red-crested Cardinal and House Finch.

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UNUSUAL USES OF RICEBIRD'S NESTS IN HAWAII

By Charles van Riper, III

The ricebird (Lonchura punctulata) is a common introduced bird found throughout the state in lowland areas and the open higher forests. The bird builds a domed nest of grasses, often times as large as a football; the nest is usually situated in an outer fork of a tree. As the nest is a fairly sizeable structure, it is well suited for use by other animals.

On 11 December 1970, while in the Waiaka gulch at the southwestern base of the Kohala Mountains, I found a ricebird's nest 10 feet high in the outer fork of a Christmasberry (Schinus terebinthifolius) tree. When I peered into the nest, a white-eye (Zosterops japonicus) flew from the opening; a closer inspection revealed three white-eye's eggs inside. Apparently the white-eye had "taken over" after the ricebird had left as the outer rim of the entrance was fouled with dried fecal material. Guest (1973, Island Ecosystems, I.R.P. Technical Report No. 29), in her recent study of the white-eye, makes no mention of having found the bird utilizing the nest of another species.

Higher in the same gulch, on 23 February 1971, I found a ricebird's nest that had been usurped by a family of rats (Rattus rattus). As I climbed the 'ohi'a (Metrosideros collina var. polymorpha) tree to examine the nest, an adult rat ran from the entrance leaving six young inside. The opening to the nest had been slightly enlarged, but otherwise the structure was unchanged. I had no way of knowing whether the rats took over before or after the ricebirds had finished their breeding cycle.

On five other occasions I have found rats utilizing ricebird's nests; once at Puu Waawaa (on Hualalai) and four separate occasions on the northwestern slope of Mauna Kea. In each case the nest had been collapsed, and the rats were using the flattened structure. There were numerous rat pellets on top of each platform. On Mauna Kea these structures were found from 6,300± feet to as high as 7,600± feet elevation.

The usual clutch size of the ricebird is three to six eggs (Berger, Andrew J. 1972. HAWAIIAN BIRDLIFE. University Press, Honolulu, Hawaii). In early June 1971, while in the upper Waiakoali Stream on Kauai, I found a ricebird's nest 16 feet high in an 'ohi'a, and as a bird was inside, I was surprised to find a total of 12 eggs in the nest. The nest might possibly have been used by the same bird for many clutches, or by a number of birds each laying a single clutch. Whatever the use, it appears that the nest of the ricebird, because of its large size and often secure placement, is a preferred nesting structure for a number of animals in Hawaii.

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BIRDING ON MAUI AND LANAI

By Erika Wilson

On 11 May 1974 I did some casual birding on Maui, mostly along the Lahaina and Hana coasts and in the Haleakala National Park. I saw the following 15 species: Ring-necked Pheasant, Chukar, White-capped Noddy, Spotted Dove, Barred Dove, Skylark, Mockingbird, Common Mynah, Japanese White-eye, 'Amakihi, 'Apapane, 'I'iwi, House Sparrow, North Am. Cardinal, and House Finch. The Mockingbird was at 8,500 feet elevation on Haleakala which is 5,500 feet higher than its listed range in HAWAII'S BIRDS (p. 48).

The next day, 12 May 1974, I sailed from Lahaina to Lanai on the TRILOGY. While on the island I saw seven species: Red-tailed Tropicbird, Wandering Tattler, White-capped Noddy, Barred Dove, Common Mynah, House Sparrow, and North Am. Cardinal. There were six Red-tailed Tropicbirds wheeling and screaming over the port at Manele Bay and along the face of the cliffs. The White-capped Noddy was quite a delight to watch as it flew along the rocky shore within 6 feet of us, passing back and forth searching for food. The Wandering Tattler flew low along the rocks, landed briefly, and then flew off again.

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Plover Watching from Barbara Macaulay, 15 April 1974: Plovers can still be seen in Kapiolani Park. Some have attained full breeding plumage with the black breast and belly outlined in white; others are just beginning to change. I wonder if the difference is

due to the Plovers age? Or is it a male-female difference?

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Field Notes from Barbara Macaulay: Pintailed Whydah in Kapiolani Park

On 7 April 1974 I was surprised to see a flock of some ten or twelve small, brown-striped, finch-like birds feeding on grass seeds just behind the Natatorium in Kapiolani Park. The outstanding characteristic of the birds which immediately attracted my attention was their orange bills. The birds which were distinctly smaller than the sparrows with whom they were feeding had beige-gray breasts and underparts, the wings, back and head were striped with short broken stripes of brown. There was an eye stripe of brown and a short stripe of orange leading up from the bill on the forehead. They had an undulating flight. An adult bird with the same bright orange bill was feeding with what seemed to be the flock of immature birds. The adult plumage was a pearl-gray breast; black head, back and wings; the wings streaked with gray. The adult had a white collar and bib and the sort of white ear patches characteristic of the Java sparrow. The adult's tail was longer than that of the immature birds and seemed sparse.

Since I could not identify the birds, I told Dr. Berger about them. He came down to Kapiolani Park several times to see them. On 21 April we saw a flock of 12 of the immature birds again feeding behind the Natatorium and after some waiting we saw one adult bird. Dr. Berger has identified the birds as the Pintailed whydah.

The tail of the one adult male we saw was shorter than might be expected and Dr. Berger felt it might have lost its tail. Dr. Berger stressed the necessity of seeing an adult male bird before identification could be reliably made. He felt some of the flock which seemed to be immature birds might be females instead.

One Pintailed whydah was reported in the Audubon Society Christmas bird count in the Kapiolani Park area and Erika Wilson reported seeing another as of 17 February.

The Pintailed whydah is a native of Africa often sold in pet shops. The parents of the current flock must be assumed to be escapees or unauthorized releases. The birds are now beginning to resemble the adult and seem to roost in the large tree near the World War I memorial behind the Natatorium at night. They are still feeding on grass seeds behind the Natatorium.

This is the first time the Pintailed Whydah has been reported breeding here.

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Shearwater Nesting at Black Point

Mrs. Godden informed me that the shearwaters are nesting on a rocky promontory near Black Point. Dr. Berger, Mr. and Mrs. Godden, and I visited the site on 21 April. The Black Point Association has access by a private road to a rocky promotory where Mrs. Cutting reported that the shearwaters have been nesting. We saw no birds present on the day we visited the site. Dr. Berger said the adult birds would not be nesting yet but would be courting. The birds must be assumed to be out at sea fishing during the day.

Mrs. Cutting reported the birds could be heard moaning in holes in the ground at night. We hope to visit the site in another two or three weeks when the birds are actually nesting. Dr. Berger was interested, as this is the first report of the shearwaters nesting on the mainland of Oahu, although they are known to nest on the offshore islands, such as Moku Manu and Manana. We hope to arrange a visit for interested Audubon members to photograph the nesting birds.

Mrs. Cutting reported both cats and dogs are predators of the nesting shearwaters and last year a large number of dead young were taken to the Zoo.

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Field Trip to Na Laau Arboretum, 21 April 1974 by Barbara Macaulay

Because of adverse weather conditions the trip which had been scheduled for the Poamoho Trail was cancelled and the group went to Na Laau Arboretum. Eight people participated despite the intermittent rain. Led by Erika Wilson we were rewarded in seeing orange-cheeked waxbills and red-eared waxbills at the beginning of the trail. On reaching the cactus and succulent area of the gulch on the trail we saw lavender finches with their burgundy rumps, and cordon bleu. In addition we saw Japanese white-eyes, cardinals, red-crested cardinals, house finches, sparrows, barred doves, spotted doves, and common mynahs.

On returning to Kapiolani Park we saw two bright yellow saffron male finches and a number of Java sparrows near the archery range.

Field Trip to Diamond Head Area, 21 April 1974 by Erika Wilson

Despite light rains, eight people gathered for the April 21st field trip. Originally we had planned to go to Poamoho, but heavy rains during the preceding week meant that the road would be impassable and the trail difficult to navigate. We decided the Diamond Head area would be the driest birding area, and drove to Kapiolani Park, leaving our cars near the tennis courts. While walking through the park the group spotted several pairs of Golden Plover scattered on the grassy areas; Barbara Macaulay noted that one bird of each pair was less advanced in its moult than its companion. We speculated that a sexual or age difference might account for one bird being in full breeding plumage and the other only showing mixed black feathers on the breast.

A home on La Pietra Circle, which overlooks the archery range, has a feeder at which we saw Java Sparrows, House Sparrows, and House Finches. We saw Spotted Doves, Barred Doves, Common Mynahs, Japanese White-eyes, Red-crested Cardinals, North American Cardinals, and several Green Singing Finches in the nearby trees and bushes. Some of the Red-crested Cardinals were juveniles with rusty-brown crests; they were continually giving begging calls to their nearby parents.

A sudden shower forced us to take cover under the banyans and ironwoods at the edge of the park. After the rain passed, we walked up to Na Laau Arboretum. Mr. Beck, who was at the rear of our group, saw an Indian Hill Mynah in the residential area between the park and the arboretum.

Just inside the arboretum entrance were numerous Spotted Dove, groups of lisping Ricebirds, and twittering Japanese White-eyes. We soon spotted a small group of Orange-cheeked Waxbills feeding in the undergrowth along a chain-link fence. We kept listening for the Mockingbirds which frequent the area, but our efforts went unrewarded. Several times we thought we heard one, but it never showed itself in its usual brazen fashion.

Near the end of the trail we came upon a group of exotic finches, including the striking Lavender Finches, Cordon Bleus, Red-eared Waxbills, and Orange-cheeked Waxbills. They were in an area dense with Euphorbia and Kiawe; we were able to get quite close, as the birds didn't become alarmed by our presence.

We walked back through Kapiolani Park toward the Natatorium, hoping to see some birds Barbara Macaulay had earlier been unable to identify, but they weren't out. However, we added the Rock Dove to our list, and then two brilliant Saffron Finches feeding with Red-crested Cardinals on the grass. We saw a total of 19 species during our morning walk.

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LIFE OF THE LAND, May 1974, page 1: ...You Lose One

On April 22, the Supreme Court of the United States denied our petition for certiorari on the Reef Runway case, thereby letting stand the 9th Circuit's decision to let the runway be built. Their refusal to consider our case in effect leaves unchallenged the question of whether a private contractor like Ralph M. Parsons, Inc. may prepare the environmental impact statement on a project in which it has a multi-million dollar interest. Apparently, Nixon's appointees to the Supreme Court see nothing wrong in this.

So Ralph M. Parsons and Dillingham have a fat contract for the Reef Runway. And the people of Honolulu will have a multi-million dollar runway that points directly at town. Some say that our suit was not worth the costly delay. But these costs are only in terms of dollars lost by one company. The real cost of the Reef Runway will be in terms of lives endangered and lifestyles affected.

We did our best in the courts, but lost. Michael Sherwood, our attorney in the suit and attorney Brook Hart gave an enormous amount of their time and energy. Raymond Catania, Abraham Pasadaba, Wilfred Paul and Pete Kaululaau Thompson, individual plaintiffs in the suit, had the courage to stick it out all the way at a time when most people were afraid to speak out. They walked where elected officials feared to tread.

There will undoubtedly be many more lawsuits in the future, and we will bring our share. For we cannot stand idly by, while irresponsible corporate and governmental interests sell out the people's rights to a livable environment. And we will not hesitate to take these lawsuits to the Supreme Court again and again--until that court recognizes our right to an environment in which we can all peacefully live.

HONOLULU STAR-BULLETIN, 18 May 1974, page A-10: New Habitats for Birds by Harry Whitten

Improvements are almost finished on two habitats for the endangered Hawaiian stilt (ae'o) along the shores of Pearl Harbor and the long-legged birds apparently are nesting

there already.

The habitats, being built at a cost of approximately $350,000, on Navy land, are to substitute for habitat lost as a result of the $68 million reef runway project.

The habitats are to offer safe nesting areas in ponds that have been used to a limited extent in past years by the birds. However, the ponds used to go dry occasionally; the habitats have pumping systems to assure a stable water supply.

The Ralph M. Parsons Co. will soon turn the habitats over to the State, which in turn will transfer them to the U.S. Bureau of Sport Fisheries and Wildlife for Administration.

Maurice Taylor of the Bureau said the habitats are expected to furnish feeding and resting areas also for the Pacific golden plover and turnstones and that coots and gallinules may move in. He counted 120 plover at the West Loch habitat recently but the plover have now departed for Alaska. He also said the stilt appeared to be nesting.

Recently I joined a Hawaii Audubon Society group in an inspection of the habitats, with Frank D. Bates, the Parsons Co. project engineer, as guide.

A 27-acre habitat is on Waiawa Peninsula, next to landfill areas makai of Pearl City. Two ponds here have been divided by a roadway, with seven islets constructed in one pond and four islets in the other. A high fence surrounds the habitat to keep out people, dogs and cats. The islets are to offer nesting areas safe from mongooses, which don't like water, although some birds are expected to take a chance and nest on the shore anyway.

Andrew J. Berger, zoologist and author of HAWAIIAN BIRDLIFE, commented that establishment of a safe breeding place will be the determining factor in the habitats' success, that food is no problem as there are enough small crustaceans for the stilt to feed on.

Besides stilt, many cattle egret were seen near the habitat.

The second habitat, of 44 acres, is near Honouliuli and is called West Loch or Salt Ponds, because it occupies former salt settling ponds. There are four ponds here, with 14 islets. Here also stilt buzzed or scolded, apparently trying to keep visitors away from their nests.

Some fish are in the ponds. Bates said Bermuda grass will be planted to prevent erosion and riprapping will be done next to West Loch to prevent wave damage.

The water supply comes from two wells, with floats in weirs at each pond to regulate the water. Because the stilt is a wading bird, the ponds are kept shallow. Palmer Sekora, the Bureau's local wildlife administrator, said some of the ponds will need some filling or regrading as they are a little too deep.

Additional stilt habitat will be furnished by small islands that the reef runway won't eliminate and by coral mounds being built on the mauka side of the runway.

Robert J. Shallenberger, a biologist, has raised the question as to whether more nesting areas could be furnished by having smaller islets in the habitat ponds. He says . he has observed stilt defend their territory, which means one pair of stilt would probably try to keep another pair off the islet it had chosen. He suggests experimentation to observe results with both larger and smaller islets.

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Excerpts from minutes of Hawaii Audubon Society general meeting, 18 March 1974 by Barbara Macaulay

...A letter was read from Charles van Riper, III, who is currently studying the breeding biology of the palila and 'amakihi on Mauna Kea, Big Island. He wrote to thank the Audubon Society for their support of this study. ...

Program: Dana Peterson of the Sierra Club led the program which featured slides showing the trail building activities of the Sierra Service Program. "Kawaikoi Stream, Wailau Valley, and Kahikinui Subalpine Scrubland Trail-building Service Trips" ... Roy Ihara and Lorin Gill described the program of trail building they had participated in with illustrated slides. The program which was only originated in 1971 takes about 30 young people 16-22 for ten days of trail building and exploring in areas which the Sierra Club selects in cooperation with the forestry service. The young people pay about half of their own expenses that is about $45 each. An additional $3200 needs to be raised this year to finance the trail service trips. The aim of the trail building trips is not only to make existings trails safer and build new trails but to combat exotic plants such as the blackberry which have taken over the native forests and are destroying trees. ...

15 April 1974: ...It was announced that Patricia Bloedon, recording secretary, has resigned and that Barbara Macaulay has offered to assume her duties as secretary. ...

Wayne Gagne reported on the status of bills before the State legislature: House Bill 2150 which the Audubon Society very much opposed was defeated. The proposal to put eels into fresh water streams was defeated. ...Barbara Macaulay reported on her activities with regard to the green turtle and the turtle meat being offered for sale at the Holiday Mart. She contacted Mr. Yee, the owner of the Holiday Mart and informed him that the green turtle is about to be placed on the endangered species list and that bills are before the State legislature to put a moratorium on the taking of green turtles except for home consumption in the Hawaiian waters. Mr. Yee explained that turtle meat is from British Bahamas, where the turtles are raised domestically. However, he promised that no turtle meat will be offered for sale by Holiday Mart in the future. Patricia Bloedon mentioned that the popularity of "Musk" perfume has become a serious threat to the musk deer which produce this ingredient and asked the members not to buy "Musk". ...Wayne Gagne reported on the revision of the Department of the Interior's regulations under the Lacey Act which would ban importation of exotic animals not found to be "low risk." ...Bob Shallenburger reported on the conflict between demands for a 65 acre shopping center on the windward side and for a Park in that area. The shopping center people have a very well done publicity stating that it is possible to have both a park and a shopping center... Program: Tonnie Casey showed color slides and spoke about her experiences in finding the world's newest bird* which she and James Jacobi found in the Hana Rain Forest last summer.

*The bird, a honeycreeper of a new genus, has been given the name of po'o-uli (black head), a name chosen in consultation with Mary Kawena Pukui, an authority on Hawaiian names. The scientific name has not yet been released.--Hon Star-Bull,13Apr1974,p.A-10: The New Bird by Harry Whitten

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KA 'ELELE, Vol.1, No.3(Mar 1974), p.9: Specimen of Maui Bird Discovery to Museum

Just when it seems that the world has unfastened its seat belt and is on a joy ride to its own ecological destruction, along comes the discovery on Maui of a new genus and species of bird in the Hawaiian honeycreeper family, Drepanididae. The news was announced locally on December 28, and a month later the type specimen was featured in an exhibit on honeycreepers prepared for temporary showing in Bishop Museum for Bishop Museum Week.

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Request for Nesting Information: Audubon members can add a great deal to our records of the nesting activities of both introduced and native species if they will call when they find a nest. Dr. Berger has agreed to coordinate the nest-record program. If you find a nest, please call him at the Department of Zoology, University of Hawaii, telephone 948-8655 or 948-8617. Mahalo Nui Loa for your interest and Kokua

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ALOHA to new members:

Junior - Robert J. O'Hara, 46 Dudley St, Fall River, Mass. 02720
Regular - Richard Holtkamp, 1468 Fremont Ave, St. Paul, Minn. 55106
Daniel Sprenger, 2718-F5 Waiaka Road, Honolulu, Hawaii 96814

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HAWAII'S BIRDS, a field guide, is available for $2.50 postpaid, AIRMAIL 65¢ extra. Send in orders to: Book Order Committee, Hawaii Audubon Society, PO Box 5032,Honolulu,HI 96814.

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JULY ACTIVITIES:

8 July - Board meeting at McCully-Moiliili Library, 6:45 p.m. Members welcome.
14 July - Field trip to Manoa Falls to study native forest birds. Bring lunch, water, and if possible your car. Transportation cost ($1.00) to be paid to the drivers. Meet at the State Library on Punchbowl Street at 8:00 a.m. Leader: Mrs. Erika Wilson, telephone 523-1843.

PLEASE NOTE: No general meeting for July.

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Revision of HAWAII'S BIRDS

The Board of Directors of the Hawaii Audubon Society has contracted with Dr. Robert J. Shallenberger to supervise a major revision of our field guide, HAWAII'S BIRDS. We expect to use up our existing inventory of books by the end of this year and would like our new edition to be ready at that time or soon after. This will be a cover-to-cover rewrite, incorporating the considerable amount of new information obtained in recent years. Major format changes are also under consideration. We have had over six years to put the book to use, and many worthwhile suggestions for reprinting have surfaced, but we need much more input from the membership. Any suggestions, no matter how seemingly insignificant, should be heard now, before the revision plans are stabilized. Use the attached comment form* to forward your suggestions, with additional sheets of paper if necessary.

We are investigating several different publishing and distribution companies for the revision, to improve the quality of the book and to increase the financial return to the HAS. Part of our plans include possible use of photographs in future products of the HAS: i.e. filmstrips, slide packages, educational flash cards, calendars, postcards, etc. With this in mind, we now solicit your help in this effort. Some of the transparencies used in the first edition of the book are not available now, but, on the other hand, many new photographs have been taken since the original printing. We are ready now to begin review of 35 mm color slides to be used in our new edition and/or future publications of the HAS. Internegatives and/or reproduction duplicates of selected slides will be made, and all original slides will be returned to each donating photographer. By contract, the Board of Directors of the HAS will retain the right to use each photo as it sees fit, but the original photographer's name will be cited with each use. The HAS is unable to pay for the use of these slides, but all of us will benefit in the production of a truly beautiful book. All necessary precautions will be taken to insure rapid and safe handling of these slides. Behavior and habitat often provide important information in identification of species, so we will not restrict ourselves to the static, lifeless poses that are characteristic of many field guides. Group shots, flight shots, adult and young shots---everything will be considered. Please make sure each transparency has your name on it. If you have no photos yourself, but know of individuals who might, please contact them and send us a current address.

We are also attempting to improve the value of the field guide in the identification of species by vocalizations. This may involve the use of sonagrams for some species, if we can round out our increasing collection of quality recordings of Hawaiian birds. If you have clear recordings of Hawaiian species, or know of individuals who do, please let us know soon.

To update the species information within the book we have been reviewing the published and unpublished data from recent investigations of Hawaiian birds. Yet, we are also sure that many of you can add to this increasing source of information from your own observations, particularly with regard to species distribution. We'd like to improve the section of the book devoted to field trip information, so let's have some input from all of you, especially from the outer islands.

The success of the revision is totally dependent on the contributions from our members: photographs, recordings, species data, suggestions and criticisms. The role of the HAS in conservation education in Hawaii is, in turn, dependent on returns from our book sales. All of our research grants and contributions to conservation programs have been funded from this source. So, please, do your part to make it all happen.

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* Format:

1. Preface (expanded introduction)
2. Organization of species in book
3. Species information (expand? reorganize?)
4. Photos (size, number, layout, type, plates)
5. Migratory and introduced species lists
6. Index
7. Bibliography
8. Field trip maps and information
9. Other?

Mail your comments as soon as possible to:

Book Revision
Hawaii Audubon Society
P.O. Box 5032
Honolulu, Hawaii 96814