

THE ELEPAIO

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HAWAII'S BIRDS IN THEIR HOMES: HOW TO SAVE THEM FROM EXTINCTION
By George C. Munro

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III. Relation of the Native Birds of the Hawaiian Forests

The native Hawaiian forest birds, though to a great extent honey suckers, were largely insect, grub and caterpillar feeders. It is likely that all or nearly all fed their young on insects and their larvae. This was evidently of great value to the water holding forests. Even the thrushes, though berry feeders, migrated to parts of the forest where there was an invasion of caterpillars and disappeared again when the invasion abated. This was surely evidence that they appreciated a caterpillar diet. The elepaio caught flying insects in the air and gathered caterpillars from the leaves and wood from the highest tree tops to the ground. The iiwi, apapane, amakihi, and anianianu gathered caterpillars from the leaves of the trees, the amakihi making a speciality of extracting pupae and larvae from folds in the half dried leaves. The oo, creepers, akialoa and nukupuu were adept at extracting insects from crevices in the bark of trees. Akepa with their curious crossed bills could collect their hidden prey from the folds of half opened buds. Pseudonester took a grub from the interior of the twigs of the koa.

When areas of ohia trees were flowering, the insectivorous as well as the honey eating species gathered in swarms as insects were attracted by the honey and pollen.

The flightless rail which frequented the open spaces in the forests was evidently like the Laysan rail a heavy caterpillar and insect feeder. The Hawaiian duck (koloa) resorted in numbers to the forest streams to moult as it was then incapable of flight. At that time it would feed to a great extent on insects on the ground and their larvae in the water. In Kona I shot ducks filled with earthworms gathered on grass land in the forest.

It is evident that the native birds when they swarmed in numbers were of great value in keeping in check insect pests detrimental to the forests. It is possible despite the introduction of foreign birds, that the diminution of the native birds had had something to do with the dying out of the forests over large areas. I have seen a forest on Molokai change in 30 years from an ohia forest to one of olapa, kapiko and such smaller trees. This of course, may be due to other causes.

As seed spreaders the native birds played a large part. The crows in Hawaii no doubt did their share of this. Thrushes of different islands were berry feeders. They swallowed the fruits whole and scattered the seeds over the forest. Perkins

found one with a fruit almost filling its stomach. He also saw amakihi "gorging on the berries of the poisonous Wikstroemia." The ou and other birds spread the seed of the ieie vine, a wonderful fill plant for the Hawaiian forests. It also spread the seed of the lobelias, especially the arborescent varieties which had large fruits. These the birds completely hollowed out. It also fed heavily on the ohia ai (mountain apple), but that did not affect the welfare of the forest in any way.

The palila, hopue and chloridops on the other hand would reduce the amount of seed available for reproduction of the forest. The palila fed mostly on the seed of the mamane, the hopue on the beans of the koa, and the chloridops on the germ of the seed of the naio. But these birds most likely fed their young on caterpillars and insects and therefore made up for the destruction of seed. Perkins found chloridops feeding on caterpillars at certain seasons. All I examined were filled with the little maggot-like germ of the naio seed.

Introduced birds may to some extent take the places of the native birds, but the balance of nature in the Hawaiian forests will never be regained in the way it prevailed in the past.

IV. Decrease of the Hawaiian Birds

The native birds of Hawaii, numbering 101 species, are now much reduced in numbers. Some were already extinct 55 years ago. A number are now in danger of extinction and others much reduced in numbers. We have evidence that originally the birds were in immense numbers. In the early morning of May 14, 1925, Andrew Bloxam, naturalist on the HMS Blonde when Lord Byron brought the bodies of King Liholiho and Queen Kamamalu to Honolulu from England in 1823, came up the Nuuanu Pali trail. He said in his diary it was "amid the chirping of small birds and the melodious notes of a brown thrush..." Mr. Bloxam collected specimens of the Oahu thrush, and he described and named it. The bird is now extinct, and there is not even a preserved specimen known to exist in any museum. Mr. Bloxam's specimens were lost or possibly may be in some museum under a wrong name.

An elderly, part Hawaiian lady, Mrs. William Meyer, Sr. of Molokai, recently told me stories of old Hawaii which her grandmother had told when she was a little girl. These events took place when the grandmother was a girl. This was probably 120 or 130 years ago, about the time perhaps before Mr. Bloxam's visit. One of these stories illustrates the number of birds that inhabited the forests at that time. The grandmother lived at Kailua. The boys of the village when on their way to Honolulu used to catch the birds with their hands from the bushes bordering the trail. The young unwary birds of some Hawaiian species were easily caught in this was as I have myself experienced. The birds were so numerous that as they caught them they tied them alive around their hats like a flower lei. There are few native birds near the Nuuanu Pali now.

The Walter Rothschild bird collecting expedition, to which I was attached, arrived in Honolulu in December, 1890. The birds of Oahu had even then been much reduced. Its thrush, oo, ou, nukupuu, were already extinct and others were almost so, and all but a few were rare. But when we collected on other islands in 1891 we found some of the representatives of birds rare or extinct on Oahu were very common there. On Kauai, Hawaii, Molokai and even on Lanai, some of these species were in large numbers. However, they in turn became reduced, and it is feared that some of them are now extinct.

At Halemanu, on Kauai, in 1891 we collected 12 species of native birds in the vicinity where one would be lucky to see three or four now. The thrush and oo awakened us in the early mornings with their lavish and beautiful singing. When I left

Kauai in 1899 some of the birds were still to be found not far from the edges of the forest. The thrushes could be heard singing there.

When I visited the Kauai forests in 1928, 1931, 1932, and 1936, no native bird but the elepaio could be seen for miles into the forest except at high elevations. Many reasons have been given for the destruction of the native birds. It was due to the inability of birds highly specialized in unique surroundings to adjust to changed conditions. I am sure that the principal one of these has been the introduction of new bird diseases and of the mosquito that carries them. The Hawaii National Park investigation has already found that the germs of one of these diseases is present in imported birds in the Park.

To be continued

THE DISAPPEARANCE OF ZOOLOGICAL SPECIES

By Jean-Paul Harroy

Editorial from the Bulletin of the International Union for the
Protection of Nature. Vol. IV, No. 2, P. 1, June 1955, Brussels

There is no doubt that Man has played a serious part on the extinction of certain species of animals. This perturbing state of affairs has been the result of excessive hunting for highly prized trophies and indiscriminate slaughter of animals that have opposed Man's interests. For instance, the Quagga *Equus (Hippotigris) quagga* Gmelin) exterminated by the Boers at the end of the nineteenth century, belongs to the first category, while the Cape Lion from the same district and also destroyed by the Boers, goes into the second.

These tragedies are by no means a thing of the past. With growing consternation naturalists come to realize that one animal species after another is becoming increasingly scarce. During the last five years the Union's Survival Service has undertaken the study of some mammals and has been trying, as far as it was possible from available data and from correspondence, to make a census of these "fossils of tomorrow." Thanks to a generous grant from the United States, I.U.P.N. has recently been able to start a more detailed survey, on-the-spot, of some of the most spectacular and gravely threatened of these animals. They include the Asiatic rhinoceroses, which have been badly exploited because of the remarkable sales value of their horns, and the Asiatic Lion - which at one time roamed through a widely scattered area, but is now confined to less than 500 square miles.

These losses, whether complete or in progress, are frequently caused by some disturbance of the species' habitat. One important reason for such disturbances is the encroachment that civilization constantly makes on vast stretches of savannah, on forests, and on steppes - for it must not be forgotten that the world population grows by twenty million each year - and this naturally affects species which formerly lived and multiplied under Man's protection.

Other factors too have contributed to these extinctions such as the introduction of exotic animals, which at first compete for existence with the natural fauna and then finally triumph over it. This has happened, for instance, in the Antilles where the importation of the Mongoose has led to the disappearance of the endemic species of birds. Moreover, L. Glauert (Perth, Australia) attributes the perturbing scarcity of the Australian banded ant-eater to the exploitation of the forests there; he claims that by progressively reducing the country's colonies of termites, the ant-eaters, once so common, have come to be deprived of their natural source of food.

HAWAII AUDUBON SOCIETY
Minutes for Meeting of August 15, 1955

The meeting was called to order in the Aquarium Auditorium by our president, Bob Pyle.

Minutes of the previous meeting were read and approved.

Mrs. Stoopes, the mother of our member, was the only visitor present.

A letter was read for Mrs. Helen Baldwin of Hilo thanking the Society for the check for postage.

A report of the Conservation Committee was made by Margaret Titcomb. At the committee meeting of August 18, Sister St. Lawrence talked of the work she is doing in preparing a series of textbooks on nature study to be used in the parochial schools. The first volume will soon be off the press. Margaret Titcomb said she hoped Mrs. Griggs of the DPI Audio-Visual Department would attend the next meeting of the committee to offer suggestions as to what we might do. She also said that ideas as to what the committee should explore would be welcomed.

Bob Pyle spoke of the questionnaire which was sent out to members along with the last Elepaio. So far 21 replies have been received. By fall he hopes to have some new committees set up.

As there was no further business, the formal meeting adjourned to be followed by the showing of slides or films of Audubon members, wherein birdlife appeared. Those showing slides were Miss Dorothea Cooper, Mr. Bryan, Mr. Stoopes and Margaret Titcomb.

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Minutes for Meeting of August 15, 1955
Respectfully submitted,
Secretary

The meeting was called to order in the Aquarium Auditorium by our president,
OCTOBER ACTIVITIES

FIELD TRIPS: October 9 - To Aiea loop trail. Meet in front of the Library of Hawaii at 8:00 a.m.

Mrs. Stoopes, the mother of our member, was the only visitor present.

October 23 - To Kahuku to observe shore birds. Meet in front of the Library of Hawaii at 8:00 a.m.

A letter was read for Mrs. Helen Baldwin of Hilo thanking the Society for the check for postage.

MEETING: October 17 - At the Aquarium at 7:30 p.m.

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HAWAII AUDUBON SOCIETY OFFICERS:

President: Mr. Robert L. Pyle
Vice-Pres: Miss Grace Gossard
Secretary: Miss Margaret Newman
Treasurer: Mrs. Blanche A. Pedley
Editor: Mrs. Priscilla G. Harpham

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DUES: Regular - \$2.00 per annum
Junior (18 years and under) - \$1.00 per annum
Life - \$50.00

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