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DISCOVERY OF THE NEST OF THE MAUI CREEPER

By Charles Van Riper III

The Creeper (Loxops maculata) is a member of the Hawaiian honeycreeper family (Drepanididae). Different races of this bird inhabit, or have inhabited, six of the major islands in the Hawaiian chain. Today it is common on Maui and Kauai and rare or extinct on the remaining four islands.

The Maui Creeper (L. m. newtoni) is a small bird, about four and one-half inches in length. It is greener above and pale yellow below, and has a fairly straight bill. This bird is found on the northeastern slope of Haleakala Crater, Maui, in the upper rain forests where 'ohi'a (Metrosideros collina) is the dominant tree.

Although this bird is fairly common in the above mentioned region of Maui, there appears to be no reference to its nest or nesting habits. Henshaw (1902) mentions that adult birds were commonly seen leading young about in June. All of the Maui Creepers in juvenile plumage at the Bernice P. Bishop Museum in Honolulu were collected during the month of June except for one young male obtained on February 24th. All other references to the nesting habits of this bird are confined to other islands.

On Kauai, Rothschild (1898-1900) mentions that Perkins shot a female Creeper with greatly enlarged ovaries on March fifth. During their stay on Kauai, Richardson and Bowles (1964) observed most of the Creepers in loose postbreeding flocks in the late summer months. They collected a Creeper in juvenile plumage on July 19.

During June, on the island of Molokai, Perkins observed a young male being fed, and another bird in down of the nestling stage (Munro, 1944). Bryan (1908) obtained three "fairly well identified" nests of the Molokai Creeper in 1907, but only one was an active nest. On April 30 he found an uncompleted nest with the bird still carrying nesting material. On May 27 and June 9 he found two nests that he assumed belonged to the Creeper. About the nest of May 27 he wrote: "It appeared to be just completed. It is made up of moss neatly woven together, and measures 4.00 inches in diameter by 2.75 inches deep. The interior is lined with the blackish root-like stems of dead moss and a few fibers from disintegrated 'Ie'ie leaves. The bowl is just over 2.00 inches across by 1.50 inches deep."

Munro (1944) found a nest on April 19 which he thought to be that of the Lanai Creeper. He writes of the nest: "I found a nest that had been blown out of a tree which I thought belonged to the Lanai Creeper. It was different from the other nests I had examined. It was a neat little ball built compactly of very fine grass stems and skeleton leaves alternately, 1.75 inches across the bowl, .75 inches deep, sides .5 thick." Munro also states that Perkins collected young birds on this island during July.

NEST OF THE MAUI CREEPER



The nest and eggs of the Oahu Creeper were described by W. A. Bryan (1905). The first nest was taken on January 29 and was not quite completed. On January 30 a nest with two eggs was found by Alvin Seale. Both nests were composed of roots and club moss, and were lined with fine rootlets and leaf skeletons.

There is, to my knowledge, no reference pertaining to the nesting of the Creeper on either Hawaii or Maui.

On March 14, 1971, I took a field trip into the upper Hana forest reserve behind Kipahulu valley. On this day I observed a female Creeper carrying nesting material. The bird remained in the immediate vicinity and was extremely easy to observe, but I was unable to observe or locate the nest she was building.

The following day I hiked into the area around Lake Wai Anapanapa. Here a pair of Creepers circled me, chirping excitedly as they flew from tree to tree. I have observed this kind of behavior often on Hawaii when the nesting territory of the 'Amakihi (*Loxops virens*) has been intruded upon. I searched in every tree and bush but could not find the nest.

As I was ascending the ridge towards Kipahulu Valley, I noticed a clump of moss lodged in the fork of an 'ohi'a tree, a common feature in this type of wet forest. As I drew closer to the tree, a female Creeper flew from the clump of moss. Upon closer inspection, I found it to be a well-camouflaged nest. The male, in the meantime returned, and both birds started circling the area giving the same excited chirps and warbles mentioned above.

The nest was situated in a fork of a lateral branch 14.5 feet from the ground and about eight feet from the top of the tree. The single upright trunk had a diameter of 16 inches. The nest was supported by five branches and a large twig of a limb one inch in diameter. The nest was composed of moss on the outside, neatly interwoven around the fork. Leaves and leaf skeletons of 'ohi'a were arranged around the base. The inside of the bowl was lined with unidentifiable fine plant fibers and pieces of dark rootlets. The construction of the bowl was unusual in that the fibers were arranged in a vertical fashion.

The overall shape of the nest was oblong, and it had a fairly deep bowl. It measured 11.7 centimeters from top to bottom, approximately 8.4 centimeters across the top, bulged to 9.5 centimeters through the middle, and tapered to a width of 2.9 at the bottom.

The bowl was fairly regular, averaging 3.8 centimeters across the top. The rim varied from 2.1 to 2.4 centimeters in thickness. The depth of the bowl extended 5.9 centimeters into the nest.

I returned to the area on subsequent days to observe the nest, but it appeared that the Creepers had abandoned it. Further work in the area was prohibited by inclement weather and a lack of time.

SUMMARY

The Creeper is a common resident of the rain forests on the outer, northeast slope of Haleakala Crater, Maui. I found the first nest of the Maui Creeper on March 15, 1971 near Lake Wai Anapanapa. Nests of the Creeper have been found on other islands during the months of January, April, May, and June. Data thus far obtained suggest a protracted nesting season, extending from January until late June.

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The following two HONOLULU ADVERTISER articles were sent in by Lucinda King:
14 March 1972, page B-2: 'pestiferous wildlife'--a sorghum-picking bird

Another battle between the ecologists and the economists may be shaping up in the Legislature....

A State Senate committee yesterday approved a bill appropriating \$25,000 for the State Department of Agriculture to control "pestiferous wildlife in the State."

"Pestiferous wildlife" in this case means seed-eating birds who stand accused of eating up the profits of the State's new sorghum industry.

A report by the Senate Committee on Ecology, Environment and Recreation says ricebirds and linnets caused a 30-to-50 per cent loss in the sorghum fields at Kilauea on Kauai last year.

On the Big Island, the Kohala Corporation has had similar experiences with grain-eating birds. The committee report says seed-eating birds of Kohala ate about 50 tons of sorghum grain in a 30-acre experimental field that was expected to produce 60 tons.

The Senate report said the committee fully "realizes the seriousness of the problem and the attendant implications it holds for the establishment of a major grain production industry in Hawaii. If the grain production industry is successful in Hawaii, it will help expand the livestock industries and eventually result in greater agricultural self-sufficiency for the State,"...

The report made clear that Hawaii's endemic birds will continue to be protected under the bill now pending.

9 March 1972, page A-8: barn owl deaths puzzle on Kauai

LIHUE--The barn owl, introduced to Kauai in 1958 to control rats in the cane fields, seems to be dying off. Several of the birds have been found sick or dead.

Tom C. Telfer, wildlife biologist with the State Fish and Game Division on Kauai, said he cannot determine the reason for the birds' death and has sent some corpses to Honolulu for autopsies. He also has put out a plea to the people of Kauai to call him if they find an ailing owl.

Telfer said the owls, scientifically known as "Tyto alba," are darker and somewhat larger than the ... pueo. The pueo, he said, stays in the higher sections of the island and for this reason did not control the rat problem in the cane fields.

The barn owl was imported from the Mainland when it became apparent the mongoose was not a successful rat-catcher. It was found, to the chagrin of scientists, that the mongoose is a diurnal creature -- it comes out during the day -- and the rat is nocturnal. The mongoose was never brought to Kauai. Even the barn owl could not control the rat problem here.

Telfer said he does not consider the problem of the dying owl serious at this point. He would not speculate on the cause of the deaths, although it is suspected the use of pesticides might be involved.

Mrs. King was concerned, "...I wonder what danger there will be to other wildlife of all sorts while the linnets and ricebirds are being eliminated. Perhaps--I hope--the 'pestiferous birds' are going to be controlled by some sort of physical barrier, or frightened away, or induced to feed on something other than sorghum. Do you know anything about this?..."

Audubon's reply by Mae E. Mull, Secretary, 23 March 1972:

...Several officers of the Society discussed this issue and felt the Audubon position should be made clear by presenting testimony on Senate Bill 1603. This bill calls for a \$25,000 appropriation "For Protection and Control of Wildlife," meaning control of seed-eating birds to protect sorghum and rice in the fields.

I enclose a copy of that testimony. We realize that a population explosion of introduced seed-eaters can and does occur when a large food supply is made available to such birds who, by nature, tend to flock in great number when seeds, food seeds, are concentrated over extensive acreages. We understand that the farmer must protect his crops from undue loss.

We have two main concerns. First, that the control measure used be carefully balanced with the need for control, so that there is no unnecessary loss of these birds,

and that other desirable birds, animals, insects and plants are not needlessly sacrificed. Second, with our present knowledge and experience we must not introduce any more birds and mammals into the wild in Hawaii that could later be costly to control and be a waste of life.

Introducing birds today for release or that can escape and become established in the wild is just as wrong as introducing game mammals for hunters to shoot at. Both birds and mammals brought here from the continents are likely to become serious pests at a later time, and eradication measures follow. Its most damaging aspect is the lack of respect for life. It makes man callous in attitude and action. Then man thinks he can manipulate any process in nature to suit his own temporary convenience. It all adds up to a lack of reverence for life--and this is our chief concern. Unless we begin to respect life processes in the natural environment, and stop trying to shift laws of nature to suit us, man's very existence on this finite planet is threatened.

We have read that the barn owl was introduced for the purpose of controlling introduced rodents. Unexplained barn owl deaths, along the roads of the Hamakua Coast of the Big Island, have been reported for several years--where cane is grown but no seed crops. The barn owl may succumb to poisons in the rats they eat....

Audubon's position on Senate Bill 1603-72, Making an Appropriation for Protection and Control of Wildlife to Senator Kenneth F. Brown, Chairman, and members of the Committee on Ecology, Environment and Recreation by Vice President William P. Mull, 8 March 1972:

...Our comments on Senate Bill 1603-72 are as follows:

A. Although this bill is not explicit, we understand that its purpose is to appropriate funds for use by the Department of Agriculture to control populations of introduced seed-eating birds, like the house finch and ricebird, that are or may become destructive to grain crops such as sorghum on the neighbor islands. If this is true, the wording of the bill is somewhat misleading and ambiguous. To ensure that the funds being appropriated are spent for the purpose intended, and to clarify that purpose, we suggest that the wording "protection and control of wildlife" be changed to read: protection of grain crops through control of introduced seed-eating birds that are destructive to such crops.

B. Since sorghum--and, perhaps, other grain crops--are in prospect on former cane lands in the Kahuku area and elsewhere on Oahu, and since populations of the ricebird, house finch and other introduced seed-eating birds (like the black-headed mannikin) are present now on Oahu and are potential threats to grain crops on Oahu, we suggest that Oahu be added to the islands specified in the bill.

C. Since control methods are not specified, and since certain control methods might be injurious to other desirable birds or wildlife that are in the areas to be treated, we recommend that a clause be added specifying that the control methods used not harm populations of species that are not pests.

D. We wish to add one general comment that is pertinent to many of the legislative deliberations of this Committee concerning wildlife ecology in Hawaii and that is exemplified by this appropriation bill. Namely, introductions into Hawaii of exotic species of any kind are potentially dangerous and costly. This potential danger and expense cannot fully be foreseen at the time of the introduction. In this bill, we have an example of well-intentioned and seemingly desirable introduction of ricebirds and house finches to these islands over one-hundred years ago. Now they are an expensive problem to the farmer and to the State.

Many such examples have occurred in Hawaii in the past, and more can occur in the future as a result of the many foreign species of plants and animals that have been liberated and become established here. In light of this costly experience, it would seem prudent to scrutinize with utmost care any further proposed introductions of exotic species into Hawaii. They can greatly magnify our future ecological problems.

Letter from Dr. Otto Degener, 23 February 1972 on Axis Deer Damages. Distributed to Legislators, newspapers, scientific societies, and interested individuals.

In the Star-Bulletin for February 20 I read that "The State Animal Species Advisory Commission will fly to Molokai and Lanai in early March to inspect what changes have occurred as a result of the presence of Axis deer."

I know Molokai well, having botanized there four and a half months in 1928. My headquarters were Maunahui, Ualapue and Wailau. Mrs. Degener and I, both professional botanists, also know Lanai well, having botanized there for six months in 1963-64, with Lanai City our headquarters. Many thousands of our Molokai and Lanai herbarium specimens, labeled as to locality, condition of growth and date of collection, have been mounted properly on stiff herbarium paper measuring roughly 12x18 inches. Such plants, with those collected by other botanists -- yes, Captain Cook had botanist David Nelson along, whose "Sandwich Island" plant specimens are still carefully preserved for permanent record and study -- are now not unlike cards in filing cabinets at the "Marie C. Neal Herbarium" at the Bishop Museum, at the New York Botanical Garden, at the Smithsonian and elsewhere. Such specimens, thanks to the appended labels, are actually vouchers to prove precisely where the plant had been collected and on which day. Museum curators, in a matter of minutes, can find such plants for any one needing them for study or record.

The B.P. Bishop Museum, apparently an ignored stepchild of our Legislators, is precisely the place where members of the Commission must spend some time doing homework before joyously flying off to Molokai and Lanai. Without doing so in company of some young botanist for guidance, their trip will be little more than the blind leading the blind at the expense of the tax payer such as you and I. Let them first consult the Museum to see what species of plants grew on Molokai and Lanai respectively -- each island has largely a distinctive flora of its own -- and to what extent these two islands have become degraded since their exposure to axis deer.

In 1928 West Molokai about Mauna Loa had considerable patches of dense, dry forest, the trees badly browsed by axis deer and the tender seedlings eaten or trampled to death. At that time I collected vouchers for preservation of such beauties as the native gardenia, naio, the golden-leaved keahi, lama or Hawaiian kaki, cotton-leaved nehe, kolea with pinkish leaf buds, the fragrant-flowered coffee relative alahe'e, 'ahakea, the red-flowered wiliwili, the Hawaiian olive or olopua, etc. A visit to the precise spot in January 1960 was surprising: no trace remained of the forest except for a few wiliwili trees (the trunks and twigs bear black thorns) and a single alahe'e! According to a Hawaiian already old in 1928, he and his late father many years before had used cane knives to penetrate the jungle of shrubs, trees and 'ie'ie vines growing in this vicinity. I believe this story, as the general area is sprinkled here and there with recently fossilized land shells that must have had dense, moist undergrowth in which to live.

In summary, the original dry forest of West Molokai has been wiped out by axis deer during the last twenty to thirty years. The Commission need not waste time visiting this region of devastation as its bare nature is conspicuously apparent from the air shortly before the 'plane lands on the island airport. The tree presently on West Molokai is the introduced algaroba. This survives deer attack in its native tropical America and on Molokai because of the sharp spines along its twigs and branches.

In 1964 Lanai about Kanepuu was still a beautiful dry forest where axis deer took cover from hunters and the sun, and freely wandered along their own well-worn trails nibbling twigs and trampling native seedlings. Mrs. Degener and I botanized here extensively. This is the island on which the late George C. Munro (1866-1963) spent twenty years as rancher and then manager. To facilitate our making a representative collection of Lanai plants, Mr. Munro sent us a list of the species he had collected in Kanepuu up to 1930. Of his 41 species (a set of Kanepuu plants is in the Bishop Museum as proof), we found only one third remaining! As trees and their seedlings succumb to browsing and the mature ones also to the expected ravages of old age, no young plants are there for replacement. This unique dry forest is presently decadent and doomed to annihilation within twenty to thirty years like its Mauna Loa counterpart a generation before. The forestless Mauna Loa and Kanepuu

areas, with rain and especially rampant wind erosion, will become like Kahoolawe: BARE, RED DIRT.

So that a fair assessment of deer damage to Kanepuu since about 1930 can be made, I have sent a xerox copy of Mr. Munro's memorandum to the State Animal Species Advisory Committee. I challenge the members to find the species of plants at Kanepuu that existed there before deer overran the island.

Although I expect a wise decision from the Advisory Commission soon, I am surprised that the State of Hawaii had planned to liberate the axis deer "In the higher elevation around Mauna Kea." In a 1968 brochure of the Hawaii Cattlemen's Council entitled "WHY AXIS DEER SHOULD NOT BE INTRODUCED TO THE ISLAND OF HAWAII," is stated the well-known fact that this Indian deer "is tropical and prefers lower, warmer elevations." When flying over the Island of Hawaii, note the deep gulches zigzagging from higher elevations through ranches, cane fields, vegetable and flower gardens, and orchards. Can any one believe that a tropical, fence-jumping animal will remain with little cover for protection from hunters at "higher elevations?" These nocturnal animals will work their way nightly from cold elevations to the warmer lowlands. They will wander preferably along jeep and plantation roads from sunset to sunrise. When sufficiently makai to enjoy the warmth, they will hide in the gulches during the day, coming forth nightly to mingle with cattle and to raid sweet luscious cane, vegetables, flowers, and orchard fruits.

The American Society of Mammalogists, in convention at Yellowstone National Park in 1950, urged our Board of Agriculture and Forestry, then flirting with the idea of introducing axis deer to Hawaii, "to consider the danger and folly of such an introduction...." Will we in the State of Hawaii never learn?

The Wildlife of Keehi Lagoon, Oahu, by Ronald L. Walker, Wildlife Biologist, Hawaii Division of Fish and Game (Paper presented at the second Hawaii Wildlife Symposium held in Hilo, Hawaii, 12 May 1971)

Introduction: The proposal to construct a Honolulu International Airport reef runway at Keehi Lagoon on the leeward coast of Oahu brought up the question of the effects of the construction on bird habitat and activities. Accordingly, the State Department of Transportation through Ralph M. Parsons Co. hired Dr. Andrew Berger and the author to conduct a field survey and literature search on the bird life of the area. Specifically, the study was to determine population levels and the distribution of migratory, introduced, and native bird species and to record maximum elevations of bird flights as they might relate to aircraft. The study is not yet complete, so these remarks should be considered somewhat premature....

Techniques: Between December 12, 1970 and April 28, 1971, a total of 60 bird censuses were made in Keehi Lagoon and environs. They were conducted under a variety of conditions of tide, seas, weather, and time of day, and varied in duration from 1½ hours to 4½ hours each. A 15-foot skiff with a 20 H.P. motor was used, although when small-craft warnings were up, an automobile was necessary. Initially, there were 23 stations located over open water, on tide flats, on islets, and along the shoreline, but beginning on January 9, 1971, the number was reduced to 17. Generally, each station was glassed with 7x30 binoculars and covered an area with a radius of 250 yards.

History: The literature search has not been completed, but it is clear that little was known of the ornithology of Keehi Lagoon prior to this study. Sporadic records of bird observations have appeared in the journal of the Hawaii Audubon Society and in waterbird census reports of the State Division of Fish and Game. The four common migratory shorebirds and the Hawaiian stilt were known to frequent the exposed mud flats particularly in the winter months. Unusual species recorded over the years included a godwit and a glaucous-winged gull. It was thought that perhaps the Hawaiian stilt nested on some of the islets in the lagoon.

Bird Species: A total of 12 species of common introduced birds was recorded during the survey, and most of these occurred along the coast of the mainland of Oahu. Only the lace-necked dove, barred dove, white-eye, and English sparrow were seen with any frequency in the lagoon itself, primarily associated with mangrove and kiawe trees. Others noted were the rock dove, mockingbird, mynah, Brazilian cardinal,

red cardinal, linnet, and cattle egret.

The most common migratory birds numerically and by occurrence were the Pacific golden plover, ruddy turnstone, sanderling, and wandering tattler, in that order. Unusual migrants included an osprey, dunlins, black-bellied plover, glaucous-winged gulls, a herring gull, Franklin gulls, and an unidentified hawk of the falcon type.

The native bird of most wide-spread occurrence was the Hawaiian stilt. The black-crowned night heron was seen occasionally at the western end of the study area near Fort Kamehameha, but never out in the seaward mudflat areas. The only other native birds noted, on isolated occasions, were the brown booby, common noddly, and Hawaiian owl.

Hawaiian Stilt: Of particular interest during the survey was the ae'o which is an endangered species. The maximum number of stilt seen during the 5 months was 87 which would indicate that the total number using the lagoon is perhaps less than 100. At low tide they were sidely scattered on the mudflats, and on one occasion at high tide, 76 individuals were noted grouped on a small islet. With the exception of one or two seen at Fort Kamehameha, all of the Hawaiian stilt left Keehi Lagoon after January 31, 1971. As they had not yet returned by April 30th, it is probable that this species does not nest in this area but leaves for breeding areas during the spring and summer months.

Shorebird Abundance: Although no attempt was made to determine or estimate total numbers of shorebirds in the lagoon, extrapolation of station densities could result in this information. During the course of the study, large concentrations of plover, turnstones, sanderlings, and tattlers were noted on specific stations. With the exception of the pre-migratory flights which will be discussed later, the high counts by species on any single station are as follows: Pacific golden plover 192, ruddy turnstone 199, sanderling 131, and wandering tattler 16.

Habits: Shorebird activities on a daily basis are influenced most by fluctuations of the tide. At low tide, when much of the mud-covered reef is exposed, there are fewer birds on stations as they are scattered and feeding. At high tide when the mudflats are covered, more flying is noted and the birds are congregated on sandbars, inland on the islets, or on rocks, sticks, rubber tires, seaplane runway markers, and debris protruding above the water. The small shorebirds and the stilt appear to be waiting for the tide to recede, and feed more actively just after the outgoing tide rather than just before the incoming tide. It can be assumed from this that there are more food organisms available just after the tide recedes. Other studies have indicated that the plover in particular flies inland to feed on grasslands and agricultural areas during period of high tide. Just how many of the shorebirds of the various species using Keehi Lagoon leave for the uplands and how many stay to await low tide is unknown at this point. However, on one occasion, 336 golden plover were noted on the grass overrun area of the airport at high tide.

Little was done on food habits, but it is probable that small crustaceans, mollusks, bivalves, and fish are utilized by the shorebirds. After storms when seaweed piles up along the shore, shorebirds--particularly turnstones--feed actively on insects attracted to the rotting limu. A wandering tattler was noted on one occasion feeding on a small silvery fish. Feeding territorialism was noted particularly among plover. Such territorialism was less evident, however, late in the season when birds were gathering prior to migration.

On February 15, 1971, the first instance of what was thought to be pre-migratory behaviour was noted. Approximately 800 to 1,000 ruddy turnstones and sanderlings (perhaps a few plover) were noted "swarming" over the lagoon. They alternately flew a few feet over the water and rose to an estimated elevation of 600 feet, breaking into separate flocks and then rejoining. They maneuvered as one large organism, sometimes in a long strung-out line, and sometimes as a densely packed group which could be seen at a great distance. They continued this activity for about 15 minutes and then flew west up the coast. It is not known whether these were birds passing through Hawaii north, or actually resident wintering birds "practicing" for migration. This type of behaviour was noted several times through the end of March, although never by so large a flock.

Flight Behaviour: The vast majority of the migratory and native birds flew at

elevations well below 100 feet while moving around and to and from the lagoon. (The exception being the aforementioned "pre-migratory flights.") The small common shorebirds usually flew at an elevation of about 20 feet between stations, and the stilt never flew above 40 feet. Some maximum flights include: Brown booby 50', domestic pigeon 80', osprey 75', glaucous gull 45', and Hawaiian owl 15'. Disturbance by people caused shorebirds to fly up, circle, and land only a few hundred yards away. Aircraft such as helicopters, jets, and light planes had little effect on feeding or roosting birds, especially if these flights occurred at an elevation of 200' or more. During low- or mid-tides, most birds flew in an easterly or westerly direction, and at high tide movement was predominately mauka-makai.

As this was primarily a study of the avifauna, little effort was made to record the occurrence of mammals or reptiles. House mice were noted on the vegetated islands, and it is likely that rats are found on the islands where the squatters' shacks have been located for many years. Domestic dogs, pigs, and chickens occur in a somewhat semi-wild state on these islands as well. No effort was made to collect skinks or geckos, but they probably occur on the higher islands. Green sea turtles were common in the lagoon, particularly in the western-most channel.

As usual, a study such as this raises more questions than it answers. But this survey does represent over 170 hours of field observation in a relatively limited geographical area. It is hoped that these observations will be of interest to future investigators.

Audubon's comments on H-3 pre-final environmental impact statement by Vice President William P. Mull, 7 March 1972:

The substance of the attached statement was presented orally at a public meeting in Honolulu on February 9, 1972. It is our perspective on the Vegetation and Wildlife sections of the H-3 Pre-Final Environmental Impact Statement, to which the public was given only limited access. Public comment was not solicited by the State Department of Transportation.

This analysis is being circulated for the first time now.

In light of its parallel to conclusions reached by the U.S. Environmental Protection Agency, as announced locally in the press on March 7, 1972, the background details and rationale of our review should interest those officials, conservationists and media people who are concerned with the H-3 controversy and to whom this mailing is addressed.

Impact of H-3 on Vegetation and Wildlife of Oahu--What It Really Means

The Draft impact statement issued by the State Department of Transportation in June 1971 gave the reader the impression that nothing of value in the natural environment would be lost as the result of H-3--but neglected to substantiate that conclusion. The current Pre-Final impact statement conveys the same conclusion and endeavors to back that conclusion with the findings of respected scientists who were hired by the highway planners to survey the flora and fauna along the proposed highway route. The most important area of their survey was the three-mile-long corridor through Moanalua Valley.

Both Dr. Charles H. Lamoureux, who did the flora survey, and Dr. Andrew J. Berger, who did the fauna survey, noted that the Moanalua Valley corridor had suffered disturbance by man and incursions by exotic species introduced by man. They also noted endemic species along the corridor--but none that they regarded as "endangered." They concluded that no native animal or plant species would be threatened with extinction as the immediate result of construction of H-3. Dr. Lamoureux's only significant qualification to his findings was that the long-term effects of H-3 on the flora of the valley are "difficult to assess." Dr. Berger's only significant qualification was that a thorough bird survey of Moanalua Valley should include observations during the spring breeding season, when the birds are more evident than in the fall season, when he conducted his survey.

One must accept the statements of these scientists, within the parameters of their surveys. One must question, however, whether the immediate threat to the overall existence of native Hawaiian species is the sole, or even the most important, consideration in assessing the impact of H-3 on native vegetation and wildlife.

To those who are unfamiliar with the history, peculiarities and current status of Hawaii's and Oahu's native ecosystems, and to those who are advocates of H-3, a quick reading of these scientists' conclusions might lead one to assume that H-3 will have no impact on vegetation and wildlife. Those who prepared the pre-final impact statement did precisely this in the last sentence of Section M, Wildlife, which states: "In view of the report of Dr. Berger, it must be concluded that Interstate H-3 will have no environmental impact on Hawaiian native wildlife." That statement is not supported by Dr. Berger's report. Furthermore, it does not take an expert to see that construction of a 6-lane highway through three miles of undeveloped land that contains native plants and birds in the path of the highway will have some environmental impact on native wildlife in the area.

For example, in his full report (Appendix 4(d)) Dr. Berger states that he found an 'elepaio (an endemic Hawaiian forest bird) in a section of trees in the path of the proposed highway in Moanalua Valley at an elevation lower than any record he was aware of for the 'elepaio on Oahu in modern times. The elimination of those trees by H-3 will not threaten the survival of the 'elepaio as a species in Hawaii, but it certainly will have an environmental impact on the Valley population of the species, whose natural habitat is trees--not concrete highway.

In the same vein, the Pre-Final impact statement devotes Section L, Vegetation, to extracted quotations from Dr. Lamoureux's report, in which he concludes that individuals of several native plant species will be destroyed by H-3 but that this will not threaten the survival of those species in Hawaii--and that construction of H-3 through Moanalua Valley "would involve less damage to native species than such proposed alternative routes as that through North Halawa Valley." This sounds convincing if you read it fast and if you don't examine carefully Dr. Lamoureux's complete report in Appendix 4 (c). In that report, Dr. Lamoureux outlines the plants he found in each of a series of sampling plots the length of the highway through the Valley, which included koa (a native Hawaiian tree) in almost every plot, including the lower part of the Valley where Dr. Berger found the 'elepaio. Although Dr. Lamoureux doesn't mention it, the occurrence of vigorous, regenerating koa at these lower elevations is unusual on Oahu. The fact that H-3 will destroy these young native trees is implicitly excused by the fact that the species, overall in Hawaii, will not thereby be threatened. But what about replacing a three-mile swath of potential native koa forest with a 6-lane strip of concrete? What does this loss amount to? And who has proposed or guaranteed that the implicitly-more-valuable native flora of North Halawa Valley will be protected and preserved as compensation for the loss of its counterpart in Moanalua Valley?

In fact, who has guaranteed that koa or the 'elepaio or any other native species of plant or animal will continue to exist any where on Oahu? That is the gut issue that must be considered in assessing the impact of H-3 on vegetation and wildlife on Oahu. The fact is that the Damon Estate, whatever its past land practices may have been, now has offered to preserve and nurture what is left of native plant and animal species in Moanalua Valley--and to make this 3,000 acre chunk of Oahu's natural heritage open to the public for the edification and appreciation of all the people of Oahu at no cost to those people in taxes or entrance fees. Who else has made such an offer? And for those who are inclined to write off Moanalua Valley as already disturbed or not ecologically unique, how does one account for its demonstrably unusual ability to provide favorable habitat for the 'elepaio and koa?

Any assessment of the impact of H-3 on the vegetation and wildlife of Moanalua Valley must be viewed in a logical geographic, biological and social context if it is to be realistic. The Island of Oahu is the pertinent framework within which to consider the impact of H-3.

To follow this perspective, it is relevant to note that of the eleven kinds of native Hawaiian forest birds known to have existed on Oahu, six have become extinct in the last one-hundred and fifty years. Five of these were endemic to Oahu and are now lost to the world. Two more, the 'i'iwi and the Oahu creeper, have not been reliably reported in the past few years and now may be extinct on this island. Although the 'i'iwi is found elsewhere in Hawaii, the Oahu creeper is endemic to Oahu and, if now gone, is lost to the world. At higher elevations in some areas, the

'apapane, Oahu 'elepaio and Oahu 'amakihi can be found, and the latter two are endemic to Oahu. Taking the current status of native birdlife on Oahu as a yardstick to measure what is happening to Oahu's native ecosystems and natural environment, the portent is clear--the situation is ominous.

In this context, it is not surprising that Dr. Berger did not find the 'i'iwi or the Oahu creeper in Moanalua Valley. What is noteworthy is that he did find all three species of native forest birds known to exist on Oahu, two of which are found nowhere else in the State or in the world. Again, this is an indication that Moanalua Valley has positive natural history value and potential. That value and potential is enhanced by the fact that Oahu is a small island, that other habitat areas on the island are subject to destruction or degradation, and that we do not know the gross habitat requirements for any of these three birds. It is conceivable that preservation of Moanalua Valley in a natural state now could spell the difference between survival or extinction of one or all of these species twenty years from now, or even sooner.

With this perspective, the islandwide "growth" and "development" projections used by the planners to justify H-3 can be used with equal validity to deny H-3, if the survival of native species and preservation of our natural environment are, indeed, serious considerations in assessing the impact of H-3, in time as well as in space.

No one can afford to overlook the fact that native ecosystems are the creators and the backbone of the basic soil and water resources of Oahu upon which we all depend for our survival. In our eagerness to exploit Oahu for our immediate convenience, let us not destroy Oahu as a habitable island for our grandchildren.

ALOHA to new members:

Junior: Naomi Kuba, 230 Kaelepulu Drive, Kailua, Oahu 96734

Regular: Elaine H. Abe, 5395 Kilauea Ave, Honolulu, Hawaii 96816
C.W. Morehen, 4584 Bonnieview Place, Victoria, B.C., Canada
Mrs. William J. Mullahey, 2877 Kalakaua Ave, Honolulu, Hawaii 96815
Mrs. Mary E. Reyes, 160 Malanai St, Lahaina, Maui 96761
Mrs. Helen Whorton, 449 Kailua Road, Apt 4-A, Kailua, Oahu 96734
Julia K. Yoshida, 1127 Davenport St, #302, Honolulu, Hawaii 96816

Reinstated: Patrick Conant, 3663 Alani Drive, Honolulu, Hawaii 96822
Dr. Charles H. Lamoureux, 3426 Oahu Ave, Honolulu, Hawaii 96822

The annual index will be mailed to the members only upon request, so if you are interested in receiving a copy, please send in your reservation before July to Kojima, 725-A 8th Avenue, Honolulu, Hawaii 96816.

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

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MAY ACTIVITIES

8 May - Board meeting at McCully-Moiliili Library, 6:45 p.m. Members welcome.

14 May - Field trip to Ulupau Head to study the boobies. Bring lunch, water, and if possible, your car. Transportation cost (75¢) to be paid to the drivers. Meet at the State Library on Punchbowl Street at 8:00 a.m.
Leader: Robert Shallenberger, telephone 259-7524.

15 May - General meeting at the Waikiki Aquarium Auditorium at 7:30 p.m.
Speaker: Donald Reeser, Research Biologist
Topic: Goats Versus Native Vegetation in Hawaii Volcanoes National Park (color slides and movies)

HAWAII AUDUBON SOCIETY EXECUTIVE BOARD:

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