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Many of us are concerned over the struggle now going on in Hawaii between conservationists and hunters in re the axis deer. The preservation of the native forests is the concern of bird lovers because of the birds still living in those forests. Members trying to study the problem may be interested to see two new books received at Bishop Museum, on conservation in New Zealand: THE INVASION OF NEW ZEALAND BY PEOPLE, PLANTS AND ANIMALS, by Andrew Hill Clark (Rutgers University Press, 1949) and INTRODUCED MAMMALS OF NEW ZEALAND: an ecological and economic survey, by K. A. Wodzicki (Wellington, 1950). Can we help the conservationist side in this battle?

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The last month seems to have been particularly fruitful in articles of interest to bird lovers in Hawaii. Reviews take our front page.

THE HAWAIIAN HONEYCREEPERS (AVES, DREPANIIDAE). By Dean Amadon.
(American Museum of Natural History, Bulletin, Volume 95,
Article 4, 1950)

Reviewed by E. H. Bryan, Jr., Curator of Collections, Bernice
P. Bishop Museum.

At last the Hawaiian honeycreepers have received modern scientific treatment worthy of their unique and important place in Hawaiian bird life.

The new monograph is by Dean Amadon, one of the younger of the bird experts at the American Museum. This 106 page study was submitted to Cornell University in partial fulfillment of requirements for the degree of doctor of philosophy.

Dr. Amadon became interested in the Drepaniidae when, under the supervision of Dr. Ernst Mayr, he was assigned to arrange the specimens of this family obtained by the American Museum from the Rothschild Collection. From April 1944 to August 1945 he was stationed in Hawaii while a member of the United States Army. During his time on Oahu he had the opportunity to work over the extensive collection of Drepaniidae in Bishop Museum, as well as make a few field trips into the native forests, where he saw the iiwi and apapane. In company with Paul Baldwin, he spent two months on the island of Hawaii and was there able to observe other species. After leaving the Army he returned to the American Museum and completed his studies there.

Dr. Amadon begins his monograph with a brief account of the Hawaiian environment, to set the stage for the scientific discussion. He then treats of the systematics and the distribution of the family. Heretofore, Hawaiian scientists have divided the family into 43 species and subspecies, assigned to 17 genera. It was admitted that the classification left much to be desired. Dr. Amadon has reduced the number of species to 21 and assigned them to 9 genera. He denominates the variant forms on the different islands as subspecies - a total of 39 species and subspecies in all. His classification is given in the following tabulation.

CLASSIFICATION OF THE FAMILY DRAPANIIDAE

as named and arranged by Dean Amadon, American Museum of Natural History, Bulletin, 95 (4):157-262, 1950.

Scientific name	Former genus	Hawaiian name	Island Range
Subfamily PSITTIROSTRINAE ("chlorodrepanine" section of Perkins)			
<i>Loxops virens virens</i> (Gmelin)	<i>Chlorodrepanis</i>	Hawaii Amakihi	Hawaii
<i>Loxops virens wilsoni</i> (Rothschild)	<i>Chlorodrepanis</i>	Amakihi	Maui, Mol., Lanai
(includes <i>C. kalaana</i> & <i>C. chloroides</i>)			
<i>Loxops virens chloris</i> (Cabanis)	<i>Chlorodrepanis</i>	Oahu Amakihi	Oahu
<i>Loxops virens stejnegeri</i> (Wilson)	<i>Chlorodrepanis</i>	Kauai Amakihi	Kauai
<i>Loxops parva</i> (Stejneger)	<i>Chlorodrepanis</i>	Anianiau	Kauai
<i>Loxops sagittirostris</i> (Rothschild)	<i>Viridonia</i>	Green solitaire	Hawaii
<i>Loxops maculata mana</i> (Wilson)	<i>Oreomystes</i>	Olive green creeper	Hawaii
<i>Loxops maculata montana</i> (Wilson)	<i>Paroreomyza</i>	Alauwahio	Lanai
<i>Loxops maculata newtoni</i> (Rothschild)	<i>Paroreomyza</i>	Alauwahio	Maui
<i>Loxops maculata flammea</i> (Wilson)	<i>Paroreomyza</i>	Kakawahie	Molokai
<i>Loxops maculata maculata</i> (Cabanis)	<i>Paroreomyza</i>	Oahu Creeper	Oahu
<i>Loxops maculata bairdi</i> (Stejneger)	<i>Oreomystes</i>	Akikiki	Kauai
<i>Loxops coccinea coccinea</i> (Gmelin)	<i>Loxops</i>	Akepa, Akakaue	Hawaii
<i>Loxops coccinea ochracea</i> Rothschild	<i>Loxops</i>	Ochraceus Akepeuie	Maui
<i>Loxops coccinea rufa</i> (Bloxam)	<i>Loxops</i>	Oahu Akepeuie	Oahu
<i>Loxops coccinea caeruleirostris</i> (Wilson)	<i>Loxops</i>	Ou-holowai	Kauai
<i>Hemignathus obscurus obscurus</i> (Gmelin)	<i>Hemignathus</i>	Akialoa	Hawaii
<i>Hemignathus obscurus lanaiensis</i> Rothschild	<i>Hemignathus</i>	Lanai Akialoa	Lanai
<i>Hemignathus obscurus ellisianus</i> (Gray)	<i>Hemignathus</i>	Oahu Akialoa	Oahu
<i>Hemignathus procerus</i> Cabanis	<i>Hemignathus</i>	Kauai Akialoa	Kauai
<i>Hemignathus lucidus affinis</i> Rothschild	<i>Heterorhynchus</i>	Maui Nukupuu	Maui
<i>Hemignathus lucidus lucidus</i> Lichtenstein	<i>Heterorhynchus</i>	Oahu Nukupuu	Oahu
<i>Hemignathus lucidus hanapepe</i> Wilson	<i>Heterorhynchus</i>	Nukupuu	Kauai
<i>Hemignathus wilsoni</i> (Rothschild)	<i>Heterorhynchus</i>	Akiapolaau	Hawaii
<i>Pseudonestor xanthophrys</i> Rothschild	<i>Pseudonestor</i>	Parrot-billed Koa "finch"	Maui
<i>Psittirostra psittacea</i> (Gmelin)	<i>Psittirostra</i>	Ou	Hawaii, Maui, Lanai, Molokai, Oahu, Kauai
(includes <i>Dysmorodrepanis munroii</i> Perkins)			
<i>Psittirostra cantans ultima</i> (Bryan)	<i>Telespiza</i>	Nihoa "finch"	Nihoa
<i>Psittirostra cantans cantans</i> (Wilson)	<i>Telespiza</i>	Laysan "finch"	Laysan
<i>Psittirostra bailleui</i> (Oustalet)	<i>Loxioides</i>	Palila	Hawaii
<i>Psittirostra palmeri</i> (Rothschild)	<i>Rhodacanthus</i>	Greater Koa "finch" or Hopue	Hawaii
<i>Psittirostra flaviceps</i> (Rothschild)	<i>Rhodacanthus</i>	Lesser Koa "finch"	Hawaii (Ex.)
<i>Psittirostra kona</i> (Wilson)	<i>Chloridops</i>	Grosbeak "finch"	Hawaii
Subfamily DREPANIINAE			
<i>Himatione sanguinea sanguinea</i> (Gmelin)	<i>Himatione</i>	Apapane	Hawaii, Maui, Molokai, Lanai, Oahu, Kauai
<i>Himatione sanguinea freethi</i> Rothschild	"	Laysan honey-eater	Laysan
<i>Palmeria dolei</i> (Wilson)	<i>Palmeria</i>	Crested Honeycreeper	Maui, Molokai
<i>Ciridops anna</i> (Dole)	<i>Ciridops</i>	Ula-ai-hawane	Hawaii
<i>Vestiaria coccinea</i> (Forster)	<i>Vestiaria</i>	Iiwi	All main Is.
<i>Drepanis pacifica</i> (Gmelin)	<i>Drepanis</i>	Mamo	Hawaii
<i>Drepanis funerea</i> Newton	<i>Drepanorhamphus</i>	Hoa, Perkins' Mamo	Molokai

After presenting a workable classification and several distribution diagrams, Dr. Amadon makes an analysis of measurements of wing, tail, tarsus and culmen of some 400 specimens. Comparisons of proportions are shown by means of ratio diagrams.

Molts, plumage, color and color pattern, feeding habits, song, nesting, and locomotion, parasites, diseases and extinction, and comparative anatomy are discussed in as much detail as available data could make possible. A very scholarly presentation is made of the phylogeny of the genera and of the family, their origin, speciation, the relationship of speciation to geologic age, macro-evolution, including adaptive radiation and changes, the mechanism which may have brought these about, and the correlation of behavior with morphology. All of this is also briefly summarized.

In an appendix, a summary is given of other native land and fresh water birds of the Hawaiian Islands. An explanation is given of the logarithmic ratio diagrams, and there is a lengthy list of "literature cited". All of the species are illustrated on four plates, and three other plates illustrate bill variation in species of Vangidae and Callaeidae, and the convergence in bills of Hemignathus procerus (the Kauai akialoa) and a member of the family Dendrocolaptidae.

This is a monumental and scholarly study. It brings together, with critical analysis, many of the observations and ideas which have been recorded concerning the Drepaniidae, this unique group of birds, found only in the Hawaiian Islands. It gives a conservative classification for the family, and makes use of new methods and concepts which should prove very stimulating to students of zoogeography and organic evolution, studies well illustrated by this group. Dr. Amadon is to be congratulated upon an extensive task, well done.

BREEDING HABITS OF THE BARRED DOVE IN HAWAII, with notes on weights and sex ratios. By Charles W. Schwartz and Elizabeth Reeder Schwartz. (Condor, Vol. 52(6):241-246, 5 figs., 1950)

Barred doves (Geopelia striata), introduced from Malaya in 1922, have become well established in Hawaii, where the equable climate has allowed a phenomenal increase. "Densities up to 800...per square mile are common; and in some places, particularly around water holes and in fields where a source of preferred food is abundant, concentrations may exceed a thousand birds." The bird is present on all the islands, but was introduced latest to the Island of Hawaii (about 1935) and is still finding new areas to exploit there.

These birds breed throughout the year in Hawaii, most abundantly from January to March, and again in October and November, when food supply and climatic conditions are most favorable.

Nests are described and the development of two squabs, observed in detail from hatching time until ten days later. Average weights of adults are given, also sex ratio. Among 207 adult-plumages and nest free birds the males predominated: 115 males to 100 females.

MT and EHB

MIGRATION OF BIRDS. By Frederick C. Lincoln.

(Fish and Wildlife Service, U.S. Department of Agriculture,
Circular 16, 1950)

This pamphlet (of 102 pages) is most attractively printed, the type generously large and easy to read, illustrations - sketches of birds and their migration routes - ample and strikingly clear.

Theories of bird migration are briefly and simply told: the "mystery" of migration, advantages, origin, time of day, seasons, altitude, orientation, segregation, the where of bird migration, evolution of the routes, perils, influence of weather, etc. The area studied is the Americas, North and South, except for the nearest-America route of our friend the Pacific golden plover.

A list of birds mentioned in the text, with their popular and scientific names (Appendix I) and notes on how to assist in bird banding (Appendix II), as well as an index and extensive bibliography mark the high standard of this work, popularly presented.

MT

THE BIRTH OF AN ISLAND. By Rachel L. Carson. (Yale Review, 40:112-126, 1950)
Brief mention is made of the destruction of native Hawaiian birds and plants.

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JOURNAL OF ORNITHOLOGICAL WORK
during the summer of 1937

By Walter R. Donaghho

(Editorial note: Excerpts have been taken from this journal which Mr. Donaghho has kindly offered to "The Elepaio". Some editorial changes have been made.)

June 11: Sailed at 4:00 p.m. on the S.S. Waialeale to Hilo to undertake an official survey, working as Student Technician, of the birds of Hawaii National Park and vicinity. With me was Harold C. Craddock, also to be employed by the Park for the research. The sea was unusually calm. Birds were sighted now and then, first a few Hawaiian tern, now a wedge-tailed shearwater, then an occasional blue-faced or red-footed booby. There was much excitement, especially for the two of us, when a black-footed albatross started following the steamer. Soon two were following us and they stayed with us far into the twilight.

June 12: Came out on deck to see Mauna Kea with its crown bathed in sunlight. A lot of snow could be seen, one of the summit cones having two large patches. Mr. Hyer met us and drove us to the Park. Lunch was at the C.C.C. camp, on the east rim of the crater. The forest grew right into the grounds and the apapane flew right in. I also saw amakihi. Mr. Wingate asked us to study particularly these questions: why are the birds becoming extinct; is there any way to prevent extinction; how can they be protected? After this interview, and some other matters, I walked out to the rim to see what birds I could find. Apapane were flying here and there and I heard the alarm notes of a hill robin. I started imitating a call and one started singing. It answered and I soon brought it near me.

June 13: Near Kilauea-iki apapane were all about, and I could see little companies fly from tree to tree, where they would insert their beaks into the tubules of the ohia blossoms. The sides of the vast crater of Kilauea-iki appeared densely wooded, which gave the feeling of great depth. The forest rang with the notes of countless apapane, and hill robins, the cheery notes of the latter drifting up to us from far below, beautiful and serene in the peaceful quiet of the evening. Returning to camp, Harold shot an apapane which I skinned (my first complete job). I found, freshly eaten, three caterpillars and a green cricket in the neck.

June 14: Met Mr. Lamb, Park Naturalist, who took us to his office at Uwekahuna Museum, where he spent the morning reading the outline of summer's work that we had prepared for Mr. Wingate, and adding items. One was a study of the nene. We shall be going up onto the slopes of Mauna Loa soon to attempt to find this rare bird and make any studies that are possible. After lunch at the camp, we visited the kipuka Puauulu, or Bird Park. I circled the kipuka, and was disappointed in hearing few birds, mostly linnets. Further back, however, apapane were all over the tall ohia trees. Saw the first elepaio here. Hill robins were common, and one could hear them singing here and there. Also heard a few iiwi; saw two. At first, when I heard them chirping their "sweet", I thought that it came from linnets, which have similar notes, but it was, upon "second hearing", a little stronger. Back at camp I climbed a tree to try to see into a nest observed yesterday. But when even with the nest, the bird flew off - an amakihi. Though I waited for it, in the tree, then on the ground, it did not return.

June 15: Went down the Cockett trail, as far as Puhimau. Saw a lot of birds, mostly apapane, with a scattering of hill robins, elepaio and amakihi. Upon reaching Kokoolau crater, we sat on the stone wall and looked into the forest filled depths. Apapane were flitting about among the trees, ever bent upon securing their sip of nectar, and elepaio were "whitting" in the ohia trees near us, flitting about, cocking their tails. One amakihi fed for a fairly long time in the trees next to us. We could see it race up and down the branches and pass quickly over and through the foliage in quest of insects, now and then pausing to sip a blossom. Upon reaching the crater of Puhimau, we found it to be a sanctuary for numbers of mynahs. In the afternoon, Mr. Lamb came for us. Piling into the back of his car, we sped quickly down the road to Makaopuhi, where the trail began on the east side. The forest was open, a great percentage of the trees having died out. Soon we passed through a bit of dense woodland, with hapuu fern growing underneath. Ieie vines twined themselves around and up the limbs of the ohia. This forest gave way to the usual open type and the large tree fern to the smaller, the amaumau. Then through another smaller patch of dense forest and out into open country with scrub ohia. The dense forest surrounded this on the east and on the west side was the usual open type of forest. Fumaroles steamed here and there. Birds were quite common in the denser forest: amakihi, apapane, and elepaio. Only one hill robin was heard. Napau crater was very interesting. It is a hundred feet deep and has a flat bottom, three quarters of a mile in width. Directly across, on the east rim, one can see where the 1922 eruption broke out and poured down over the rim into the crater. An open forest covered the floor of the crater; one could almost count the trees.

June 16: I rode up with Hyer to the Park office and then started out to find the bridle path leading through the fern forest at the back of the Volcano House. Coming to a sign which read "To Brown's Camp", I followed that trail. It skirted the real fern forest and came out into open grassy country scattered with a few ohia trees. The forest, in a dying condition, edged it not far away on the right. Among the ohia I noticed Cheirodendron, or olapa. I wanted to follow a path along a high bank in the rear of the Brown ranch home pastures and so I left the trail to follow one of the many

leading off toward the forest. I cut across country soon, toward the bank, and after a little trouble came upon it. It led through a ravaged forest of ohia, Stroussia, and koa, under which the low growth had been cleared by cattle. A good many apapane, mostly in small companies of seven or eight, flew overhead. A pair of iiwi was seen in a small stand of large ohia near the trail's beginning. Pheasants were calling from the open grassy pasture lands - much too near, as these birds do not belong here. This land rightly belongs to the ancient, native avifauna, the iiwi, the akiapolaau, akialoa, elepaio, apapane and others. But, alas, they may never haunt these areas again.

(aole i pau: not finished, to be continued)

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January Field Trip: A beautiful forest trail, complete with rain, mud and pig-hunters, was our fare on January 14, when about a dozen hardy souls went bird walking at Kawailoa. The wind was quite high most of the way, and sent trees crashing down the gulches. That same wind kept the birds at home, snug and warm in their nests, until the early afternoon. Then a bush warbler made itself heard, and several Japanese tits, hill robins, white-eyes and amakihi joined in the chorus. But not a bird did we see in the forest.

On the way back to town two carloads of us detoured to the swamps at Waipahu, and here, with the aid of Mr. Norton's telescope, we had a most rewarding view of tattlers, golden plover, stilt and turnstones.

Euphie Shields

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MARCH ACTIVITIES:

FIELD TRIP: Sunday, March 11, 1951, to Pa Lehua. Meet at the Library of Hawaii at 8:00 A.M. Bring lunch, water, and car (if possible). Since we fortunately went to Poamoho instead of to Pa Lehua for the February bird walk, we'll schedule Pa Lehua for the March trip. Pa Lehua is usually dry and interesting trail at the southern tip of the Waianae Range.

MEETING: Monday, March 19, 1951, Auditorium, Library of Hawaii, at 7:30 P.M. Two very interesting moving pictures will be shown, one on bird migration and the other on the development of the chick in the egg. Following this program a short business meeting will be held.

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