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PO'O-ULI, Melamprosops phaeosoma

Po'o-uli is scientifically named Melamprosops phaeosoma. The generic and species names are from Greek roots, meaning black forehead and brown body respectively.

OCCASIONAL PAPERS of Bernice P. Bishop Museum, Vol. 24, No. 12, 2 August 1974: A New Genus and Species of Bird from the Island of Maui, Hawaii, (Passeriformes: Drepanididae) by Tonnie L.C. Casey and James D. Jacobi

The species apparently was not known to the ancient Hawaiians. Mrs. Mary Kawena Pukui, a leading authority on the Hawaiian language, suggested the common name of po'o-uli, meaning "black-faced" in Hawaiian.

Introduction: The Drepanididae (the family of Hawaiian honeycreepers) are endemic to the Hawaiian Islands. ...Current classification of the family recognizes two subfamilies; Psittirostrinae and Drepanidinae, with twenty-two species in nine genera (Amadon, 1950; Bock, 1970).

Many of the species are characterized by specialization of the bill relative to the feeding niche; the more specialized genera of the Drepanidinae, Vestiaria and Drepanis, tend toward nectar-feeding, while the Psittirostrinae have adapted particularly toward a diet of insects (Hemignathus and Pseudonestor), or seeds (Psittirostra). ...

We enlisted the support of Dean Amadon of the American Museum of Natural History, in evaluating the systematic position of the new species. We consulted with Dean Amadon and Walter Bock of Columbia University in December 1973 and utilized the excellent collection of Hawaiian birds in the American Museum in evaluation of the new bird. On the recommendation of the Hawaii State Division of Fish and Game, and with our full accord, Bernice P. Bishop Museum, Honolulu, is designated as the depository of the holotype skin and preserved body and the American Museum of Natural History, New York, of the single paratype skin and preserved body.

Remarks: Despite the extreme diversity already known in the Drepanididae, Melamprosops stands well apart from the other genera. The bill shape is closest to that of the extinct 'ula-'ai-hawane (Ciridops anna) in the subfamily Drepanidinae. However, we consider this similarity to be superficial because of distinctly different tongue structure and behavioral aspects.

Unlike Melamprosops, the tongue of Ciridops is distinctly tubular, with a fringed anterior tip (Bock, 1972; Amadon, 1950). Little is known of the feeding habits of the now extinct Ciridops although its native name, 'ula-'ai-hawane, might indicate that it fed on the fruits of the lo'ulu palms (Pritchardia spp.). Bock (1972, p. 75) asserts, "in the absence of any contrary factual information, I would conclude from its tongue morphology, that Ciridops fed on nectar at least during part of the year."

Melamprosops appears to feed exclusively on insects, moving methodically over branches and trunks of trees, picking and prying at the cracks and crevices in the bark. On one occasion, a bird was seen hammering at a branch with its bill, apparently in search of food, reminiscent of the manner in which the 'akiapola'au (Hemignathus wilsoni) often feeds (Perkins, 1903; Jacobi, 1974).

The only vocalization thus far heard from Melamprosops is a single distinct call note: "chik," uttered sharply and harshly. It is very similar to the notes given by the Maui

creeper (Loxops maculata newtoni) and Pseudonestor. However, it is distinct enough to be distinguished from those two birds. This type of call note is not known for the subfamily Drepanidinae (Perkins, 1903; Baldwin, 1953).

For the above reasons, Melamprosops is placed in the Psittirostrinae. Following consultation with Dr. Amadon, we regard it as a specialized offshoot of the psittirostrine genus Loxops. Relative to the three other genera in the subfamily, Hemignathus, Pseudonestor, and Psittirostra, Melamprosops appears to be less specialized than Pseudonestor and less than some of the species of Psittirostra. Amadon suggests a sequence for the subfamily of Loxops, Melamprosops, Hemignathus, Pseudonestor, and Psittirostra, although Melamprosops may not be as closely related to Loxops as is Hemignathus.

Literature Cited: Amadon, Dean. 1950. "The Hawaiian Honeycreepers (Aves: Drepaniidae)" Bull American Mus Natural History 95(Art. 4):151-262.

Baldwin, Paul H. 1953. Annual Cycle, Environment and Evolution in the Hawaiian Honeycreepers (Aves: Drepaniidae). Berkeley and Los Angeles: Univ Calif Press. ...

Bock, Walter J. 1970. "Microevolutionary Sequences as a Fundamental Concept in Macroevolutionary Models." Evolution 24(4):704-722. 1972. "Morphology of the Tongue Apparatus of Ciridops anna (Drepanididae)." Ibis 114:61-78. ...

Jacobi, James D. 1974. "'Akiapola'au and Its Remaining Habitat." Elepaio 34:74-76.

Perkins, R.C.L. 1903. "Vertebrata (Aves)." In David Sharp (ed.), Fauna Hawaiiensis 1(4):368-465. Cambridge: Cambridge Univ Press. ...

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From Grenville Hatch, 29 August 1974: ...How I wish Mr. Munro were here to rejoice in this discovery! He always said we could not list any of the birds as extinct, because many areas had never been explored. He would be so happy over this. I'm glad the paper is dedicated to him. ...

REVIEWS by Wayne C. Gagne:

GRANT, P.R. 1972. Convergent and Divergent Character Displacement. Biol J. Linn Soc 4(1):39-68. The greater part of this paper is a literature review of the best documented and well publicized cases presenting evidence for the ecological (competitive) aspect of character displacement. Grant defines character displacement as "the process by which a morphological (structural) character state of a species changes under natural selection arising from the presence, in the same environment, of one or more species similar to it ecologically and/or reproductively."

Of particular interest to followers of Hawaiian natural history is his critique of Bock's 1970 paper in EVOLUTION, which I recently reviewed, which detailed the supposed importance of divergent character displacement in the predominantly finch-billed (Psittirostrinae) subfamily members of the Hawaiian honeycreepers. The model Bock presented gives Grant problems, particularly Bock's procedure of using geographical, systematic and bill size information to establish which species or subspecies have given rise to which. "The difficulty in assessing these interpretations lies not in identifying original and derived populations but in identifying pre-and post-contact character states." Grant concludes that the evolution of the Psittirostrinae is "so complex that the unequivocal identification of character displacement is impossible, even though it may well have occurred. ..."

The increasing interest by Bock, Grant and others in Hawaiian honeycreepers to help develop evolutionary theory demonstrates that this endemic bird family has at long last come out of the shadow cast by Darwin's finches of the Galapagos Islands. In a way it is "a coming of age" of this segment of Hawaii's singular native biota.

TOMICH, P. QUENTIN. 1974. The Hawaiian Hoary Bat: Daredevil of the Volcanoes. Natl Parks & Conserv Mag 48(2)10-13. Dr. Tomich, an Island of Hawaii resident, has actively supported the protection of Hawaii's rare and endangered species primarily through citizen programs for the management and conservation of critical habitat. He has written a popular account of our only native land mammal, the Hawaiian hoary bat (Lasiurus cinereus semotus) called 'ape'ape'a by the ancient Hawaiians.

He compares it with its closely related American subspecies and their migratory aspects to try to ascertain the probable origin of our bat. But, he has found certain features of its metabolism to be unique. Its historical distribution and abundance are

discussed. The total number now "is probably in the range of a few thousand." Foraging and breeding behaviour on the Island of Hawaii is presented.

The bat shows some heartening adaptability to agriculture and urbanization in contrast to most of the native biota, but he cautions: "In spite of the bat's adaptability, it seems obvious that the availability of natural forest areas is essential to the survival of the species," and this seems borne out by its virtual disappearance on Oahu. He concludes that in spite of recent protective legislation "A strong state-federal program is now in order to establish final base line data with regard to habitat preservation and other possible management procedures that would help assure the survival of Hawaii's only flying mammal."

A fascinating sidelight, reflected in the title, is the apparent propensity for the bat to be attracted to or frequent the walls of the erupting craters sometimes getting incinerated.

ANON. 1974. Champion Trees of Hawaii. American Forests. May 1974, Vol. 80, No. 5, pages 26-35. This is the latest list of the largest native and exotic trees of the Hawaiian Islands, part of the magazine's "Social Register of Big Trees" of America. The 1969 list had 201 species of native and exotic trees; this one has a total of 176 species of which 47 are native species. The records are based on the tree's trunk circumference at 4½ feet, the total height, and the canopy spread.

What is particularly unsettling to me is that of the 129 exotic species, 95 are said to be "reproducing naturally." For example, all of the 21 species of Eucalyptus are shown to be in this category. This bodes ill for the native biota, because it means that these trees will not stay where they are planted, but will naturalize, and in many instances, compete with the native vegetation for living space, degrading the native ecosystems in the process. What follows in a gradation to the biological deserts of the exotic tree plantations, devoid as they are of most native species, save for the occasional, venturesome honeycreeper during the blooming season. This means a loss of human control over what has been intentionally introduced.

Most of the record holders are on the Island of Hawaii, but this is probably a result of greater attention paid to this aspect by Big Island foresters and their friends.

HONOLULU STAR-BULLETIN, 6 July 1974, page A-8: Trees for Honolulu Streets by Harry Whitten

There is something emotional about trees which arouses protests when one is cut down and fear that they are being destroyed by asphalt. However, the fact is that today there are more than three times as many trees on City-County streets as there were 12 years ago.

...The City removes from 100 to 300 trees a year,...because they become infested with insects, or get too old, or start to rot, or for other reasons. Trees are relocated or otherwise salvaged, if it's possible.

People have become outraged when they didn't realize why trees were removed, such as when trees along Wilder Avenue had to be cut down because they were infested.

A procedure has been set up whereby the Outdoor Circle or people in the community are notified before trees are removed.../and/ hopes that the new procedures will eliminate the misunderstandings between public and City, or between contractor and City departments.

Speaking of trees, our attention has been called to an article on "Champion Trees of Hawaii," published in the May issues of American Forests. The compilation of the champion trees of 200 species was done primarily by L.W. Bryan, retired Big Island forester, assisted by several other persons. The photographs were taken by Bryan and Norman K. Carlson, Kona land manager for the Bishop Estate.

Most of the champion trees, especially the native ones, grow on the Big Island, although a few champions among exotic trees grow on Oahu, mainly in Foster Garden. One of the photographs was of a native sandalwood in Pupukeya Forest Reserve, Oahu.

A few champions and their locations are (1) Acacia koa, at Keauhou, Big Island, 37 feet 4 inches circumference at 4½ feet elevation, 140 feet high, and 128 feet spread, (2) Kukui, Kapapala, Pahala, Big Island, 10 feet 7 inches circumference, 67 feet high, 59 feet spread, (3) Hala, Keaau, Hilo, Big Island, 4 feet 6 inches circumference, 35 feet high, 40 feet spread, (4) Sandalwood, Honomolina, South Kona, Big Island, 7 feet 8 inches circumference, 65 feet high, 48 inches /s/b feet/ spread, (5) 'Ohi'a-lehua, Waipunalei, Hilo, Big Island, 17 feet 10 inches circumference, 84 feet high, 78 feet spread./ ...

We have received the following Job Progress Reports on Research Project Segment, Statewide Pittman-Robertson Program, State of Hawaii, from State Division of Fish and Game (Contributor: Ronald L. Walker):

- Project No. W-15-1, Job No. VII-A (20), 1 Jul 1970 to 30 Jun 1971, Annual inventory of migratory and non-migratory waterfowl and shorebirds on the Island of Hawaii
- Project No. W-15-2, Job No. VII-A (21), 1 Jul 1971 to 30 Jun 1972, same title
- Project No. W-15-3, Job No. VII-A (22), 3 Aug 1972 & 21 Jun 1973, same title
- Project No. W-15-1, Job No. VII-B (20), 1 Jul 1970 to 30 Jun 1971, Annual inventory of migratory and non-migratory waterfowl and shorebirds in Maui county
- Project No. W-15-2, Job No. VII-B (21), 1 Jul 1971 to 30 Jun 1972, same title
- Project No. W-15-3, Job No. VII-B (22), 3 Aug 1972 & 18 Jan 1973, same title
- Project No. W-15-1, Job No. VII-C (20), 7 Aug 1970 & 12 Jan 1971, Annual survey and inventory of migratory and non-migratory waterfowl and shorebirds on the Island of Oahu
- Project No. W-15-2, Job No. VII-C (21), 27 Jul 1971 & 13 Jan 1972, same title
- Project No. W-15-3, Job No. VII-C (22), 3 Aug 1972 & 18 Jan 1973, same title
- Project No. W-15-1, Job No. VII-D (16), 1 Jul 1970 to 30 Jun 1971, Annual inventory of migratory and non-migratory waterfowl and shorebirds on the Island of Kauai
- Project No. W-15-2, Job No. VII-D (17), 1 Jul 1971 to 30 Jun 1972, same title
- Project No. W-15-3, Job No. VII-D (18), 3 Aug 1972 & 18 Jan 1973, same title
- Project No. W-15-3, Job No. VIII-A (3), 1 Jul 1972 to 30 Jun 1973, Limited surveys of dispersal and survival of Koloa released on the Island of Hawaii
- Project No. W-15-1, Job No. I-A (16), 1 Jul 1970 to 30 Jun 1971, Compilation of field observations related to numbers, survivability and distribution of nene on the Island of HI.
- Project No. W-15-2, Job No. I-A (17), 1 Jul 1971 to 30 Jun 1972, same title
- Project No. W-15-3, Job No. I-A (18), 1 Jul 1972 to 30 Jun 1973, same title
- Project No. W-15-1, Job No. I-E (8), 1 Jul 1970 to 30 Jun 1971, Ecological survey of the nene on the Island of Maui

Also received the following Job Completion Reports on Research Project Segment, Wildlife Management Research:

- Project No. W-5-R-19, Job No. 24 (19), no period covered 1967-68 breeding season, Limited field investigation of native Hawaiian waterfowl (Nene & Koloa)
- Project No. W-5-R-21, Job No. 24 (21), 1 Jul 1969 to 30 Jun 1970, same title (Nene)
- Project No. W-5-R-19, Job No. 52 (19), 8-10 Jan 1968, Ecological investigation of the migratory game birds (Annual waterfowl count)
- Project No. W-5-R-20, Job No. 52 (20), 13-14 Jan 1969, same title
- Project No. W-5-R-21, Job No. 52 (21), 13-15 Jan 1970, same title
- Project No. W-5-R-21, Job No. 52 (21), 1 Jul 1969 to 30 Jun 1970, same title (Plover survey)

EMERGENCY Hawaiian Stilt Census, 12 Apr 1972

Excerpts from the Plover Survey Report of the Wildlife Management Research, Project No. W-5-R-21, Job No. 52 (21), 1 Jul 1969 to 30 Jun 1970, State Division of Fish and Game:

...A total of 43 Pacific Golden Plovers (Pluvialis dominica) was collected during August, September, October, January and April. Fourteen were males, 23 were females and 6 were unclassified as to sex. Four of the latter were sent to the University of Oklahoma for analysis. ...

Objectives: (1) To determine the abundance and distribution of the Pacific golden plover in Hawaii, (2) To determine the effects of the environment upon these populations in terms of changes in their density and distribution, and (3) To correlate the data obtained with such historical information as may be available, and attempt to evaluate the advisability of harvesting a portion of the annual migration through sport hunting practices.

Techniques: Plovers were collected at random in all stages of plumage during August, September, October, and January. Collection in April was confined to selecting plovers in advanced breeding plumage as much as possible. Birds collected in August were from Sand Island, Oahu, a coral fill saline mudflat habitat. One plover collected in October was from a pineapple field at Kaa, Lanai. The remainder of the birds were collected from Bellows Air Force Station, Oahu, a short grass grazed pasture habitat with scattered Lantana (Lantana camara) and Klu (Acacia farnesiana). Except for the plover from Lanai, all plovers were collected using a 20 ga. shotgun with low base No. 8 shot.

All plovers collected were weighed on a balance type gram scale. Plumage descriptions and the stage of moulting of the primaries were recorded. Measurements of total length, wing spread, wing length and tail length were made using a metric ruler and recorded. Total length was measured from the top of the head to the end of the longest tail feather.

All plover specimens were then frozen and, as time permitted, the bodies were thawed and dissected for examination and measure of gonads and the identification of gizzard contents. The gizzard contents were also measured volumetrically after air drying. Testes and ova were examined and measured using a dissecting microscope. The presence or degree of body fat was noted in general terms.

Study skins were prepared for reference as to moulting sequence as related to the wintering period. The outermost rectrix of each specimen was examined and described as a means of determining sex.

Four specimens were sent to Dr. George Sutton at the University of Oklahoma who was to help in devising techniques to sex plover by external features and to differentiate adults from juveniles.

Findings: ...Plumage condition--All but one of the birds collected in August were in the post-breeding moult. The cheek, breast and belly of these birds exhibited some black feathers characteristic of the breeding plumage; on a few the superciliary eye stripe was still visible, appearing white, tinted with yellow or white, spotted with gray-brown and yellow. One of the birds taken in August was in complete winter plumage; light gray-brown under parts and dark gray with gold and white spots dorsally. This bird was sent to Dr. Sutton for sexing and, hopefully for aging, but he was unable to ~~respond~~ ^{respond} due to the pressure of other work.

An examination of the plumage of the plovers collected indicated that they continue their post-breeding moult through October, moulting their primaries in pairs (left and right simultaneously) and sequentially from 1 to 10. All plovers collected in January had attained the winter plumage with all new primaries present. Pin feathers were evident on dorsal and ventral areas. All plovers collected in April had some degree of breeding plumage. Males (7) were more advanced in nuptial plumage than females except for one male that had less than $\frac{1}{4}$ breeding plumage. The other six males were in $\frac{3}{4}$ to nearly complete summer feather. The five females were in less than $\frac{1}{4}$ to $\frac{1}{2}$ breeding plumage.

Lipid deposit--In birds collected in August, a thin layer of fatty tissue was present covering the breast and abdominal area and on the inner surface of the skin. Fat deposits were found in only isolated areas on the surface of the breast and along the feather tracts of the inner surface of the skin of the October specimens. In January, a complete layer of fat was found on the breast area of the plovers collected. The birds shot in April had a fairly thick layer of fat covering the body.

Sex determination--According to D.W. Johnston and R.W. McFarlane (1967) sexing Pacific golden plover is possible by examining the coloration and pattern of the outermost rectrix. They state: "Another valuable sex characteristic is the color and pattern of the outermost rectrix; in males this feather is usually barred black and white, whereas in females it is virtually unbarred and gray-brown. There is considerable individual variation in these patterns; however, in a few males (proven by dissection) the outer rectrices were unbarred like the usual female pattern. These variations were probably not due to age differences alone, because most of them were found in birds in breeding plumage."

Thirty-eight study skins were examined for color and the pattern of the outermost rectrix. The rectrices of 17 females had color ranging from dark gray to a light brown-gray. The pattern of white, when present, was either streaked or zigzagged. On ten males examined, the rectrices were dark gray or almost black, and white and the pattern was barred. Eleven plovers had intermediate plumage characteristics. Of these, four males had colors of dark gray to a shade of gray-brown with zigzagged or streaked patterns of white. The seven females had colors of dark gray to light brown-gray with a white to gray-white, barred pattern. Of these seven females, only two were colored dark gray with gray-white barring. (However, only one of these was verified as a female by gonadal examination.) The rectrices of the other five females were of a light brown-gray with white or gray-white barring. All seven of these females exhibited rectrices characteristic of males except for the duller hues. Thus, in about 80% of the specimens examined sex could be accurately determined using the outermost rectrix. Those with the outermost rectrix colored dark gray (almost black) or gray-brown with the white barred pattern were males. Those with dark gray to

light brown-gray which may be streaked, zigzagged or barred with light gray or a grayish-white were females.

From the samples, it appears that these variations are individual characteristics and not related to the seasonal moult. ...

Field Weights: An analysis of the weights of plovers collected during the period indicates that plovers begin to lose weight shortly after their arrival in August and continue to do so through October. Although no samples were taken in November and December, by January they begin to gain weight and by April average 20 to 30 grams heavier. The loss of weight just after arrival may be due to abrupt changes in diet, but further research is necessary to verify this. From the data thus far obtained, there seems to be no appreciable or consistent difference in the relative weights of males and females. ...

External Measurements: The following measurements were recorded for each of the specimens taken: total length, wing length, wing spread and tail length. The accuracy of the measurement of these four features is influenced by a number of factors: the degree of rigor mortis, state of development of the primary and tail feathers, wearing and fraying of these feathers and, in the case of wing measurements, broken bones. ...The data obtained cannot be used to differentiate between sexes. ...

Gonadal Measurements: There was a significant increase in the size of both ova and testes between January and April. ...

Gizzard Contents: The gizzard contents of 36 plovers were examined and identified. ... In most instances the identification of insects was confined to the Order level, because only bits and pieces were found and species level identification was impossible. ...

The average composition of...gizzard contents of three plovers collected in August at Sand Island, Oahu, was: 47% crustaceans, 35% miscellaneous (pebbles (grit), feathers, vegetative matter), 17% Melanid snails and 1% Coleoptera /bettle/...; of 33 plovers collected in September, October, January and April at Bellows Air Force Station was: 86% Coleoptera, Isopoda /pillbug, sowbug/, and Orthoptera /grasshopper, cockroach/, 14% miscellaneous (pebbles, feathers, vegetative matter, lead shot and snails). ...

As can be seen, the primary food of plover collected at Sand Island, Oahu, a coral fill saline mudflat habitat, was Crustaceans. The plovers from Bellows AFS, Oahu, a short grass type grazed pasture habitat was insects of the Order Coleoptera (adults and larva), Orthoptera and Isopoda. Grit was composed of various sizes of rock, snail shells (including whole snails) and coral bits. One rock of an unusually large size measured 9.3 mm x 7.9 mm x 5.0 mm. Miscellaneous matter was mostly identifiable vegetative material and feathers thought to be of the plover. A few birds also consumed lead shot.

Discussion: The key to determining whether a portion of the population of wintering Pacific golden plover can be harvested in Hawaii is to determine what percent of the flocks present in Hawaii is made up of juveniles, and to a lesser extent, what percentage is females and what percentage is males. In other words, what is the annual increment. In order to do this under field conditions, a reliable method of determining sex and age must be devised. As can be seen from the foregoing findings, size and plumage characteristics are not valid criteria for such determination. From field observations, there was nothing detected to indicate that feeding, roosting or territorial activities differ between males and females or between young and adult. A literature search and correspondence with experts on this species of plover has indicated that no reliable method has been devised elsewhere, other than on the breeding grounds. Until this is done, no recommendation for a public hunting season can be made.

Bibliography: Johnston, David W. and Robert W. McFarlane, 1967. Migration and Bioenergetics of Flight in the Pacific Golden Plover. THE CONDOR, 69:160-161, 1967.

Plover Watching from Erika Wilson

20 August 1974, 7:10 a.m. Cloudy, warm, no wind; State Capitol grounds--lawns; one individual feeding. First observation of a migratory Golden Plover. Individual feeding on the lawn; in moult, the white edging mostly moulted and the black breast about 50% moulted to winter plumage.

22 August, 4:30 p.m. Clear, hot, light wind; Fort Shafter/H-1 Interchange; one individual feeding on the grass.

27 August, 1:00 p.m. Clear, hot, no wind; Fort Shafter Flats along Moanalua Stream; 6 individuals feeding on the grass and preening. These individuals were in various stages

of moult; one flew up and I noted that it was moulting a secondary feather from each wing.

27 August, 5:25 p.m. Clear, hot, no wind; King St. and Kapiolani Blvd.; one individual feeding on the lawn.

28 August, 4:55 p.m. Cloudy, humid, Kona wind; King St. and Kapiolani Blvd.; two individuals feeding on the lawn.

From rlr: 26 August 1974, about 6:30 a.m. I saw two plover walking about in Nuuanu Memorial Park, sites of the first birds to arrive. This is the plot on the right hand side as one enters this cemetery. I questioned one of the working men and he thought the two birds had been here for about a week. The birds were not as thin as they seem shortly after their arrival here. For about a week now I have heard the song of plover in flight.

Birds arrival at Nuuanu Memorial Park, Oahu Cemetery and Kyoto Gardens cemetery some time after the fifteenth of August and leave about the middle of May. I have been watching the birds at these sites for over eight years.

Some years ago while walking about the Kyoto Garden near dusk I heard the sound of hiccups. At that time a caretaker lived on the grounds of the cemetery. I discovered a very, thin, tired-looking plover was having an attack of hiccups. From the caretaker I learned that he made certain the Oriental cups had some sake with water in areas the arriving birds would land. The man told of the birds being tired from their flight. This caretaker also scattered some bird seed in the grass for the birds. Since the man no longer lives at Kyoto Gardens and the house is torn down, it is rare to see any plover in former staked out spots in this cemetery.

Mr. Jack Davis of Oahu Cemetery told me he does not allow any pesticides to be used on the cemetery's grass. The wintering plover do an excellent job in getting his grass clean of any worms. He feels like me that the birds are fewer each year. I also learned that Lot #16, of Oahu Cemetery seems to be the departure point in May for the plover. I was in that area one afternoon after 3:00 p.m., when I heard a loud sound of plover. Previous to that for a few afternoon about that time I had heard more birds in that area. So, I planned my walks for that time, as I knew it was near the date for the birds exodus from Hawaii. Suddenly, overhead there was a dark shadow and down came a big flock of plover, who squatted on the ground beneath the mock orange bushes and other vegetation. In the trees were a few plover making a lot of noise. I noted that the mating plumage was not as noticeable as that on the plover on the males across the street at Nuuanu Memorial Park. The birds clustered in groups and did not look the same as those who winter here. Mr. Davis of Oahu Cemetery told me that for years plover gather in this area at arrival and departure time. He wonders if this is a rest stop for birds bound elsewhere.

From Ross McKenzie, Auckland, New Zealand, 14 August 1974: In the May 1974 ELEPAIO, Vol.34, No.11, /page 129/there are notes about the leaving of the Golden Plover. /Kojima/was disappointed that some of them left before going into full plumage. I have been disappointed like that too, until some years ago I saw a photograph of a female at a nest. I think it was in one of your National Geographics, perhaps by Allen. It was only about half coloured. I have now looked up "The Shorebirds of North America", Stout, et al and "The Handbook of British Birds" Witherby, et al and find that it is indeed so with the female.

Here we consider that we have all or nearly all Northeast Asian ones, Pluvialis dominica fulva. In winter plumage when here it would hardly be possible to separate any of your P. d. dominica from P. d. fulva. My uncle, George C. Munro, considered that yours came on down to us and the North American authors seem to lump the two together too. Witherby says fulva comes down to India, Australia, N.Z. and the Pacific islands, meaning South Pacific as he does not mention Hawaii. I may have previously mentioned to you a difference in winter habitat. Yours winter miles inland and up to 8000 feet. Ours do not go more than $\frac{1}{2}$ mile from the coast. One small party was found in the centre of the North Island where there is a group of large lakes. This could indicate a difference in habit in addition to Witherby's description of plumage. ...

Have you heard that call? Plover is back! Since early August I heard calls, but I'll mark them maybe. But, on 24 August that familiar melodious whistle came over the trees very clearly and unmistakably. I stopped typing and listened. Two more whistles! MAHALO

for coming back. I noted the time; it was 0750. I felt wonderfully grateful and light hearted and was floating in the air, then at 0830 I heard a familiar chirp. Can it be? Rarely! Unbelieving, I looked out and sure enough a handsome mockingbird was hopping from one Christmas berry branch to another. Now, I excitedly waited for a song, but just three chirps and off it flew. What a morning! I ask for no more.

On 6 September as I passed by Kapaolona Field in Kaimuki (Moanalua and 11th Avenues), I saw not only two plovers with about 25% black feathers but also 8 Java sparrows (gray variety) feeding on the ground; so on 9 September I went back to check on the birds. The two plovers were feeding by the sprinklers but no Java sparrows.

Many of these exotics have been established, so when you are plover watching, please note the other birds and send in your findings to Kojima, 725-A 8th Ave, Honolulu, HI 96816.

Field Notes from Erika Wilson: Honolulu's Offshore Seabirds

Barbara Macauley, Erika Wilson, and their spouses went sailing along the Honolulu waterfront from Diamond Head Light to Sand Island on September 7, 1974. In the late afternoon many seabirds could be seen swooping over the waves. Most in evidence were Wedge-tailed Shearwaters, followed by Red-footed Boobies and Brown Boobies. A single Common Noddy passed us rapidly, and a single White Tern winged high over the sea.

At dusk, as we walked through Kapiolani Park, we heard White Terns calling. Six were fluttering among the ironwood trees, coming to roost in trees next to the bandstand and in trees on the Kalakaua Street median strip.

From Thelma Hensley: Ringed Turtle Dove

Has anyone seen a ringed turtle dove, also called collared turtle dove, sacred dove, temple dove or white turtle dove? If you have, please share your experiences with other members by writing to Kojima, 725-A 8th Avenue, Honolulu, Hawaii 96816.

Thelma Hensley reports one (an escapee) in Kahala. She wrote 30 August, "I hear that the 'white turtle dove' is still delighting her adopted friends."

BIRDS OF THE WORLD by Oliver L. Austin, Jr., page 145: ...Mention should also be made of the turtle doves of the genus Streptopelia, some 15 species of which are widespread throughout Eurasia and Africa. The Turtle Dove of Europe is well-known in poetry and folklore, and remains today fairly plentiful even though it is hunted throughout many parts of its range. Some of the closely related ring doves of China and other parts of the Old World have been introduced widely in other countries, notably in Hawaii and Australia. One species, the Ring Dove of the eastern Mediterranean region, has recently expanded its range into northern and western Europe by nesting in city parks, where it cannot be shot. ...

A FIELD GUIDE TO WESTERN BIRDS by Roger Tory Peterson, page 153: Ringed Turtle Dove (Streptopelia risoria) Field marks: Note the narrow black ring on the hind neck. Near size of Mourning Dove; much paler. Tail moderately long, rounded, with much white in the corners. In flight, the dark primaries contrast boldly with the pale coloration. Voice: A purring cooing; rising, then dropping in pitch. Where found: Origin unknown; domesticated widely. West: Established very locally in Los Angeles. Habitat: City parks. Nest: A frail stick platform in tree. Eggs (2) white.

Field Trip to Manana, 25 August 1974 by Robert Shallenberger

Twenty-eight members and guests made the August trip to Manana this year. After threatening weather reports, it developed into a beautiful day. With exception of minor engine problems, it was a thoroughly successful trip.

After a short description of the island, I led the group around the entire rim and down a wash bed within the nearly deserted Sooty tern colony along the west slopes. It is not normally our practice to make this extensive walk through the colonies, but this year's trip was sufficiently late and the remaining birds were dispersed enough to avoid any significant disturbance to the nesting birds. We all saw Bulwer petrel chicks, Wedge-tailed shearwater chicks and adults, Brown noddy tern eggs, chicks and adults, and a few remaining Sooty tern adults and recently fledged chicks. The treat of the day was an incredibly close observation of six Red-tailed tropicbirds, two of which repeatedly passed close to us as we lined up along the north rim of the crater. Even at this time, the birds were

frequently seen in their dramatic courtship flights. I checked the north rim from a boat the following day, and observed one pair of tropicbirds at the mouth of a large puka in the ledge below our observation spot. I suspect they were nesting, although the location was inaccessible on the vertical cliff face. If so, this would be the first reported nesting for the species on Manana in at least seven years.

Many of us also observed Golden plovers, Wandering tattlers, Black-crowned night herons (in the crater palm trees), Brown boobies and Red-footed boobies. It took four boat trips to get the entire crew off the island, but no one seemed to mind the short dunking.

From Erika Wilson: Clear, bright weather greeted the 25 people who gathered at the Oceanic Institute pier in Waimanalo for the August 25, 1974 field trip to Manana Island. A small power boat took groups of six from the pier to the island. Dr. Shallenberger led the first group into the water off Manana Island and up to the beach. While the others were ferried across, those on the island strolled along the beach and rock shelves. A Wandering Tattler was feeding along the rocks as the waves crashed about it. Overhead wheeled Wedge-tailed Shearwaters and Common Noddies.

Dr. Shallenberger gave an informal lecture on the birds of Manana. He drew a nestling Bulwer Petrel from its burrow to contrast it with nestling Wedge-tailed Shearwaters found along the beach; the former had black down, the latter light gray down. An adult Wedge-tailed Shearwater was also captured for our inspection. The group toured the rim of the old cone, many happily taking photographs of Common Noddy eggs, nestlings, and adults.

Soon 6 beautiful Red-tailed Tropicbirds arrived to dazzle us with their pure white plumage, red beaks, and red tail-feathers. One pair engaged in nuptial display flights that were greatly enjoyed by the group. We also came across a group of Sooty Terns; among them a juvenile, in black plumage with white spots, begged for a meal from the adults. Other birds seen included Red-footed Boobies, Brown Boobies, Great Frigatebirds, Black-crowned Night Herons, and Ruddy Turnstones. A rabbit and some mice completed the animal life on the island.

At noon we ate our lunch and several people went swimming before the boat returned to ferry us back to Oahu.

Testimony on HB 2150-74: Relating to the Protection of Indigenous and Other Desirable Animal and Plant Life to Rep. Richard A. Kawakami, Chairman, Water, Land Use and Development Committee from President Wayne C. Gagne, 6 February 1974

...Two years ago an attempt was made to amend the act which established the Animal Species Advisory Commission. These were S.B. 1899-72 and H.B. 2282-72. The Society then viewed these as attempts to eviscerate the Animal Species Advisory Commission and again open the flood gates to exotic animal introductions. So, we and several other groups strongly opposed these measures in testimony and both bills died in committee.

Now, we are faced with H.B. 2150-74 which is attempting to do many of the same things. We see little to support in the proposed amendments which we think would only hobble the effectiveness with which this active commission has been trying to protect our native biota, other than to correct the spelling of mammalogy, matters dealing with stenographic services and travel compensation on page 1; also part (6), page 4 which deals with disease tests by the Department of Agriculture, as well as the new definition of "indigenous" in part (f), p.5.

We find it disconcerting that in two instances there are materials added which do not appear in the present statutes and which are not underlined in the bill. These are: page 2, lines 11-13, beginning with "This" and ending with "island"; and also on page 4, line 2 which reads "or other desirable plant or animal". These are deleterious changes and we oppose both. Please note that the amendments suggested on page 3, line 7 would eliminate the public hearing requirement which is a very negative aspect of this bill.

We have a few amendments to suggest for your consideration. We would prefer that the Animal Species Advisory Commission be made advisory to both the Division of Fish and Game and the Board of Land and Natural Resources. This should end the needless quibble about this aspect of the Commission. Two years ago we suggested that the chief of the Division of the Fish and Game serve as a non-voting member so that he would not be in the predicament of voting to advise himself but at the same time could make his invaluable experience available during deliberations. Then, a plant ecologist could be added as a voting member to fill a puka in the expertise needed by this Commission.

To Rep. Jack K. Suwa, Chairman, House Finance Committee, 25 March 1974 and Sen. John T. Ushijima, Chairman, Senate Judiciary Committee, 8 April 1974 from Wayne C. Gagne

The commendable amendments suggested in this bill and its H.D. 1 are far outweighed by undesirable ones. The latter range from wording which could allow the entire scientific complement of the Animal Species Advisory Commission to be eventually replaced to that which would have each County Wildlife Advisory which are now dominated by hunting interests to be directly advisory to the Board of Land and Natural Resources. This is too much to swallow when we consider the fact that those who hunt make up only 1.1% of our population according to the recent State Comprehensive Outdoor Recreation Plan (SCORP).

We are interested in working with the hunters, but not in being run by them. The Animal Species Advisory Commission has been working satisfactorily thus far, not perfectly, but what does? We need to maintain an arrangement wherein there is strong input from the scientific community. This bill does not provide that.

Scattered throughout the bill are a number of sly "loophole modifiers" and slight, outwardly innocuous word changes of great importance which in concert serve to nullify the intent, purpose and the activity of the Animal Species Advisory Commission. This means that the public would lose one of the few avenues of input into helping to clean up the morass of mismanagement of feral pigs, goats and sheep and a small Noah's Ark of other exotic wildlife which continue to devastate our natural heritage. This is a grossly unacceptable prospect. We urge that this bill be tabled. ...

To Senator John T. Ushijima, Chairman, and members of the Senate Judiciary Committee; also to Big Island senators from Mae E. Mull, 8 April 1974

...This bill completely subverts the intent and purpose of Act 195 of the 1970 Legislature which set up the Animal Species Advisory Commission. That statute, now part of Chapter 187, HRS, has controls in it to protect indigenous Hawaiian plants and animals from the destructive effects of introduced game animals. HB 2150 eliminates those controls and makes it very easy for the Division of Fish and Game to introduce AXIS DEER to the Big Island.

HB 2150 emasculates the Animal Species Advisory Commission and gives the Division of Fish and Game a free hand to manage game animals wholly for the benefit of a few hunters--regardless of the impact on the land and on native wildlife. Under the existing law, the Division must give careful consideration to the environmental effects of introducing new game animals and the effects of managing existing game. HB 2150 takes away those safeguards. Please remember that all game hunted in Hawaii are introduced species. Not a single goat, pig, sheep or deer that is hunted is native to Hawaii. The effects of these alien animals on the endangered ecosystems of our isolated islands has been drastic.

Here are some examples of the damage HB 2150 would do:

(1) "Other desirable animal and plant life" is promoted to the same level as indigenous birds, plants and other wildlife. By this amendment, introduced game mammals are granted equal protection with indigenous Hawaiian species in the title and in the substance of the bill. How can native flora and fauna be protected if the introduced game animals that destroy native ecosystems are called "desirable" and are protected equally? In that conflict, so-called "desirable" game mammals are the winners, while native birds and plants are the losers.

(2) In HB 2150, all six scientist-members of the Animal Species Advisory Commission could be replaced by appointment of hunters. Then, the Division of Fish and Game would not have to listen to the rational biological findings and advice of experienced scientists in sound game management. The Division would hear only the voice and interests of the hunter, which often have little regard for the consequences to Hawaii's unique natural environment. Please note (page 1, (a)) that "six of the members shall be scientists...OR A PERSON KNOWLEDGEABLE IN FISHING, HUNTING OR CONSERVATION OF FISH AND WILDLIFE."

(3) Axis Deer could easily be brought from Molokai or Lanai and released on the Big Island under HB 2150. See page 2 of the bill, item (b), last sentence: "This in no way applies to releases of species already established on a particular island." Since Axis Deer are already established on Molokai and Lanai, the Commission would not give advice on releasing Axis Deer onto the Big Island.

We ask that you consider the economic impact of Axis Deer competing with cattle for grazing land on the Big Island. Also consider the real potential of disease transmission and the impossibility of eliminating the disease reservoir--as in the tubercular wild

cattle on Molokai that are in association with Axis Deer. In addition, please remember that sweet, green sugar cane is like ice cream to Axis Deer. Would it be feasible to fence the cane fields to keep out the deer?

The specific reason the Animal Species Advisory Commission was established in 1970 was to secure thorough, scientific evaluation of the impact Axis Deer would have on native Hawaiian ecosystems. Regardless of what some hunters may think, the Commission was not set up to increase the quantity of game or to add new game species onto public lands. The introduction of foreign game mammals has stopped on the mainland because federal and state governments have learned that the damage caused to natural ecological systems and to agriculture is much too costly. Hawaii must learn that lesson too--or suffer the devastating consequences. More damage has already been done to these islands by feral and introduced mammals than in any other state. An eminent scientist, Dr. E. Raymond Hall, wrote in 1963: "Introducing an exotic species is a destructive action resulting from the ignorance of well-meaning persons. ...Introducing exotic species of vertebrates is unscientific, economically wasteful, politically shortsighted, and biologically wrong." Can the Senate Committee and the Hawaii Legislature afford to ignore such good advice? The existing statute provides adequate safeguards on the introduction of game animals. Those controls must remain in the law and not be eliminated by HB 2150.

(4) Under HB 2150, the Commission's authority to advise the Division of Fish and Game is completely taken away. Instead, the Commission may advise the Board of Land and Natural Resources, if the Board requests their advice! The Division could do what it wants, listening only to the County Committees composed of hunters, and to draw up regulations without any input from the Commission. We stress the importance of scientific input into game management, because Hawaii's native ecosystems gain protection or lose protection by the way game is controlled through hunting regulations. The Hawaii Audubon Society is not against hunting. We strongly support longer hunting seasons on goats, pigs, sheep and deer. We want better access to State and private ranges for hunters to control game populations. Some enlightened hunters are members of the Hawaii Audubon Society. These hunters do not want Axis Deer on the Big Island, and they want more opportunities to hunt feral goats and pigs--both for table meat and to reduce the population pressure which is so destructive to native habitats. We strongly recommend that the Commission be allowed to stand, with the mandatory six scientists as members who shall advise on wildlife conservation and hunting regulations.

(5) HB 2150 eliminates the provision for a public hearing when a game animal is introduced by the Division of Fish and Game. Under existing law, when the Division recommends an introduction, a regulation must be drawn up and a public hearing held under Chapter 91, the Administrative Procedures Act. HB 2150 would permit Axis Deer or other game animals to be introduced to the Big Island or other islands without holding a public hearing and without drawing up a regulation. Please look at the deletion of the last phrase in Sec. 197-1.2(a). To eliminate a public hearing on such a vital public issue as this would be a backward step for this Senate Committee. Our endangered native ecosystems will lose the small protection they now have when only the hunter's voice is heard.

The Hawaii Audubon Society presents the strongest possible recommendation that HB 2150 not pass this Committee.

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HB 2150-74, HD 1 defeated

HONOLULU STAR-BULLETIN, 17 April 1974, p.A-4: Axis Deer Bill Died in Session

Those who oppose introducing axis deer to the Big Island can rest easy. The Star-Bulletin was wrong in indicating last week that a measure to restructure the Animal Species Advisory Commission had been passed by both houses of the Legislature. The measure, HB 2150, was approved by the House April 2 but died in the Senate Judiciary Committee. ...

HONOLULU STAR-BULLETIN, 4 September 1974, page E-22: The Armed Forces by Lyle Nelson

...Once again the Marine Base at Kaneohe has won the Commandant's Conservation Award. Col. Dean C. Macho's men won it for numerous reasons including helping round up junk cars, picking up debris on Pali Highway, cutting aircraft noise, diverting sewage from Kaneohe Bay to the ocean off Ulupau Crater and management of fish and wildlife resources.

And there were cuts in fire fighting training time and other air pollution efforts and help in the base neighborhood when there were oil spills.

Congratulations & MAHALO

For your information

The letter s is not a part of the Hawaiian alphabet. It is not used as a plural marker in Hawaiian. The plural form is distinguished in other ways.

'U'ina, the hamzah, is a guttural break in pronunciation between two vowels...and it is represented by an inverted comma. ...This guttural is properly a consonant, and forms an essential part of the words in which it is found. Its presence or absence in Hawaiian words marks distinct terms /'Ou = Bulwer Petrel, 'O'u = Honeycreeper/. ...For clarity...the 'u'ina should be indicated when writing...

Introduction to the Hawaiian Language by Judd, Pukui, and Stokes

Editorial policy: No possessive form in the vernacular names of birds--Bulwer petrel not Bulwer's petrel.

What is in a name? Which is preferable and why? If you know anything about the following bird names, please share your information with other members by writing to Kojima, 725-A 8th Ave, Honolulu, HI 96816: Laysan honeycreeper-Laysan honeyeater, Greater 'amakihi-Green solitaire, Grosbeak finch-Kona koafinch, Christmas shearwater-Christmas Island shearwater, Black noddy-Hawaiian noddy, Brown noddy-Common noddy, and the difference between noddy and tern.

ALOHA to new members:

Life - Rhys Walkley, 48 Iona St, Black Rock, Victoria, Australia 3193

Regular - Ann Y. Ayers, 2944 Creek Road, W. Palm Beach, Florida 33406

Koichi Masaki, P.O. Box 286, Waimea, Kauai 96796

C. Fred Zeillemaker, General Delivery, Hanalei, Kauai 96714

I have received OWL by William Service, a delightful book, and BIRDS IN JAPAN by Yoshimaro Yamashina, a field guide with beautiful color illustrations, from Miss Thelma Hensley and BIRDS OF THE WORLD by David Stephen with realistic paintings from Mrs. Ruth R. Rockafellow. I'll like to share these books with other members, so they will be available at the general meeting.

MAHALO,

Kojima

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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OCTOBER ACTIVITIES:

13 October - Field trip to Makiki Valley trail to study 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.

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

21 October - General meeting at Waikiki Aquarium Auditorium at 7:30 p.m.

Program: The Plight of the Green Sea Turtle in Hawaiian Waters by Dr. George H. Balazs, marine biologist, University of Hawaii

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