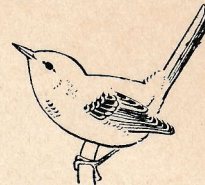


The Elepaio



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BIRDS OF HAWAII

By GEORGE C. MUNRO

The Hawaiian bird known as the Mamo (*Drepanis pacifica*) was first described by Gmelin in 1788. Quoting the description from Scott B. Wilson's "Birds of the Sandwich Islands," it was "Glossy black with the exception of the lower part of the body, the rump, the tailcoverts, both above and below, the feathers of the tibia and those of the anterior margin of the wing which are of a fine crocus yellow . . ." Its habitat was the deep forests of the island of Hawaii over which it was well distributed. Its food was nectar, also probably insects, probably it preferred, as did the Molokai mamo, honey from the lobelia flowers. It was about 8 inches in length. Henshaw described its flight as "not rapid but was smooth and well sustained." It reminded him of the cuckoo in flight. Its call according to Perkins, which he obtained from Hawaiians who were familiar with it was "a single rather long and plaintive note." It was so like the call of the black mamo of Molokai, which Perkins discovered, that he had no doubt of its correctness. Very little is known of this bird's general habits and nothing of its breeding habits. The mamo belonged to the ancient Hawaiian family of Drepanididae and its nearest relative, after the Molokai species, was the Iiwi.



The mamo was famed and prized as it furnished the most beautiful feathers for the Hawaiian feather cloaks. It was caught for this purpose with birdlime and the noose. It is not known whether the birds were killed or released after their feathers were taken. It is doubtful if the bird would have survived the shock and exposure after so much of its surface had been plucked bare. However, once firearms were introduced and the kapus removed, the remaining birds of this species were soon reduced in numbers till it became a rare bird 50 years ago. Perkins records that in 1880 one man bagged as many as twelve in one day.

When the Mills collection of mounted Hawaiian birds was acquired for the Bernice Pauahi Bishop Museum about the end of 1890 it was found to contain several specimens of the mamo. These had been collected by Mills about 1859, over 30 years before.

Mr. H. C. Palmer, Rothschild's collector, secured one in 1892. It was caught by a noose fixed on a haha plant by Ahulau, an old bird catcher, when camped in the Olaa woods with Edward Wolstenholme, Palmer's assistant at that time. Wolstenholme as recorded by Rothschild in his book "Avifauna Layson" was exceedingly proud of his catch, he said, "He is a beauty and takes sugar and water eagerly and roosts on a stick in the tent." He might well have been proud as no specimen had been recorded as taken for 30 years before and none for the 48 years since. The ones shot for their yellow feathers were destroyed and only their beautiful yellow feathers saved. It is tragic that this beautiful bird, so tractable that it fed soon after being snared was not better studied in the early eighties. It might thus have been saved for the enjoyment of future generations. Had the Hawaiian birds been saved even as they were half a century ago they might now be one of our finest tourist attractions.

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BIRDS OF HAWAII
and
Adventures in Bird Study
Bulwer's Petrel
By George C. Munro

Bulwer's petrel (Bulweria bulweri) the ou or ou-ou of the Hawaiians is a gentle, graceful little brownish black bird nearly 12 inches long. Like some others of the petrel order its legs are not strong and when trying to walk it has a clumsy appearance. But when sitting on the ground or swinging round on the wing it is pretty and graceful. Robert Cushman Murphy says of it: "Bulwer's petrel stands betwixt the Mother Carey's chickens and the larger petrels. It resembles the former, and yet is more closely related to the latter."

Bulwer's petrel was known to be present in the main Hawaiian group only by two specimens collected by Mr. Valdemar Knudsen on Kauai and two in the Gay and Robinson collection till Walter Donaghho brought a specimen from Popoia in June 1936. Since then the species has been found on six islands off the coast of Oahu. 170 have been banded there since 1937; 135 of these were on the two islands of Mokulua, where it is most numerous. Many more might have been banded and more returns recorded than the five so far taken but for the few banding trips taken to Mokulua. There it can be seen sitting on its egg on the bare ground under bushes of the broad leafed naupaka kahakai (Scaevola frutescens). A few are in holes in the low cliffs and under stones. I have not at any time found them in burrows. Mr. F. Gay told me in 1891 that the ou (as I then wrote it down) laid "a white egg in holes in the ground near the sea". He probably alluded to the islands of Kaula and Lehua off the coast of Niihau where the natives went yearly collecting young seabirds for food. There they are probably in hollows under stones as I have so found them for the most part on other islands off

the Oahu coast, except Mokulua where most of them nest under bushes. I have reason to believe that this species still nests in the low cliffs on the south east end of Oahu. Friends of mine have told me of sounds heard there that are much like what I think may be one of the mating calls of this bird.

I have found them with fresh eggs in June; one with newly hatched chick on August 11; some chicks in the down and some full fledged early in September. The young leave the island probably in October or November. I have not seen any on Moku Manu but it undoubtedly breeds there as I banded a pair on Kapapa farther to the north and away from the other islands where banding has been practiced.

In June and July of 1891 the Rothschild expedition found numbers of this species sitting on eggs under turtle shells on an islet of the French Frigate Shoal, under stones on Laysan and under grass on Lisiansky and Midway. Large numbers came in at night on Laysan and Lisiansky. Schauinsland saw it on Laysan, and Homer Dill saw it there in April, May and June in 1911 and estimated that there were a thousand on the island. Coultas saw one on Laysan in December 1938. Donaghho banded three on Sand Island of Midway in September 1940. It was numerous on Eastern Island of Midway nesting under grass in July 1891. It will lose those nesting sites as airfields are made there.

Only one egg is laid; it is white, almost round, blunt at the small end, $1 \times 1\frac{1}{2}$ inches in size. It is laid in June, hatched in August and young birds are full grown by November.

The calls of Bulwer's petrel are curious. On Laysan I described it as a croaking sound. Mr. Fred Hadden on Midway describes it as a "Hoomph, Hoomph, Hoomph". I heard it once on Kaohikaipu when it was like the low ow-ow of a small dog barking at a distance. Another we frequently hear is a chipping sound like the motor of a small boat, for

which at first I mistook it. It makes this when in the nesting holes and keeps it up for quite long spells without stopping. This is the sound heard on the coast of Oahu, at a time when no motor boat could possibly be near.

Unfortunately between one and two hundred have been killed by rats on Popoia in the last few years. Protection should be insured by exterminating the rats. This could easily be accomplished as the island is so small. This nice little bird would then increase there and be seen by visitors. Even elderly persons could see the bird sights on that interesting little island if some small improvements were made as suggested in a former paper.

For a long time this species was only known as of the Atlantic Ocean till Knudsen sent specimens from Kauai to the Smithsonian Institution for identification. We have still little knowledge of its range at sea in the Pacific.

Comments are sometimes heard about the damage done to birds by collectors. The experience on Popoia in the last few years is that one of Bulwer's petrel was killed for a specimen and anywhere from 100 to 200 were killed by rats. One freshly killed by rats is now a specimen in the Bishop Museum as is also the one collected by Donaghho. On other islands I have taken a number of deserted and dented eggs, of different species, for specimens for the museum and my young bird student friends. Also I have saved specimens of maimed birds of other species and those killed accidentally. Valuable specimens and records can thus be saved for study. Wings of birds killed by cats should be saved and labelled. The Bishop Museum has valuable records of two or more birds whose wings I found and saved on Lanai.

April 23, 1941

Family PHALOCROCORACIDAE, Cormorants.

Genus Phalocrocorax Brisson (1760)

16. Phalocrocorax carbo sinensis (Shaw & Nodder) Chinese or Fishing
(Pelecanus sinensis Shaw & Nodder, 1801) Cormorant.
Introduced to Kauai; not established.
Central & southern Europe, east to
China and India.
17. Phalocrocorax pelagicus pelagicus Pallas Pelagic Cormorant
(1811) Chance migrant; Laysan,
1896; Hilo (?) 1900.
N.E. Asia and Aleutian Is. to S. Cent.
Alaska; migrates south in winter.

Suborder FREGATAE

Family FREGATIDAE, Man-o'-war Birds.

Genus Fregata Lacépède (1799)

18. Fregata minor palmerstoni (Gmelin) Frigate, Man-o'-war Bird, Iwa.
(Pelecanus palmerstoni Gmelin, 1789) Hawaiian group, especially
N.W. islands. South to New
Zealand.

Order CICONIIFORMES

Suborder ARDEAE

Family ARDEIDAE, Herons, Bitterns.

Genus Demigretta Blyth (1846)

19. Demigretta sacra (Gmelin) Reef Heron. Doubtful chance migrant;
(Ardea sacra Gmelin, 1789) Maui (?). Southeastern Asia to Pacific.

Genus Nycticorax T. Forster (1817), Night Herons.

20. Nycticorax nycticorax hoactli (Gmelin) Black-crowned Night Heron,
(Ardea hoactli Gmelin, 1789) Auku, Aukuu, Auku kohili,
Aukuu kahili. Indigenous,
Hawaii to Kauai, one on Maui.
Central North America to Argentine.

Suborder CICONIAE

Family THRESKIORNITHIDAE, Ibises.

Genus Plegadis Kaup (1829), Glossy Ibises.

21. Plegadis guarauna (Linnaeus) White-faced Glossy Ibis. Occas-
(Scolopax Guarauna Linnaeus, 1766) ional migrant. North and South
America.

Family PHOENICOPTERIDAE, Flamingos.

Genus *Phoenicopterus* Linnaeus (1758)

22. *Phoenicopterus ruber* Linnaeus (1758) Flamingo. Introduced to Kauai, 1929. Not established. Atlantic coast of tropical and subtropical America.

Order ANSERIFORMES

Suborder ANSERES

Family ANATIDAE, Ducks, Geese, Swans.

Subfamily CYGNIAE, Swans.

Genus *Cygnus* Bechstein (1803)

23. *Cygnus olor* (Gmelin) Mute Swan. Introduced to Hilo, 1920, apparently established. Eastern Europe and Asia; south in winter.
(*Anas Olor* Gmelin, 1789)

Subfamily ANSERINAE, Geese

Genus *Chen* Boie (1822) Snow geese.

24. *Chen hyperborea* (Pallas) Lesser snow goose. Chance migrant, Maui, Oahu (1904). Breeds in Arctic America, probably also N.E. Siberia. South in winter on coast of Asia to Japan, and through most of temperate N.America, principally west of the Mississippi River.
(*Anser hyperboreus* Pallas, 1769)

Genus *Anser* Brisson (1760).

25. *Anser albifrons gambelli* Hartlaub American white-fronted goose. Chance migrant, Hawaii 1891, Molokai, 1895. Northwestern N.America; S. in winter to California.
(*Anser Gambelli* Hartlaub, 1852)

Genus *Philacte* Bannister (1870)

26. *Philacte canagica* (Sewastianov) Emperor goose. Chance migrant, Puna, Hawaii, 1903. Breeds on N.E. coast of Siberia and N.W. coast of Alaska, and on St. Lawrence Island; winters chiefly in Aleutian Islands.
(*Anas Canagica* Sewastianov, 1802)

Genus *Branta* Scopoli (1769)

27. *Branta bernicla nigricans* (Lawrence) Black brant. Chance migrant, Maui, 1891. Breeds: Arctic coasts of Siberia and N.America.
(*Anser nigricans* Lawrence, 1846)

Checklist of Hawaiian birds - E.H.Bryan Jr. - 5

28. *Branta canadensis minima* Ridgway Cackling goose. Chance migrant,
(*Branta minima* Ridgway, 1885) Kauai, 1891; Hawaii, 1900, 1901;
Molokai, 1902. Bering Sea coast of
Alaska and Aleutian Islands; winters
west of Rocky Mts., south to San Diego.

Genus *Nesochen* Salvadori (1895)

29. *Nesochen sandvicensis* (Vigors) Nene, Hawaiian goose. Endemic.
(*Anser sandvicensis* Vigors, 1833) Hawaiian islands, Hawaii, now
rare in wild state.

Genus *Chenonetta* Brandt (1836)

30. *Chenonetta jubata* (Latham) Maned goose. Introduced, Oahu, 1922,
(*Anas jubata* Latham, 1801) not established. Australia, Tasmania.

Subfamily ANATINAE, Ducks.

Genus *Anas* Linnaeus (1758)

31. *Anas platyrhynchos platyrhynchos* Linnaeus Mallard duck. Occasional
(*Anas platyrhynchos* Linnaeus, 1758) migrant; also domesticated.
Europe, Asia, N.America.
32. *Anas wyvilliana wyvilliana* Sclater Koloa maoli, Hawaiian duck.
(*Anas wyvilliana* Sclater, 1878) Endemic. Hawaiian islands;
accidental at Mazatlan, Mexico.
(*A. aberti* Ridgway)
33. *Anas wyvilliana laysanensis* Rothschild Laysan teal. Endemic on
(*Anas laysanensis* Rothschild, 1992) Laysan Island; nearly extinct
34. *Anas discors* Linnaeus (1766) Blue-winged teal. "Introduced from
Australia to Oahu, 1922," not estab-
lished. Central N.America; south in
winter to Mexico, West Indies, and
central S. America.
35. *Anas crecca carolinensis* Gmelin Green-winged teal. Chance mig-
(*Anas carolinensis* Gmelin, 1789) rant: Maui, 1892, Laysan, 1896;
Molokai, 1906. N.W. North America;
winters in southern U.S., Mexico,
W.I., and N. Central America.
36. *Anas acuta tzitzihua* Vieillot Pintail duck; koloa mapu. Winter
(*Anas tzitzihua* Vieillot, 1816) migrant. Arctic N.W. America, south
(*Dafila acuta* authors) to southern California; winters south
to Panama, W.I., and Hawaii.

Genus *Mareca* Stephens (1824) Widgeons.

37. *Mareca americana* (Gmelin) Baldpate. Chance migrant: Laysan,
(*Anas americana* Gmelin, 1789) 1896, Molokai, 1902. N.W. America;
winters south to West Indies.