

Type Specimens of Hawaiian Birds Named by Sanford Ballard Dole¹

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ABSTRACT: Sanford B. Dole described five nominal new taxa of Hawaiian birds in 1878, but because several of these names were quickly synonymized, their probable type specimens have been overlooked. Holotypes are here identified for *Accipiter hawaii* Dole (= *Buteo solitarius* Peale), *Drepanis rosea* Dole (= *Vestiaria coccinea* [Forster]), and *D. aurea* Dole (= *Loxops coccineus* [Gmelin]). The five specimens of *Pennula millei* Dole (= *Porzana sandwichensis millsii* [Dole]) have equal status as syntypes. Of the two supposed syntypes of *Fringilla anna* Dole (= *Ciridops anna* [Dole]), only one matches the original description and this is here considered to be the holotype.

THE FIRST ATTEMPT AT a reasonably comprehensive compilation of the avifauna of the Hawaiian Islands was that of Sanford B. Dole (1869), then a successful Honolulu lawyer and later to become one of the most prominent figures in Hawaiian politics (Allen 1988). When Dole (1878) revised this list, he introduced five new names based on specimens then in the possession of J. D. Mills, an amateur collector in Hilo. Mills is believed to have collected mainly in the 'Ōla'a area of the Puna District of Hawai'i Island, with his greatest activity probably having been around 1859-1860 (Manning 1978, 1979). There is no evidence that he obtained Hawaiian birds from any island other than Hawai'i.

Mills still possessed his collection of Hawaiian birds in 1884. The bulk of this collection came into the possession of C. R. Bishop between March 1884 and March 1888, to become the nucleus of the bird collection of the B. P. Bishop Museum (Manning 1979). Mills died on 11 May 1887, and his possessions were disposed of in at least two auctions, in Hilo in June 1887 and in Honolulu in May 1889. At the latter, two specimens of the flightless rail *Porzana sandwichensis*, which were then still part of the Mills estate,

were sold and eventually passed into the hands of Walter Lord Rothschild (Manning 1978).

Three of the new taxa proposed by Dole (1878) were soon regarded as pure synonyms of previously described species, with the result that their types have been ignored and overlooked. I have taken this opportunity to review all of the taxa proposed by Dole and to discuss the disposition of the type material, or presumed type material, upon which these names were based.

No collection data are now associated with any of these specimens and the following is assumed for all of them: Hawaiian Islands, Hawai'i, probably in the Puna District, 'Ōla'a; collected by J. D. Mills, probably around 1859-1860. The specimens of *Porzana* are said definitely to have been taken in 'Ōla'a "between the Kilauea crater and Hawelu's halfway house" (Manning 1978: 89); the former location of the latter was discussed later by Manning (1981: 61).

Accipiter Hawaii Dole, 1878:43
= *Buteo solitarius* Peale, 1848:62

ORIGINAL DESCRIPTION. "Io. 14 in. long. Dark brown above; throat dull white; breast mottled brown and white; dull white feathers on legs and abdomen: Legs feathered below tarsi. Strong back claw. Legs and feet light and scaly. Never before described. Confounded with *Strix delicatula* of Samoa and Fiji Islands in previous lists. Sparrow-

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hawk. . . . Habitat. Hawaii, rare on the rest of the group. . . . Mounted specimen in Mills' collection, Hilo, Hawaii."

HOLOTYPE. BBM 72 (preliminary catalog number 5521). Culmen (rhamphotheca missing), 27.1 mm; anterior margin of nostril to tip of bony beak, 15.8 mm; tarsus, 72.4 mm; tail, 132.7 mm; wing chord, 250 mm.

REMARKS. Dole gave the length as 14 inches (358 mm), which would probably have been correct when mounted, with the head perpendicular to the body. As now made up as a museum study skin, the specimen measures about 15 inches in length. Wilson and Evans (1891:180) stated that there were two specimens in the Mills collection, which Wilson must have seen after its purchase by Bishop in June 1887 and before his departure from the Islands in late 1888. Notes made by Alan Ziegler, former curator of the vertebrate collections at the Bishop Museum, suggest that BBM 720 and 721 may be from the Mills collection. Neither, however, can be types of *Accipiter hawaii* because both are dark-phase birds, whereas Dole's description is clearly of a light-phase bird. Furthermore, BBM 720 is actually a Short-tailed Hawk (*Buteo brachyurus*), a Neotropical species. There is no indication that BBM 721 was ever part of the Mills collection.

Wilson and Evans (1891) erroneously considered the name *Accipiter hawaii* to be referable to the vagrant harrier *Circus cyaneus*, of which there are no specimens in the Mills collection. Henshaw (1902) was correct in pointing out that Dole's description and measurements certainly pertain to *Buteo solitarius*. He cited correspondence with William T. Brigham saying "that all the hawks from the Mills' collection in the Bishop Museum are io," a statement further implying that there was more than one specimen. Nevertheless, Dole mentioned only a single specimen. That cited above is the only light-phase bird labeled as having come from the Mills collection, and it must therefore be regarded as the probable holotype of *Accipiter hawaii*.

Pennula millei [sic] Dole, 1878:54
= *Porzana sandwichensis millsi* (Dole, 1878:54)

ORIGINAL DESCRIPTION. "*Moho*. Not previously described. 6 1/2 in. long. Bill 3/4 in. long, black, straight, sides compressed, curved at tip. Tail not visible. Wings rudimentary, hidden in the long loose, hairy feathers. Plumage dark, dull brown, ashy under the throat; feathers loose, hairy, long. Lower part of tibia naked. Legs long, set far back. Toes 3 front, 1 back. Habitat uplands of Hawaii. Nearly extinct. Specimen in Mills' Coll.

"I feel confident that this remarkable bird belongs to the Rallidae, but am unable to fix its place more definitely. It is the only bird which the natives call *Moho*, which word is nearly synonymous with the New Zealand word *Moa*, which is their name for the gigantic wingless bird of that country. Regarding it as a new genus I have taken the liberty of naming as above, gladly thereby recognizing Mr. Mills' valuable services in preserving specimens of this bird, and giving others opportunities of studying it."

SYNTYPES. BBM 20 (preliminary catalog number 5469); BBM 21 (preliminary catalog number 5470); AMNH 546232; BMNH 1939.12.9.553 (Rothschild bequest); CUMZ 15/Ral/38/a/1. Measurements of all existing specimens will be presented in another paper dealing with the history and systematics of the species.

REMARKS. From internal evidence in the original description, the spelling "*millei*" is an obvious typographical error and has been correctly emended to *millsi* by virtually all authors using it. The history and nomenclature of this species is rather complex and will be dealt with in detail elsewhere.

The above five specimens are all from the Mills collection. Wilson and Evans (1894:172) implied that they all had been the basis for Dole's (1878) description, and because no information exists by which to assert that one or another was not available to Dole, they may all be regarded as syntypes.

Manning (1982) showed that Banko's (1979) tally of seven specimens of *Porzana sandwichensis* in collections was erroneous because one of the specimens, formerly on loan to AMNH but since returned to the Bishop Museum, had been counted twice. Both authors erred, however, in overlooking the specimen in Vienna (NHMW 50728), so that the world total is indeed seven. Certainly the Leiden specimen (RMNH 1), and in my opinion the Vienna specimen as well, originated in Cook's third voyage and were probably taken on the Kona coast near Kealahou Bay (Medway 1981). One or both of these are types of *Rallus sandwichensis* Gmelin (1789:717) and differ in plumage from the Mills series from 'Ōla'a. Pratt (1980) showed that there is recognizable geographic variation in plumage in the 'Elepaio, *Chasiempis sandwichensis*, on the island of Hawai'i, so it is not unreasonable that recognizable subspecies may have differentiated in an even more sedentary species such as a flightless rail. For this reason, I retain the designation *Porzana sandwichensis millsi* for the birds from 'Ōla'a.

Drepanis rosea Dole, 1878:44
= *Drepanis* (*Vestiaria* auct.) *coccinea*
(Forster, 1781:346)

ORIGINAL DESCRIPTION. "*Twipolopolo*. Not previously described. Similar to the latter [*D. coccinea*] in appearance, habits and food. 6 in. long. Wings and tail, dark brown. Last secondaries white; upper and lower tail coverts, greenish yellow; general plumage bright scarlet, interspersed with masses of greenish yellow feathers mottled with black. Bill 1 in. curved, white. Habitat whole group. Specimen in Mills' collection."

HOLOTYPE. BBM 31 (preliminary catalog number 5480). Culmen (tip worn), 21.4 mm; tarsus, 23.8 mm; wing chord, 71.8 mm; tail, 46.6 mm.

REMARKS. It has long been recognized that Dole's description of *Drepanis rosea* is that of the juvenile plumage of the 'Iwi, *D. coccinea* (e.g., Wilson and Evans 1890:11). The Mills specimens of that species now in the Bishop

Museum are BBM 26 to BBM 32, of which all are adults except BBM 31. This indeed has the plumage "interspersed with masses of greenish yellow feathers mottled with black." The only possible discrepancy with Dole's description is that the "upper and lower tail coverts, greenish yellow" does not apply particularly well to the lower coverts, the remaining ones of which are mostly red. Unless it can be shown that there is a missing juvenile specimen of this species from the Mills collection, BBM 31 has to be regarded as the holotype of *Drepanis rosea* Dole.

Drepanis aurea Dole, 1878:45
= *Loxops coccineus coccineus* (Gmelin, 1789:921)

ORIGINAL DESCRIPTION. "*Akakane*. Genus probably *Drepanis*. Not described in previous lists. 3 1/2 in. long. Bill sharp, slightly curved. Plumage, except wings and tail, orange; wings and tail dusky brown. Bill and legs brown. Toes 3 front, 1 back. M. Balleu has observed a brown variety which may be the female. Habitat Hawaii. Specimen in Mills' coll."

HOLOTYPE. Formerly BBM 67 (preliminary catalog number 5516). Now in the Rijksmuseum van Natuurlijke Historie, Leiden, where it is specimen no. 3 of its taxon. Culmen, 10.2 mm; tarsus, 20.6 mm; tail, 44.4 mm. Bill crosses to the left.

REMARKS. Dole's name *Drepanis aurea* was recognized as a synonym of the 'Akepa, *Loxops coccineus coccineus*, of the island of Hawai'i (Wilson and Evans 1890). The above-mentioned specimen is the only one of that species formerly in the Mills collection at the Bishop Museum, whence it was exchanged to the Rijksmuseum in Leiden in 1903, its status as a type not then being appreciated. I examined the specimen in Leiden in 1985.

Considerable confusion attached to Dole's name after Finsch (1880) applied it to the 'Akepa of Maui, now known as *Loxops c. ochraceus* Rothschild, 1893. For a while the name *aurea* was attributed to Finsch for the Maui bird, which went under the name *Him-*

atione aurea or *Loxops aurea* (e.g., Wilson and Evans 1893, 1896), a practice that was nomenclaturally unacceptable because, although Finsch was the first to recognize the Maui bird as distinct, he clearly used Dole's name for it, and Dole's name applies to the bird of Hawai'i.

Fringilla anna Dole, 1878:49
= *Ciridops anna* (Dole, 1878:49)

ORIGINAL DESCRIPTION. "*Ulaaihawane*. Not previously described. 5 1/2 in. long. Bill short, straight. Toes 3 front, 1 back. Wing coverts and breast red; throat, primaries and tail, black; secondaries white; head grey, merging into white on the upper part of the neck, and grey again on the back. Habitat Hawaii. Probably belongs to the genus *Fringilla*.

"This is a bird of remarkable beauty, its peculiar combination of colors producing a most harmonious and elegant effect."

HOLOTYPE. BBM 19 (preliminary catalog number 5468). Culmen, 11.8 mm; tarsus, 19.7 mm; wing chord, 81.5 mm; tail, 48.8 mm.

REMARKS. This is Dole's most lasting contribution to Hawaiian ornithology, because *Ciridops anna* is a highly distinctive species that certainly had never been named previously (see Olson [1992] for the history of the five known specimens of this extinct species). Dole (1878) did not specifically attribute this species to the Mills collection, but this was an oversight, because the same description, without a scientific name, appeared in Dole's (1876) list of the Mills collection prepared for the centennial exhibition in Philadelphia.

There were two specimens of this species in the Mills collection, the second of which was obtained from C. R. Bishop by Scott B. Wilson (Wilson and Evans 1893), who later sold it to Walter Rothschild. It is now in the American Museum of Natural History in New York, the repository of the bulk of Rothschild's collection. This specimen (AMNH 459008) is retained in the type series at that museum and is labeled as a "co-type" of *Fringilla anna*. The specimen in the Bishop

Museum was regarded by Wilson and Evans (1893:23) as "a very much finer example . . . with more grey about the head and neck." The AMNH specimen retains numerous brownish feathers from a previous plumage near the bend of the wing and in the vent, flanks, and secondaries. Although Dole's original description is rather general, the statement "secondaries white" precludes the AMNH specimen, because the secondaries are decidedly brown in the places that are white in the Bishop Museum specimen. Thus, I regard the Bishop Museum specimen as the only one in the former Mills collection that agrees with the original description. Consequently, it is the holotype and the AMNH specimen probably has no status as a type.

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