



Occurrence of the North American Coot (*Fulica americana americana*) in the Hawaiian Islands, with Comments on the Taxonomy of the Hawaiian Coot

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Recently (Pratt 1978) I suggested the possibility that American Coots from mainland North America (*Fulica americana americana*) might be regular, but until now largely overlooked, visitors to the Hawaiian Islands. Such birds would be readily distinguishable from the resident Hawaiian Coot (*F. americana alai*) by the size and shape of the frontal shield (a corneous extension backward from the bill onto the forehead). In mainland coots, (Fig. 1A) the frontal shield is usually a small maroon or dark brown callus sharply separated from the bill. This callus may swell and become bulbous at the peak of the breeding cycle (Gullian 1951), but during most of the year is so small that it is noticeable only at close range. The rest of the bill is white with a dark (actually deep maroon but appearing black at a distance) subterminal ring. Some individual variation occurs in both color and shape of the mainland coot's frontal shield, but these variations have not yet been adequately investigated. A few have white frontal shields. The vast majority of mainland birds fit the above description.

Hawaiian Coots exhibit large bulbous frontal shields that apparently do not vary seasonally. The shield is often high enough to be visible above the crown from the rear (Fig. 1B), a condition virtually never seen in the mainland form. The bill and shield of *alai* are color dimorphic with a white form, the shield of which varies from pale blue to white to cream, and a red form (Fig. 1C) with a blood-red shield accompanied by a dark ring near the bill tip. The two morphs were recognized by the Hawaiians, who gave them different names: 'alae-ke'oke'o for the white form, 'alae-awi for the red (Perkins 1903). The red morph resembles the North American coot in the coloration, but not in the shape of the bill and shield. Hawaiian coots of both morphs have a "hump" on the forehead in profile, whereas winter mainland coots virtually all have a smoothly rounded contour of the top of the head (Fig. 1). In *alai*, the white morph greatly outnumbers the red one, with less than 10% of the population exhibiting a red shield (Table 1). Specimens of the red morph are rare in museum collections as well. Two specimens obtained by Perkins (15/Ral/17/a/20 and 15/Ral/17/a/17) are now in the Zoological Museum of Cambridge University in England. I found only white morphs in collections at the B.P. Bishop Museum, Honolulu, and the American Museum of Natural History, New York, both of which have extensive holdings of Hawaiian birds. The National Museum of Natural History, Washington, D.C., houses the only specimen (USNM 565262) of the red morph I have been able to locate in the United States. It is a female that died in Hilo, Island of Hawaii, 16 January 1969. It looks like red morphs I have seen in the field and has the frontal shield unusually well preserved for a study skin.

Several recent sightings by many observers of possible mainland coots in the Hawaiian Islands prompted my search for previously overlooked specimens of the form from the islands. I found a coot specimen at the Bishop Museum (BBM 4645) that is the first unequivocal evidence of the occurrence of *Fulica americana americana* in Hawaii. The bird was taken at Kaalualu, in the Kau District, Island of Hawaii, by George C. Hewitt on 4 November 1919. The specimen was catalogued as *F. alai* but conforms in every feature of its bill and frontal shield to the mainland North American form. S.L. Olson and H. James (pers. comms.) independently discovered this specimen in the Bishop Museum, and concur that it is indeed the mainland form. No other coot specimen from the Hawaiian Islands in any of the above-mentioned museums even approaches the bill and shield configuration of *F. a. americana*. On the basis of this specimen, the mainland coot can be officially added to the list of Hawaiian birds (Pyle 1983a).

The existence of this specimen allows a greater degree of confidence in accepting the recent sightings of mainland coots in Hawaii as valid. Figure 1 shows photographs of several such birds present on Kauai in the winter of 1977. The supposed mainland coots can be easily distinguished by their distinctive profile from Hawaiian birds of both morphs. I saw several such coots in wetlands of Kauai that year, but failed to find any, despite searching for them, on brief visits to the islands in December 1978, March 1979, December 1979, September 1980, and March 1981-83 and 1985. For many years, the Division of Forestry and Wildlife (DOFAW) of the State of Hawaii has conducted semi-annual censuses of waterbirds in the main islands in January and August. In August 1980, DOFAW investigators began attempting to classify coots seen on the basis of frontal shield size and color during the summer census and extended the procedure to the winter count in January 1984. These data, from unpublished numbers, do not reflect actual coot numbers, because a large percentage of coots censused were not seen well enough to be classified with certainty. However, because those seen well were presumably a random sample, the data are useful in showing relative numbers. The winter censuses have not been conducted long enough to determine whether small-shielded, mainland-type coots are consistently more numerous in January than in August, as they were in 1984, the only year for which we at present have comparative data. Such a finding would be consistent with the hypothesis that the small-shielded birds are nonbreeding visitors from North America. These limited data could also be interpreted as showing occasional or irruptive, rather than annual, influxes of mainland birds (notice the apparent buildup and decline from

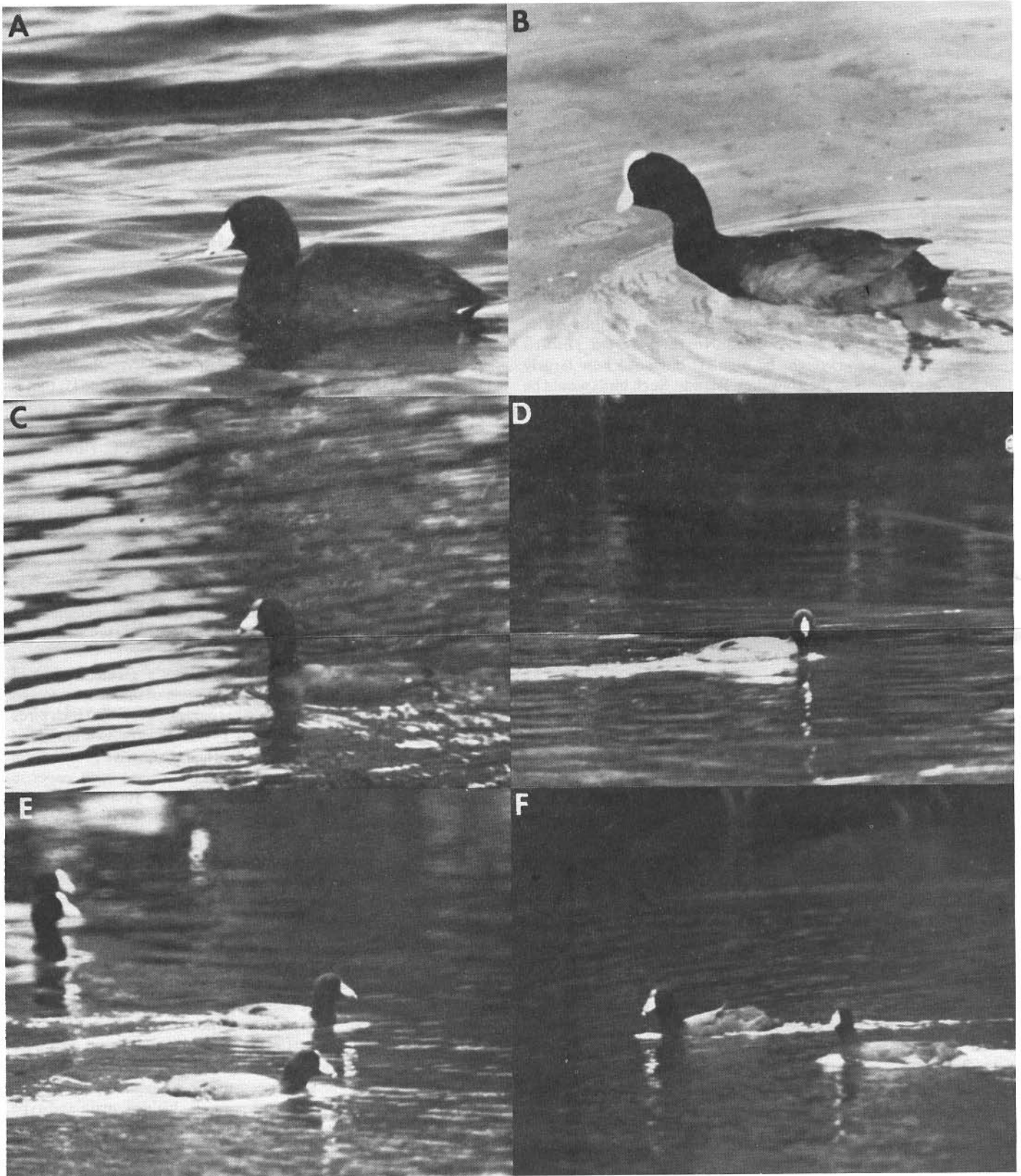


Figure 1. (A) Typical North American coot, Baton Rouge, La. (B) Typical Hawaiian Coot, white-shielded morph, Honolulu Zoo. Note that the frontal shield is high, bulbous, and visible from the rear over the top of the head. (C) Hawaiian Coot, red-shielded morph, Hanalei, Kauai, Spring 1977. Note that the shield is identical in shape to that of the white-shielded morph. (D) Probable mainland coot, Hanalei, Kauai, Spring 1977. (E-F) Same individual swimming with red-shielded Hawaiian Coots, Hanalei, Kauai, Spring 1977. All photographs by the author.

TABLE 1
Numbers and Kinds of Coots Recorded by State Censuses
in the Hawaiian Islands, 1980-85

Time of Census	<i>F. alai</i> , red morph	<i>F. alai</i> , white morph	<i>F. americana</i>
August 1980	35	464	0
August 1981	23	722	0
August 1982	9	429	4
August 1983	97	1530	13
January 1984	67	1799	35
August 1984	28	1000	11
January 1985	18	608	5

August 1983 through August 1984 reminiscent of the aforementioned situation on Kauai in 1977).

Hawaiian Coots are themselves apparently nomadic and irruptive (Ralph and Pyle 1977, unpublished DOFAW data). A coot specimen (USNM 503194) picked up dead on Tern Island, French Frigate Shoal, in 1965 and several coots seen and photographed (R.L. Pyle 1983b; P. Pyle 1984) in the Northwestern Hawaiian Islands in the summer of 1983 were all typical white-shielded *alai* and apparently wanderers from the main islands. Census data from the main islands have shown puzzling, wide fluctuations from year to year (Table 2). Various observers surmised in the past that such variations could result from large influxes of mainland birds in some years, but recent DOFAW data (Table 1) do not support this hypothesis. The largest number of small-shielded coots ever recorded (35 in January 1984) in the islands was hardly sufficient to account for the sometimes three-fold increases over previous years in censused coot populations. These apparent drastic fluctuations could result from as yet poorly understood irruptive movements in the resident coot population, from wide year-to-year variation in breeding success, or from undetermined problems in the censusing methods. Future DOFAW censuses should continue to differentiate between mainland coots and the endangered local form, particularly because the two may not be considered conspecific in the future (see below).

TABLE 2
Numbers of Coots Censused in the Main Hawaiian Islands
by DOFAW Personnel, 1977-1985

Year	Winter	Summer
1977	2330	1618
1978	1241	915
1979	422	1915
1980	1753	1000
1981	1243	997
1982	785	1213
1983	1425 ¹	4466
1984	2823	2298
1985	1537 ¹	

¹Island of Niihau not included.

Taxonomy

The Hawaiian Coot was considered a separate species until Bryan and Greenway (1944) listed it, without any supporting data, as a subspecies of the American Coot. Virtually all subsequent authors have followed suit, but none has ever presented any reason for allying the Hawaiian form more closely with *Fulica americana* than with other members of the *F. atra* superspecies, which comprises *atra*, *cristata*, *americana*, *caribaea*, *ardesiaca*, and *leucoptera* (Mayr and Short 1970; Fjeldsa 1982, 1983). These semispecies differ among themselves mainly in the shape and color of the bill and frontal shield and in the amount of white in the plumage. Most of them are, like the Hawaiian form, dimorphic in shield color. Insufficient data on the nature of such polymorphism and on the possible zones of sympatry (as between *americana* and *caribaea*) have led to considerable taxonomic controversy.

Gill (1964) considered *caribaea* and *ardesiaca* to be subspecies of *F. americana*. Mayr and Short (1970) and Ripley (1977) agreed with respect to *ardesiaca* but not *caribaea*. Fjeldsa (1982, 1983), however, presented data that show *F. ardesiaca*, the Andean Coot, to be a valid, dimorphic species that differs from *F. americana* in the shape, but not always the color, of the frontal shield. Its shield is high and bulbous as in the Hawaiian form, and its white and red morphs resemble those of *alai*. The Colombian form of American Coot, *F. americana columbiana*, is very similar to the nominate in both color and shape of the frontal shield (Fjeldsa 1983).

The systematic position of *caribaea* is less well researched and is highly controversial (Payne and Master 1983). Despite some reported evidence of sympatry of *americana* and *caribaea* (Bond 1976), many observers believe the two represent unevenly distributed morphs of a single species. Numerous coots that resemble *caribaea* in frontal shield morphology have been reported recently in North America (Clark 1985). Observers in California consider white-shielded coots to be relatively easy to find in low numbers (D. Roberson, pers. comm.), although I have found none among the thousands of coots I have seen in Louisiana. Considerably more data are needed before the degree of variation in shield color and shape in *americana* can be adequately documented. Until such data are available, the relationship between *americana* and *caribaea* will remain obscure.

The outcome of studies of the *americana/caribaea* complex should not, however, affect the taxonomic treatment of *alai*. In my opinion, the Hawaiian Coot should be accorded full species status as long as other components of the *F. atra* superspecies are so recognized. Because, like other New World forms, it has white undertail coverts, *F. alai* is probably closer to those species than to *F. atra* of the Old World, but classification of the Hawaiian form as a subspecies of *americana* has no more basis than considering it a form of *ardesiaca*. Indeed *F. alai* is more similar to the larger Andean Coot in color than it is to the similar-sized American or Caribbean forms. This observation need not mean that the Hawaiian form is more closely related to the Andean one, only that *alai* deserves equal standing within the complex. *Fulica (atra)* would thus include as component semispecies *atra*, *cristata*, *americana*, *ardesiaca*, *leucoptera*, *alai*, and possibly *caribaea*. This treatment is followed by Pratt *et al.* (1987).

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LITERATURE CITED

- Bond, J. 1976. Twentieth supplement to the check-list of birds of the West Indies (1956). Acad. Nat. Sci. Philadelphia.
- Bryan, E.H., Jr. and J.C. Greenway, Jr. 1944. Contribution to the ornithology of the Hawaiian Islands. Bull. Mus. Comp. Zool. 94:79-142.
- Clark, C.T. 1985. Caribbean Coot? Birding 17:84-88.
- Fjeldsa, J. 1982. Biology and systematic relations of the Andean Coot "*Fulica americana ardesiaca*" (Aves, Rallidae). Steenstrupia 8:1-21.
- Fjeldsa, J. 1983. Geographic variation in the Andean Coot. *Fulica ardesiaca*. Bull. Brit. Orn. Club 103:18-22.
- Gill, F.B. 1964. The shield color and relationships of certain Andean coots. Condor 66:209-211.
- Gullion, G.W. 1951. The frontal shield of the American Coot. Wilson Bull. 63: 157-166.
- Mayr, E., and L.L. Short 1970. Species taxa of North American birds: a contribution to comparative systematics. Publ. Nuttall Ornithol. Club, No. 9.
- Payne, R.B., and L.L. Master 1983. Breeding of a mixed pair of white-shielded and red-shielded American Coots in Michigan. Wilson Bull. 95:467-469.
- Perkins, R.C.L. 1903. Fauna Hawaiiensis or the zoology of the Sandwich (Hawaiian) Isles. Vol. 1, Part 4, Vertebrata. Univ. Press, Cambridge.
- Pratt, H.D. 1978. Do mainland coots occur in Hawaii? 'Elepaio 38:73.
- Pratt, H.D., P.L. Bruner, and D.G. Berrett 1987. A field guide to the birds of Hawaii and the tropical Pacific. Princeton Univ. Press, Princeton, NJ.
- Pyle, P. 1984. Observations of migrant and vagrant birds from Kure and Midway Atolls, 1982-1983. 'Elepaio 44:107-111.
- Pyle, R.L. 1983a. Checklist of the birds of Hawaii. 'Elepaio 44:47-58.
- Pyle, R.L. 1983b. Hawaiian Islands Region (summer season). Am. Birds 37:1028-1029.
- Ralph, C.J., and R.L. Pyle 1977. Hawaiian Islands Region (winter season). Am. Birds 31:376-377.
- Ripley, S.D. 1977. Rails of the World. David R. Godine, Boston.
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Editor's note: The following correspondence was received from MSSRS. King and Pyle. It relates to the February 1987 lead article on Micronesian birds.

16 July 1986

Dear Mr. Pyle & Engbring:

RE: "Checklist of the Birds of Micronesia"

I'm upset that you chose to question my record of Bristle-thighed Curlew (King, 1962) in print without first seeking documentation. There seemed at the time no need to use space to provide documentation for a bird which was not that unusual. And indeed it is recorded at several of the island groups, as well as the Marianas.

It is, of course, an easy bird to identify. I observed it in flight several times at fairly close range. It was with Whimbrels for comparison. The salient feature, of course, was the entirely dark lower back (no white wedge), contrasting with the paler rusty white rump, the juncture cut straight across (in the manner of a Wood Sandpiper).

I expect you'll publish a reconsideration.

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16 December 1986

Dear Mr. King:

This responds to a letter you sent to the 'Elepaio last summer about your Bristle-thighed Curlew sighting in Guam. Please forgive our delay in responding. The letter just got to me today.

Our decision to list your record as hypothetical in our checklist was a last minute one, and was based on the following two considerations: First, although Bristle-thighed Curlew is not difficult to separate from Whimbrel (if the observer is familiar with both species), there has been some confusion in recent years about its identification in Guam. In 1980 when John was conducting the USFWS Guam Forest Bird Survey, the biologist there believed that about half the wintering curlews were bristle-thighs, the other half Whimbrels. This was based on