

## THE DOWNY YOUNG OF OYSTER-CATCHERS

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IN the hope that knowledge of the natal down of young oyster-catchers might provide clues to the proper classification in the genus *Haematopus*, this study was begun in the fall of 1941. Through the kindness of the authorities of various American museums, most of the extant downy specimens were available for comparison.<sup>1</sup> Eight races were represented by excellent examples in a series of 48 true downies, plus six significant specimens in partial natal plumage; four other subspecies were represented by one chick each in partial juvenal plumage. Although we commonly expect the natal down of related species to be more similar than adult plumages, the downy plumages of all but one of the 12 forms I studied was individually characteristic.

The most recent review of the entire genus *Haematopus* is that by Peters (1934:231-34). Peters based his arrangement largely on the revision of the genus by Stresemann (1927) as supplemented by Salomonsen's revision of the European forms (1930) and Hartert's (1927) work on the New Zealand forms; Peters recognized 21 forms belonging to four species. Recently Falla (1939) showed that there were four species in the New Zealand region, where Peters had recognized but two forms, and considered them subspecies of the wide-ranging *Haematopus ostralegus*. In the present paper I have recognized as species two additional forms accorded only subspecific rank (as races of *H. ostralegus*) by Stresemann (1927) and by Peters. Thus I have returned to the older classification utilized by Murphy (1925) for the Western Hemisphere forms.

The natal down of oyster-catchers shows four principal colors, arranged in a fairly constant pattern. (1) Pure white down is present on more or less of the underparts in every form but *fuliginosus*. (2) Black down forms two parallel stripes down the back, a stripe at the top of the thigh, a dot on the lores, and a dot behind the eye; also spots and a median stripe on the pileum in some forms. (3) Some shade of drab down covers those areas of the upper parts which are not black, the throat, and (in the dark-bellied forms) most of the ventral surface.

<sup>1</sup> The following museums and authorities courteously permitted the loan of specimens for study at Houston, Texas: American Museum of Natural History—Robert C. Murphy; California Academy of Sciences—James Moffitt; Museum of Comparative Zoology—J. L. Peters; Field Museum of Natural History (including the collection of H. B. Conover)—Rudyerd Boulton and H. B. Conover; Fuertes Memorial Collection at Cornell University—George M. Sutton; Los Angeles County Museum (including the collection of G. Willett)—George Willett; Museum of Vertebrate Zoology—Alden H. Miller; San Diego Natural History Society—Laurence M. Huey; United States National Museum—Herbert Friedmann.

Before I began the present study I had examined both adult and young oyster-catchers at the California Academy of Sciences, the Museum of Comparative Zoology, the Field Museum, Cornell University, and the Museum of Vertebrate Zoology. Valuable help during the course of this work was rendered by Dr. Asa C. Chandler as well as by the museum authorities listed above.

(4) Some of the drab down of the upperparts is tipped with a shade of buff.

*Haematopus palliatus palliatus*

I examined seven downy specimens from Virginia and South Carolina. The rump and flank tipplings varied from Light Ochraceous Buff<sup>2</sup> to Ochraceous Buff (Ridgway's buff series runs: Pale Ochraceous Buff, Light Ochraceous Buff, Ochraceous Buff.); the lower back, wings, and face (that is, the auriculars and areas above and below the eye) were Avellaneous (a light, buffy drab). The sides and back of the neck were evenly Light Drab.

*Haematopus palliatus pitanay*

The single specimen examined from Peru was about three weeks of age; no differences in natal plumage from typical *H. p. palliatus* could be detected.

*Haematopus palliatus frazari*

I examined thirteen specimens from Lower California and Sonora. The rump and flanks were tipped with Light Ochraceous Buff; the lower back, face and wings were near Avellaneous, although varying from the true Avellaneous occurring in *H. p. palliatus*, to a slightly grayer shade. The sides and back of the neck were Hair Brown to Chaetura Drab. (Ridgway's Drab series is: Pale Drab Gray, Drab Gray, Light Drab, Drab, Hair Brown, Chaetura Drab, Chaetura Black.) Three or four small black spots were present on the pileum of three specimens, but such spots were in no case so extensive, so numerous, or so anteriorly placed as in the Old World oyster-catchers (see below). Bancroft (1927:52) mentioned and figured two *frazari* chicks from Scammons Lagoon, Lower California, which were the offspring of one normal plumaged, and one "black-bellied", *frazari* parent. These downies were collected by Laurence M. Huey, and formed part of the series of specimens I used. One member of the pair (San Diego Society Natural History 10538) was an average *frazari* chick, perfectly matching specimens from the Gulf of California. But the other (S.D.S.N.H. 10537) had several black spots on the back of the head (a character shared by two other *frazari* chicks in my series) and largely Drab Gray underparts. There was a triangular white patch on the upper breast, as in *bachmani*, but the ventral dark down was much lighter than in chicks of that species (Drab Gray rather than Drab).

*Haematopus palliatus galapagensis*

Examination of a chick entirely in the natal down may point to recognition of this large-footed form as the full species originally

<sup>2</sup> Throughout this paper, capitalized color names are used only where the color of the area described has been compared and identified with Ridgway's (1912) color key.

described by Ridgway (1886:331). The single specimen available (American Museum of Natural History, 735002) was about three weeks old when taken; it was the same one described by Rothschild and Hartert (1902:42) and referred to by Murphy (1936:982). The down of the throat was darker (Chaetura Drab) than the darkest *frazari*; the down of the back seemed to be Drab. The down remaining on and near the rectrices lacked the buffy tipplings found in *frazari* and *H. p. palliatus*, and thus the entire tail was a dense black.

#### *Haematopus bachmani*

Of this species I examined 15 specimens from Alaska, British Columbia, and California. Unfortunately, the only young specimen available from the Santa Barbara Islands (George Willett's No. 752) was a bird nearly three weeks old. Down still present on this specimen seemed to be identical with that of northern chicks. The Light Ochraceous Buff or Ochraceous Buff tipping was in this species less extensive than in *palliatus*, resulting in a change in the ground color of lower back, wings, and face from Ridgway's brown series (e.g., Avellaneous, as in *palliatus*) to the drab series, accompanied by a darkening to Drab. The sides and back of the neck were very dark—Chaetura Black.

The most obvious and constant difference between the two species, *bachmani* and *palliatus*, so far as natal plumage was concerned, was in facial coloration. The side of the head of a *palliatus* subspp. chick was pale, almost buffy; that of a *bachmani* youngster (Webster, 1941: 156, fig. 6) was dark. The propriety of recognizing *bachmani* as a full species is questionable. I am sure that *bachmani* and *palliatus* are more closely related to each other than are *palliatus* and *ostralegus*. But until intergradation has been demonstrated in Lower California, where the two forms are co-resident, I hesitate to call them conspecific.

#### *Haematopus ater*

I examined three specimens, from Chile and the Falkland Islands. As Murphy (1925:15 and 1936:989) noted, the white ventral area, although much more extensive than in *bachmani*, did not cover the entire belly and flanks as in *palliatus*. Peculiar to this species was the restriction of Pale Ochraceous Buff tipplings to very narrow strips along the margins of the dorsal and femoral black stripes. This localization of brown pigment resulted in a Mouse Gray color of back, lower belly, and head.

#### *Haematopus leucopodus*

Two specimens, from Tierra del Fuego and the Falklands, were examined. The chief point of interest was the remarkable similarity to *occidentalis*, from the British Isles. The pileum was prominently marked with black; the back was Drab, tipped sparsely with Ochraceous Buff; the upper breast, the throat and the sides of the neck were

Hair Brown. This species could, however, be differentiated from the downy English oyster-catcher (*H. ostralegus occidentalis*) by the basally black toenails and dark colored upper breast. The adult of this species has peculiar short toes and broad nails, but no trace of such characters could be detected in the chick.

*Haematopus ostralegus occidentalis*

I examined seven specimens from the British Isles of this, the best-known of all oyster-catchers. In view of the alleged relationships between this form and *palliatu*s (Murphy, 1925:2-4 and 1936:973-74; Stresemann, 1927:72-73) it is interesting that the New World species most closely resembling it in natal plumage are *leucopodus* from the South Atlantic and *bachmani* from the North Pacific rather than *palliatu*s of eastern North America. The entire upperparts and face were Drab (save for the usual black stripes); the sparse tippings of the upperparts were Ochraceous Buff. The sides of the neck were Hair Brown, and the pileum was prominently spotted with black, as in *leucopodus*, but the sooty brown of the throat did not extend onto the breast as in that species.

Although I examined no downy young of *H. o. malacophaga*, from Iceland, it seems reasonable to assume that few differences in natal down would have been found, because adult *malacophaga* are differentiated from adult *occidentalis* solely on the basis of size (Salomonsen, 1930:56).

*Haematopus ostralegus longirostris*

The single specimen available, from Western Australia, was over three weeks old. The down left on the neck and throat was darker than that of *reischeki* (see below) and lighter than that of *occidentalis*.

*Haematopus reischeki*

This form of New Zealand oyster-catcher has recently (Falla, 1939:263) been assigned specific status, although several earlier workers, *i. e.*, Stresemann (1927:77), Hartert (1927:16) and Oliver (1930:278), regarded it as some kind of color variant or hybrid. Falla's studies led him to suggest (1939:264) that this form of oyster-catcher, from northwestern New Zealand, was more closely allied to *H. ostralegus longirostris* from Australia than was any other New Zealand species. But Falla, although he photographed a nest of newly hatched young (1939:266, fig. 2) was unable to collect specimens for a description of the natal plumage.

A single specimen (A.M.N.H. 735098) bore the label, "*Haematopus unicolor*; Kaipara Beach, near Helensville, North I., N. Z.; Robin Kemp, Jan. 9, 1915; stolen from a stoat; beak greenish gray, irides black, feet gray." Because Falla listed *reischeki* from Helensville, and indicated the hatching time of this species as January, it may be

presumed that this specimen was the undescribed natal form of *reischeki*, and that the designation "*unicolor*," on the label indicated black or largely black parents. This chick was paler than even the lightest *palliatus* is gray brown and *ater* is sooty brown. The sides of the neck World forms, in marked contrast to the adult plumages of these species. For in the adult plumages *reischeki* is glossy black dorsally, whereas *palliatus* is gray brown and *ater* is sooty brown. The sides of the neck were Mouse Gray, the back largely Light Drab, the down tippings Pale Ochraceous Buff.

#### *Haematopus finschi*

Although I examined no specimens of this form (native to South Island, New Zealand), which was well described in the natal plumage by Falla (1939:261), it might be mentioned that his description is very similar to that of *reischeki* given above. His figure (1939:266, fig. 1), however, suggests that *finschi* is somewhat darker, and more gray, than downy *reischeki*.

#### *Haematopus fuliginosus*

I examined two specimens, one from Bass Strait, the other from Western Australia. This species was peculiar among downy oyster-catchers in its even, rusty coloration (although the black marks on the pileum were plain) and in its complete lack of white plumage. The belly was Light Drab; the neck, throat and back were Hair Brown; the tippings of the dorsal down were Wood Brown.

#### *Haematopus unicolor*

Falla (1939:265) restricted the name "*unicolor*" to entirely black oyster-catchers from the rocky shores of southern and middle New Zealand. Oliver (1930:279) described the downy chick of this form as, "covered with blackish brown down," a description which would fit *fuliginosus*; in the single specimen I examined (A.M.N.H. 735143; no locality but "New Zealand"; largely in juvenal plumage), down remaining on the head and neck was only slightly lighter than that of *fuliginosus*; down left on the lower back was nearest Hair Brown, perhaps very slightly lighter than that of *fuliginosus*.

### DISCUSSION

Murphy (1925:2-4) showed that the adult of *palliatus* has retained essentially the juvenal plumage-phase of European *ostralegus*, differing chiefly in the extent of the white spotting of the primaries, a variable character which is associated with geographical distribution in oyster-catchers throughout the world. The differences between New World and Old World oyster-catchers are given in Table 1. It is my opinion that the two should not be regarded as conspecific.

TABLE 1  
COMPARISON OF NEW AND OLD WORLD OYSTER-CATCHERS

	NEW WORLD FORMS	OLD WORLD FORMS
	<i>Adults</i>	<i>Adults</i>
Irides:	yellow	red
Feet:	white or white tinged with pink	red
Back:	brown (except <i>leucopodus</i> )	glossy black
Rump:	brown or black	white (except <i>reischeki</i> and black-bellied forms)
	<i>Downy Young</i>	<i>Downy Young</i>
Nails:	dark at base	light at base
Pileum:	unspotted, or slightly spotted with black (except <i>leucopodus</i> )	spotted and streaked prom- inently with black

## SUMMARY

Comparison of 54 specimens of the genus *Haematopus* in natal plumage led to the following original conclusions: *H. palliatus frazari* chicks are darker than those of the nominate race and tend to be marked more often with black on the parietal region. *H. bachmani* chicks have a dark, drab face; *H. palliatus* subspp. chicks have a pale, buffy face. Chicks of *H. ostralegus occidentalis* and *H. leucopodus* are very similar.

Several differential characters (of both adult and young) are listed which distinguish Old World and New World oyster-catchers.

*H. leucopodus* from the Falkland Islands and South America seems to be the nearest thing to a living connecting link between eastern hemisphere and western hemisphere forms. In this species the plumage of both adults and young is close to the Old World type, the adult flesh colors are those of the New World type, but the configuration of the adult toes and toe-nails is unique.

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