

TABLE 2. Differences in per cent reflectance between the black male cowbirds and other birds tested at same wavelengths.

Bird and color	Wavelength ( $\mu$ )											
	400	500	600	700	800	900	1000	1100	1200	1300	1400	
♀ cowbird (brown)	2	4	6	7	13	14	15	13	11	6	4	
White-crowned Sparrow (brown)	3	5	7.5	10	12	14	18	16	15	13	11	
Zebra Finch (gray)	4	6.5	10	12	16	19	19	18	17.5	17	16	
Zebra Finch (white)	59	75	83	85	80	75	67.5	50	47.5	32.5	28	
Goldfinch (yellow)	6	28	36	39	45	43	39	32	28	21	16	

of insolation between, say, black, brown, and gray are smaller than between the wavelengths of 800–1000  $\mu$  and one would not expect a black bird to have much, if any, advantage over a brown or gray bird. Whereas, if using the longer wavelengths 800–1000  $\mu$ , the differences in absorbance are greater (though not much) and one might expect very slight differences in their ability to use insolation in thermal regulation. Above 1100  $\mu$ , and especially above 1400  $\mu$ , differences in absorbance between various colored birds are small (Lustick 1969; Heppner 1970) and Hammel (1956) has stated that most animals, regardless of color, ab-

sorb long wave radiation as a black body. These data suggest that dark pigments (black, brown, gray) might be selected over light pigments (white, yellow) in a cold climate and not that black is selected over brown or gray pigments in a cold climate.

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TABLE 3. Energy conservation of birds receiving artificial insolation over those not receiving artificial insolation at 10°C.

Bird and color	n tested	$\bar{x}$ % energy conserved
Cowbird ♂ (black)	5	25.0
Cowbird ♀ (brown)	3	24.9
Zebra Finch (gray)	4	25.1
Zebra Finch (white)	5	6.5

## PELAGIC OBSERVATIONS OF THE JAPANESE WHITE-EYE IN THE CENTRAL PACIFIC

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During the period 1963–1965 biologists of the Pacific Ocean Biological Survey Program recorded Japanese White-eyes (*Zosterops japonica*) on several occasions at sea between Oahu and Johnston Atoll and on Johnston Atoll itself. All sightings undoubtedly are from the introduced and well established Hawaiian Islands population. The 11 pelagic sightings were made during three different periods, all in late fall and early winter. In addition, at least five different individuals were seen or collected on Johnston Atoll, four of them between mid-October and late January and a fifth in late March.

Nine of the pelagic sightings were in an area some 100 mi. in diameter and centered about 175 statute mi. SW of Kauai. Both of the remaining sightings were in early morning and followed sightings of the previous day; they may represent birds which remained with the ship, undetected, overnight. One sighting was approximately 360 mi. SW of Kauai and about 340 mi. NE of Johnston Atoll. The second was

about 310 mi. SSW of Kauai and about 410 mi. ENE of Johnston Atoll. Details of the pelagic sightings follow.

4–5 December 1963. Calling was heard at 13:55 and a flock of 42 birds appeared flying S about 200 ft above the water. At 15:45 calling was again heard and a single bird appeared flying S about 50 ft above the water. It circled the ship twice, once flying over the bow. At 07:30 next morning two birds alighted on the ship and were collected. Weather conditions were: scattered high clouds, 10 mile visibility, wind 5–10 knots from NNE to SSE.

3 November 1964. At 17:29 two birds appeared and one attempted to alight on the ship but then flew off. Weather conditions were: scattered clouds, 10 mile visibility, wind 4–10 knots from NNE to ENE.

9–10 November 1965. Calling was heard at 14:18 and two birds flew past the ship at 15:23. Calls were heard again at 07:39 next morning but no birds were seen. Members of the ship's crew reported that one might have been on board but this could not be confirmed. Weather conditions were: scattered clouds, 4–10 mile visibility, wind 4–10 knots from ENE to NE.

16 November 1965. Calling was heard at 13:55 and a flock of 15 appeared flying S or SE. One was collected. At 14:27 two birds approached about 50 ft above the water and a second was collected. Weather conditions were: partly cloudy and overcast, wind 18–25 knots from NNE.

30 November 1965. At 12:10 one flew past the ship in a southeasterly direction. At 15:50 calls were again heard but no bird was seen. Weather conditions were: scattered broken clouds, 10 mile visibility, wind 5-12 knots from NE to E.

Single birds were seen on Sand Island, Johnston Atoll, from 11 to 14 October 1964 (collected) and on 15 December 1965. Single birds were seen on Johnston Island on 30 November 1965, 29 March 1965, and 31 January 1966. The 30 November bird was a very weakened individual collected following four days of NE winds; all other birds were in good condition.

White-eyes were introduced to Oahu from Japan by the Hawaii Board of Agriculture in 1929 with subsequent importations by the Hui Manu (a private organization devoted to the importation of exotic birds) and by private individuals (Caum, Occ. Papers Bernice P. Bishop Mus. 10:44, 1933). By 1933 they were established on Oahu and perhaps on Kauai, and they now occur on all of the main Hawaiian islands in most wooded habitats. The extent of the movements and dispersal of the Hawaiian populations is not known, but they are capable of, and probably do undertake, flights between islands. The presence of several flocks more than 200 miles from land suggests that the individuals observed on Johnston Atoll were natural arrivals. It is also perhaps significant that all of the sightings have been down-wind from the main Hawaiians and that the POBSP recorded

no white-eyes on the northwestern Hawaiian Islands (Clapp and Woodward, Proc. U.S. Natl. Mus. 124, No. 3640, 1968) during approximately the same period. Significantly, although coverage of most of the Northwestern Hawaiians was less complete for the late fall and winter period, no birds were reported from either Kure Atoll or French Frigate Shoals, both of which have had extensive biological coverage.

An investigation of movements of the main Hawaiian white-eye populations would be rewarding and might document regular post-breeding movements with a down-wind dispersal of storm blown birds. White-eyes of several species are widespread on southwest Pacific and Indian Ocean islands, suggesting a relative ease of dispersal. It is conceivable that some of the Hawaiian birds may eventually reach and colonize well vegetated islands in the Line Islands or Marshall Islands.

The following POBSP personnel contributed one or more of the observations mentioned: David Bratley, Richard Crossin, Robert Delong, Charles Ely, Patrick Gould, Norman Heryford, Dayle Husted, Cameron Kepler, Dennis Stadel, Jeffrey Tordoff. George Watson critically reviewed the note and made helpful suggestions. This is Paper No. 66, Pacific Ocean Biological Survey Program, Smithsonian Institution, Washington, D. C.

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## IMPERFECT ALBINISM IN A RED-TAILED TROPICBIRD

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In a recent survey of albinism in North American birds, A. O. Gross (Bird-Banding 36:67, 1965) found no records of albinism in the Phaethontidae, nor have we been able to find any previous records of albinism in this family from other parts of the world. The following specimen of a Red-tailed Tropicbird (*Phaethon rubricauda*) from the Northwestern Hawaiian Islands is thus of interest.

An albinistic, nearly full-grown nestling was collected by Huber on 26 July 1965, Eastern Island, Midway Atoll. According to Gross' terminology, this bird is an imperfect albino, i.e., one in which pigment is reduced or diluted in the plumage and/or eyes and/or soft parts (also termed "leucism" by Harrison in A. L. Thomson [ed.] A new dictionary of birds. McGraw-Hill, New York. 1964. p. 643.)

The specimen (USNM 495860) exhibits the usual dark barring found in the young of this species but the intensity of pigment is far less than normal (see fig. 1). In life, the bill was flesh-colored instead of the usual black or grayish-black, the distal portion of

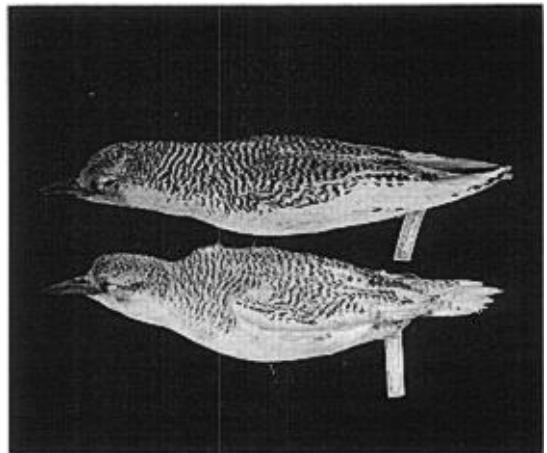


FIGURE 1. An albinistic nestling (lower). A normally plumaged (upper) tropicbird of about the same age from Johnston Atoll.

the foot was light whitish-gray rather than dark gray, and the legs were white rather than gray. Claws were dark horn-colored rather than black, but the eye color, evidently normal, was dark brown.

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