

Here is a case that may well put to reflection those who decry all records of rare birds unsubstantiated by a specimen. A very definite record and its required specimen have unworthily stood the test of more than forty years. Better for the cause of truth had this bird been seen convincingly by an experienced and authoritative observer and put on record having, happily, been allowed to keep its freedom!

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A REVIEW OF THE WEST INDIAN BLACK SWIFTS.

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SOME time ago in arranging the collections of this species in the American Museum of Natural History I was struck not only with discrepancies in the statements of writers on this group, but also with the fact that old and fresh specimens from one island differed more from each other than comparable specimens of two supposed races from two different islands. Further, Black Swifts are so difficult to collect, that no Museum in this country possesses an adequate series, and nothing definite is on record regarding individual or seasonal variation. It was obvious, therefore, that no advance could be made without good representation of seasons and localities. I am accordingly greatly indebted to Mr. Outram Bangs and Dr. Charles W. Richmond for loaning me the invaluable specimens in their respective institutions, without which this paper could not have been written. Last fall I was able to examine the series in the Field Museum of Natural History.

As is now well known the true *Nephoecetes niger niger* is from Santo Domingo. In 1910 Mr. Ridgway briefly described *N. n. jamaicensis* from Jamaica, as being "much darker (especially the adult female)." The group is fully discussed, however, in the 'Birds of North and Middle America,' Part V, pp. 704-709 including footnotes. This shows that he had one male from Cuba, five females from Santo Domingo, and six males, three females from Jamaica. Of this material only that from Jamaica was in part recently collected. He also had a male from Dominica and two females from Guadeloupe which he was unwilling to identify

positively, but referred them doubtfully to *jamaicensis*. He states, however, that they are "not quite so dark as [specimens] from Jamaica, and may be different, but the series examined is much too small to settle the question." At first sight, therefore, it is a matter for some surprise that Mr. Cory in 1918 described the Guadeloupe bird as *darker* than *jamaicensis* and averaging smaller. He had a series of 19 old specimens from Santo Domingo, one old specimen from Jamaica, and 15 very poor skins from Guadeloupe. These apparently utterly contradictory statements can, I think, be explained.

Turning now to a study of the 44 specimens before me, five islands are represented, and what is most important both old and recently collected skins are available from each of these islands. Before subspecific variation can profitably be discussed, variation that is individual, sexual, seasonal, or based on age of bird and specimen must first be understood.

a. Sexual variation. This has already been correctly described by Mr. Ridgway. The tail is less emarginate in the female; the size averages smaller; the underparts from the breast down are scarcely darker than the throat and not so sooty black as in the male; in all specimens seen by me the feathers of the lower abdomen are indistinctly tipped with lighter. Hartert (Catalogue of Birds, Brit. Mus., XVI, 1892, page 94) errs in regarding the adults as similar, and the birds with light tips to the feathers below as immature.

b. Seasonal variation. Specimens collected by Beck in Santo Domingo the first week in June show by their sex organs that they were breeding or about to breed. If fresh April, May, and June birds be compared with August and September specimens, certain color differences are apparent. The light tips to the feathers of the forehead and crown largely disappear, are confined chiefly to the sides of the forehead, and are light brownish instead of whitish. In females the light tips to the feathers of the lower abdomen also change from grayish to brownish, and are reduced in number. In several specimens their presence at this season is difficult to detect. Several fresh June specimens apparently share the characters given above for fall birds, but they prove on closer examination to have been shot in the side of the head.

c. Immaturity. While I am quite unable to state how long a time is required to acquire fully adult plumage, certain fall specimens are in addition to the characters given above so much shorter winged than others from the same island that I feel convinced that this is evidence of immaturity. In addition males resemble females in being practically uniformly colored below, and the light tips to the feathers of the forehead are sometimes entirely lacking.

d. The age of the skin. It is now beginning to be recognized that many bird-skins fade with age. This is particularly true of black birds which tend to get browner with age. It is certainly true of the Black Swifts. An old male from Cuba collected by Gundlach is not only browner below than a male collected in 1910, but is also browner than a female collected in 1917. This general principle holds true island for island throughout the series. When proper allowances for season, sex, and age are made, not the slightest color differences of subspecific value can be detected. As a general rule fading affects the black of the underparts first of all, and occurs least often on the back. Mr. Ridgway was entirely correct in stating that recently killed specimens from Jamaica were much darker than birds shot in Santo Domingo in 1883. On the other hand Mr. Cory's Guadeloupe birds shot in 1883 are actually darker than his very old Jamaican specimen. One other point is that a certain amount of fading takes place almost immediately. No males for instance, in the entire series, are so sharply contrasted below as the Beck series from Santo Domingo taken in 1917. The degree of this contrast is appreciably reduced in specimens taken between 1904 to 1908, and some specimens thirty years old show little or no signs of additional fading.

e. Individual variation. While absolutely no color differences of subspecific value can be found to distinguish the birds of any two islands, the question of size remains to be considered. Individual variation in color would seem to be insignificant, but such variation in size is considerable. A glance at the table below shows that for wing and tail, there is a variation of ten percent of the maximum. Nor do the wing and tail vary proportionately in any one bird, that is, a long winged bird may have the shortest tail. Consequently one should beware of apparent average differences in size, especially when based on such small series. Thus the tails

of Jamaican males undoubtedly average longer than those from Santo Domingo. However, the shortest tail of all is a Jamaican bird, the Jamaican specimens were taken over a period of fifty years, and the Santo Domingo specimens were nearly all taken the same week at the same locality, and the females do not show any such difference.

The case is slightly more complicated when we consider the series from Guadeloupe, especially as size has been claimed as a character for this subspecies. Most of them are old skins, collected by Winch in 1883, of very poor quality, with the bend of the wing eliminated as far as outward appearances go. Great care must, therefore, be used to insure the comparability of the wing measurement. The two females do not differ from other females in size. The males would appear to average somewhat smaller. All the specimens were shot early in September, none show any signs of contrast in color below and several are practically without any light tips to the feathers of the forehead, signs pointing suspiciously to their being birds of the year. In this connection, of three good skins recently collected by Noble, the female is more hoary on the forehead and is larger than the two males.

Conclusions. A study of variation according to sex, season, and age shows that no color or size differences are of subspecific value in the West Indian Black Swifts. Two recently proposed subspecies, *Nephoecetes niger jamaicensis* and *N. n. guadeloupensis* should become synonyms of typical *niger*, leaving but one subspecies in the West Indian region.

Locality	Material examined with measurements	
	Wing	Tail
Males:		
Two from Cuba	149. -155.5	62. -64.
Eleven from Santo Domingo	148. -157.	60. -67.
Six from Jamaica	150. -157.	61. -69.
Three from Dominica	149. -154.	62. -68.
Seven from Guadeloupe	143.5-152.	59. -68.
Females:		
One from Cuba	143.5	52.5
Seven from Santo Domingo	140. -149.	51.5-60.5
Four from Jamaica	140. -148.	53. -59.5
One ? from Dominica	142.	55.
Two from Guadeloupe	145.5-146.5	55. -57.

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