

We thank the staff of the Ramsey Canyon Preserve of the Nature Conservancy. Jevra Brown provided valuable assistance in the field. Luis Baptista offered helpful comments on the manuscript.

LITERATURE CITED

- BANKS, R. C., AND N. K. JOHNSON. 1961. A review of North American hybrid hummingbirds. *Condor* 63:3–28.
- BAPTISTA, L. F., AND M. MATSUI. 1979. The source of the dive-noise of the Anna's Hummingbird. *Condor* 81:87–89.
- BENT, A. D. 1940. Life histories of North American cuckoos, goatsuckers, hummingbirds and their allies. U.S. Natl. Mus. Bull. 176.
- MAYR, E., AND L. L. SHORT. 1970. Species taxa of North American birds. Publ. Nuttall Ornithol. Club no. 9.
- MILLER, S. J., AND D. W. INOUE. 1983. Roles of the wing whistle in the territorial behaviour of male Broad-tailed Hummingbirds (*Selasphorus platycercus*). *Anim. Behav.* 31:689–700.
- MIRSKY, E. N. 1976. Song divergence in hummingbird and junco populations of Guadalupe Island. *Condor* 78:230–235.
- PITELKA, F. A. 1942. Territoriality and related problems in North American hummingbirds. *Condor* 63:3–28.
- RODGERS, T. L. 1940. The dive note of the Anna's Hummingbird. *Condor* 42:86.
- STILES, F. G. 1982. Aggressive and courtship displays of the male Anna's Hummingbird. *Condor* 84:208–225.
- WELLS, S., AND L. F. BAPTISTA. 1979. Displays and morphology of an Anna x Allen Hummingbird hybrid. *Wilson Bull.* 91(4):524–532.
- WELLS, S., R. A. BRADLEY, AND L. F. BAPTISTA. 1978. Hybridization in *Calypte* hummingbirds. *Auk* 95:537–549.

The Condor 96:1091–1094
© The Cooper Ornithological Society 1994

THE NONBREEDING DISTRIBUTION OF THE BLACK SWIFT: A CLUE FROM COLOMBIA AND UNSOLVED PROBLEMS¹

F. GARY STILES

Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Apartado 7495, Bogotá, Colombia

ALVARO J. NEGRET

Museo de Historia Natural, Universidad del Cauca, Popayán, Colombia

Key words: *Black Swift*; *Cypseloides niger*; *Colombia*; *distribution*; *migration*.

The distributions of many species of swifts of the genus *Cypseloides* remain poorly known, due to the difficulties of field identification and collecting specimens of these obscurely marked, usually high-flying birds. New specimen reports and breeding records (e.g., Marín and Stiles 1992, 1993) often involve large range extensions or overturn previous ideas regarding breeding areas and seasonal movements (see Marín and Stiles 1992 vs. Monroe 1968 on *C. cryptus* for one such example). In this report we describe the first records of the northern Black Swift (*C. niger borealis*) for Colombia, indeed, for South America, and we review and reinterpret existing information for this and other races of the species. If this analysis seems to further confuse an already cloudy situation, it also serves to emphasize our all too fragmentary knowledge regarding this species.

The breeding range of *C. n. borealis* includes the mountainous areas of western North and Central

America from extreme southeastern Alaska to Veracruz, México (Friedmann et al. 1950, AOU 1957). The winter range of this race was long considered to lie in southern Mexico (e.g., AOU 1931), but a thorough examination of existing specimen records led Bent (1940) to conclude that no authentic winter records existed, all birds from southern Mexico having been taken during breeding or migration periods. Positive information on this point has remained elusive; yet the AOU (1983, p. 317) still stated "winters in México (presumably)." However, they overlooked a significant specimen record for the spring migration period (19 April) from southwestern Costa Rica (Kiff 1975). Stiles and Skutch (1989) reported regularly seeing flocks of up to 30 Black Swifts over the Valle Central of Costa Rica during April to early May and September to early October in various years (inclusive dates 9 April–11 May, 13 September–10 October). Although specimens were not obtained, it is possible that these birds were migrating *borealis*. These reports suggest that this race might winter much further south than previously supposed. Reports of Black Swifts at sea off Chiapas during the spring migration period (16 May 1963, Buchanan and Fierstine 1964), and off Guatemala during fall migration (20 September 1933, Davidson 1934) are also

¹ Received 14 February 1994. Accepted 1 June 1994.

TABLE 1. Measurements of different subspecies of the Black Swift (*Cypseloides niger*). Data include sample size (n), mean, and either range or standard deviation. Measurements for both sexes combined, except for tail length.

Subspecies	n	Exposed culmen	Wing chord	Tarsus length	Sex	n	Tail length
<i>niger</i> (incl. "jamaicensis") ¹	14	6.2 (5.5–7.0)	152.8 (148–161)	12.4 (11.5–13)	♂	6	66.0 (58.5–69.5)
					♀	3	58.5 (53–64.5)
<i>costaricensis</i> ¹	9	6.3 (6.0–7.5)	158.2 (152.5–165.5)	12.4(12–13)	♂	5	58.6 (57.5–63.5)
					♀	4	51.9 (50.5–53.5)
<i>costaricensis</i> ^{2,3}	19	6.33 ± 0.21	159.15 ± 2.66	12.38 ± 0.27	♂	7	58.0 (54.8–60.8)
					♀	9	52.2 (49.0–55.1)
<i>borealis</i> ¹	19	6.8 (6.0–7.5)	163.1 (156–175)	12.7 (12–13.5)	♂	9	61.0 (53–66)
					♀	10	52.5 (47–58.5)
<i>borealis</i> ⁴	5	6.90 ± 0.37	164.42 ± 1.80	13.14 ± 0.19	♂	1	58.8
					♀	4	51.92 ± 1.65

Sources: 1, Ridgway 1911; 2, Kiff 1975; 3, Marín and Stiles 1992; 4, present study.

consistent with this interpretation (both records involve birds that flew aboard ships at night and were collected; both were identified as *borealis* by measurements). In addition, there are a number of fall specimens, supposedly of *C. n. costaricensis*, from south-central Mexico, reported by Webster (1958); however, these birds have subsequently been reidentified as *borealis* (M. Marín, in litt.). The dates (8–16 September) also fit well with other records in indicating a migration route for *borealis* along the Pacific slope of Central America, south at least as far as Costa Rica.

Evidence for a South American winter distribution of *C. n. borealis* was obtained by Negret through the collection of five specimens of this race during the fall migration period at Las Guacas, ca. 8 km northeast of Popayán, Depto. del Cauca, Colombia (2°28'N, 76°36'W). This area is a rolling alluvial plain of sediments of volcanic origin, deeply dissected by the Río Blanco and the Río Cauca, at an elevation of 1,800 m in the foothills of the Central Andes. The flat areas are sown with grasses for intensive cattle raising, and during late September and October the first heavy showers of the rainy season trigger the emergence of enormous swarms of small beetles (*Cichlocephala* sp., *Cycloneda* sp., and *Macroductylus* sp., Scarabeidae). These beetles attract impressive numbers of insectivorous birds, including many southbound boreal migrants (Scolopaciidae, Charadriidae, Apodidae, Hirundinidae, Tyrannidae) and large mixed flocks of cypseloidine swifts (*Streptoprocne zonaris* and *rutila*; *Cypseloides cryptus*, *lemosi*, and *cherriei*) from the surrounding regions. Studies of these swifts by Negret are continuing; however, here we limit ourselves to the reports of *C. niger*.

On 26 September 1992, Negret first detected a group of about 15 *C. niger* that foraged and roosted with a flock of about 150 *S. zonaris* in this area. On 3 October, he collected a male *C. niger* as the mixed flock foraged some 10–15 m above the plain. The roosting site of both species was the Cañón de Julumito, a steep gorge on the Río Cauca, about 6 km southwest of Popayán. Here, at dusk, many swifts, mainly *S. zonaris*, gathered in a compact group to sleep clinging to the volcanic rock of a 40 m cliff overlooking the river. The swifts

departed early each morning, spent the day away from the area, and reappeared punctually at 17:00 hr each afternoon at Las Guacas to forage (apparently taking advantage of the oblique rays of the late afternoon sun to locate beetle swarms), before returning to the roost. The group of Black Swifts remained about a week in the area, then disappeared. The species was not detected again, despite regular surveys at least twice each month, until almost exactly a year later on 12 October 1993, when Negret collected four females under identical circumstances to those of the previous year.

The five specimens were examined and measured by us at the Instituto de Ciencias Naturales in Bogotá, Colombia, where two of them will be deposited; the other three will be housed at the Museo de Historia Natural of the Universidad del Cauca, Popayán, Colombia. They are unquestionably Black Swifts from their long-winged, long-tailed, narrow-headed proportions and elliptical nostrils (cf. Marín and Stiles 1992). The tail of the male is distinctly forked, those of the females slightly notched. All of the females have narrow dull whitish borders to broad white tips to the abdominal feathers; in the male, faint pale borders are barely discernable on these feathers. The grey "frosting" from the side of the forehead to over the eye is conspicuous on one female, but dull and brownish in the rest, suggesting that these birds are in second-year plumage (cf. Marín and Stiles 1992). All are in fairly fresh plumage, none had significant deposits of subcutaneous fat, and all stomachs contained only small beetles. Their measurements (Table 1), especially of wing length, clearly place them with *borealis*, rather than the smaller races *niger* or *costaricensis* (cf. Ridgway 1911, Kiff 1975). Their masses are considerably less than those of a sample of breeding adults reported by Foerster (1987) which, together with their low fat deposits, suggests that they had just arrived after a long migratory flight. That their arrival coincided with that of other boreal migrants, and their short stay in the area despite the availability of abundant prey indicate that these swifts were southbound fall migrants.

What these records do not tell us is where the wintering grounds lie, beyond that they are probably no

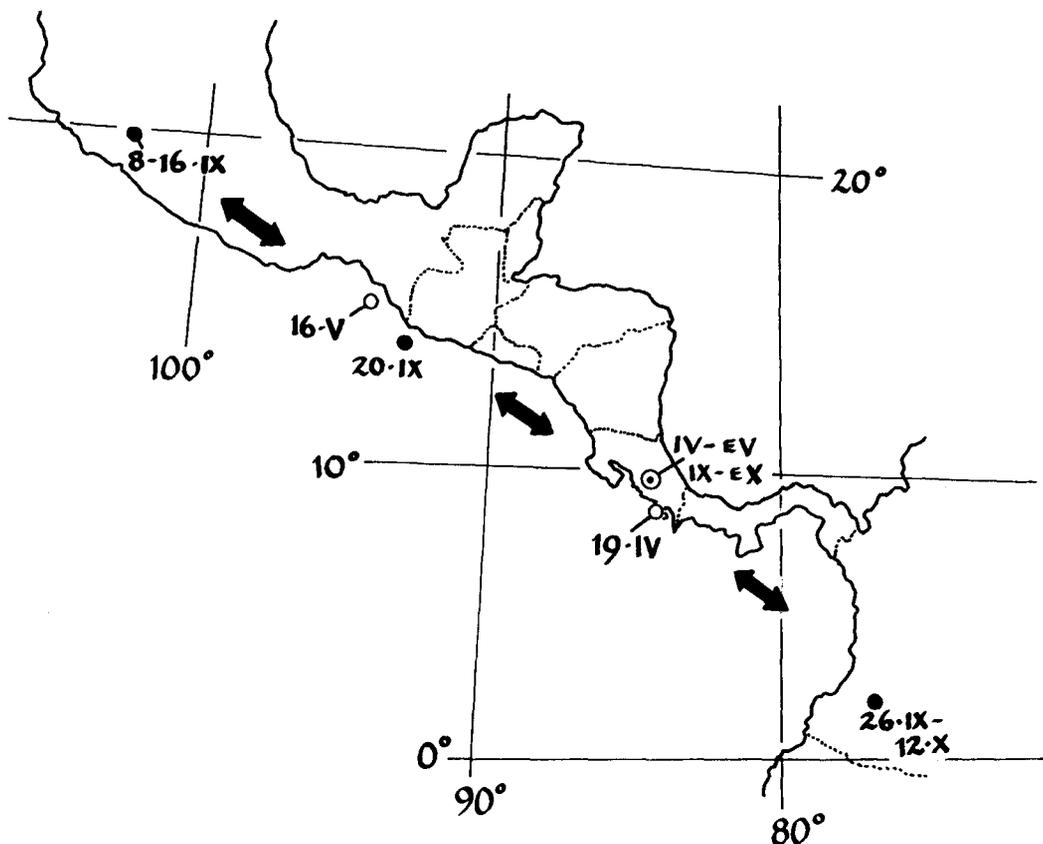


FIGURE 1. Recent Neotropical records of the northern Black Swift (*Cypseloides niger borealis*) during spring and fall migrations. Open circles: spring specimens; solid circles: fall specimens; circle and dot: sight records for spring and fall; arrows: hypothesized migration route.

further north than extreme southern Colombia. The lack of records for the spring migration suggests that the Popayán area is not on the direct migratory path at this season, which in view of the Central American records might lie along the Pacific coast, or even over the open ocean. The lack of records from Panama (cf. Ridgely 1981, AOU 1983) also suggests that these swifts might in fact migrate directly over the open ocean to and from northwestern South America (cf. Fig. 1).

The presence of the Black Swift in Colombia had been predicted by Hilty and Brown (1986) on the basis of a specimen from Guyana and sightings there and in Trinidad (cf. Snyder 1966, French 1973). However, the specimen (and presumably the sightings) represent the West Indian race *niger*, and thus have no bearing on the occurrence of *borealis*. Interestingly, a detailed examination of these records also raises doubts regarding the commonly accepted view (Bond 1956, French 1973, AOU 1983) that some breeding populations of this race migrate through Trinidad to winter in Guyana.

The nominate race of the Black Swift (into which are now subsumed the forms *jamaicensis* Ridgway and *gadeloupenensis* Cory) is considered to be a permanent resident in the Greater Antilles (Wetmore and Swales

1931, Bond 1956, Biaggi 1970). However, Biaggi (1970) reported it to be exceptionally abundant in Puerto Rico in April and May (possibly migrating flocks), and Kepler (1972) presents evidence that the Black Swift is only a summer resident on this island. In fact, the basis for attributing permanent residence on Puerto Rico to this species is apparently a single December sight record by Wetmore (1927). In the Lesser Antilles, the only definite breeding records are from Dominica, where there are nest records for June and July. The species is evidently a breeding rather than permanent resident, arriving in March or April and departing in August or September (Bond 1941). These data, plus the old specimen from the Merumé Mountains, Guyana, along with sight records from Grenada, Trinidad, and Guyana, led Bond (1956) to conclude that the Black Swift migrates south through the Lesser Antilles and Trinidad to a wintering ground in Guyana. The only difficulty with this view is that the dates simply do not add up: the Guyana specimen is from June 1881, and many of the Trinidad sightings are for July (Snyder 1966, French 1973), precisely the months when Black Swifts are nesting on Dominica and, almost certainly, on Puerto Rico (cf. Kepler 1972)! Although other sightings in October

and November in these areas may well represent migrants, the possibility definitely exists that the Black Swift breeds in Trinidad and Guyana. The midwinter distribution of these populations remains enigmatic. In this connection, we note that there is a specimen of *niger* in the collection of the Louisiana State University labeled "Venezuela," but without specific locality or date (M. Marín, pers. comm.). To further complicate things, C. T. Collins informs us (pers. comm.) that there is a previously unreported specimen in the British Museum collected at Chilliwhach (?), Guyana on 30 June 1888 that is in fresh plumage; its measurements (wing 172 mm, tail 59.5, *vide* Collins) place it with *borealis*! The date would seem to preclude its being a wintering bird or a normal spring migrant of this race; it might be a stray. We obviously need more information regarding the swifts of this region.

The race *costaricensis* is widely assumed to be resident in Central America from Chiapas to Costa Rica (Monroe 1968, AOU 1983). However, in Costa Rica at least, it apparently leaves the breeding areas after October (Kiff 1975), and we know of no definite records between November and March. Thus, this race also may in fact be migratory, but we have no clue as to its possible nonbreeding distribution.

Clearly, this analysis raises a great many more problems than it solves. Resolution of these enigmas will not be easy with such wide-ranging, elusive birds. We note, however, that the Black Swift is actually one of the easier members of the genus to identify in the field due to its long, narrow wings and long, often forked tail, relative to, say, *C. cryptus* (cf. Marín and Stiles 1992). However, resolving the nonbreeding distributions of the different races will definitely require collecting more specimens, especially in northern and western South America.

We thank M. Marín A. and C. T. Collins for helpful suggestions and literature references that significantly improved this paper.

LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1931. Check-list of North American birds, 4th ed. American Ornithologists' Union, Lancaster, PA.
- AMERICAN ORNITHOLOGISTS' UNION. 1957. Check-list of North American birds, 5th ed. American Ornithologists' Union, Washington, DC.
- AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American birds, 6th ed. American Ornithologists' Union, Washington, DC.
- BENT, A. C. 1940. Life histories of North American cuckoos, goatsuckers, hummingbirds and their allies. U.S. Nat. Mus., Bull. 176.
- BIAGGI, V. 1970. Las Aves de Puerto Rico. Editorial Univ. Puerto Rico, San Juan.
- BOND, J. 1941. Nidification of the birds of Dominica, West Indies. Proc. Acad. Nat. Sci. Phila.
- BOND, J. 1956. Check-list of the birds of the West Indies. Academy of Natural Sciences, Philadelphia.
- BUCHANAN, O. M., AND H. I. FIERSTINE. 1964. Another Pacific record of the Black Swift off Mexico. Condor 66:161-162.
- DAVIDSON, M.E.M. 1934. An occurrence of the Northern Black Swift off the Guatemalan coast. Condor 36:37.
- FFRENCH, R. R. 1973. A guide to the birds of Trinidad and Tobago. Livingston Publishing, Wynnewood, PA.
- FOERSTER, K. S. 1987. The distribution and breeding biology of the Black Swift *Cypseloides niger* in southern California. M.Sc.thesis, California State Univ., Long Beach, CA.
- FRIEDMANN, H., L. GRISCOM, AND R. T. MOORE. 1950. Distributional check-list of the birds of Mexico, Part I. Pacific Coast Avifauna, no. 29.
- HILTY, S. L., AND W. L. BROWN. 1986. A guide to the birds of Colombia. Princeton Univ. Press, Princeton, NJ.
- KEPLER, C. K. 1972. Notes on the ecology of Puerto Rican swifts, including the first record of the White-collared Swift, *Streptoprocne zonaris*. Ibis 114:541-543.
- KIFF, L. F. 1975. Notes on southwestern Costa Rican birds. Condor 77:101-103.
- MARÍN A., M., AND F. G. STILES. 1992. On the biology of five species of swifts (Apodidae: Cypseloidinae) in Costa Rica. Proc. West. Found. Vertebr. Zool. 4:287-351.
- MARÍN A., M., AND F. G. STILES. 1993. Notes on the biology of the Spot-fronted Swift. Condor 95:479-483.
- MONROE, B. L., JR. 1968. A distributional survey of the birds of Honduras. Ornithol. Monogr., no. 7.
- RIDGELY, R. S. 1981. A guide to the birds of Panama. Princeton Univ. Press, Princeton, NJ.
- RIDGWAY, R. 1911. The birds of North and Middle America, part V. U.S. Nat. Mus., Bull. 50.
- SNYDER, D. E. 1966. The birds of Guyana. Peabody Museum, Salem, MA.
- STILES, F. G., AND A. F. SKUTCH. 1989. A guide to the birds of Costa Rica. Cornell Univ. Press, Ithaca, NY.
- WEBSTER, J. D. 1958. Further observations on the birds of Zacatecas, Mexico. Wilson Bull. 70:243-256.
- WETMORE, A. 1927. The birds of Porto Rico and the Virgin Islands: Psittaciformes to Passeriformes. Scientific survey of Porto Rico and the Virgin Islands, vol IX, part 4:409-571. New York Academy of Sciences, New York.
- WETMORE, A., AND B. H. SWALES. 1931. The birds of Haiti and the Dominican Republic. U.S. Natl. Mus. Bull. 155.