

Taxonomic notes on the White-collared Swift (*Streptoprocne zonaris*)

KENNETH C. PARKES

Carnegie Museum of Natural History, 4400 Forbes Avenue - Pittsburgh, Pennsylvania 15213 USA

Abstract The White-collared Swift (*Streptoprocne zonaris*) is a large, gregarious, strongly-flying species found from Mexico and the Greater Antilles to Argentina, and from the Tropical to the Temperate Zone. Five subspecies were recognized in the standard check-list of Peters (1940), and an additional subspecies was described by Niethammer in 1953. This study of a series of 225 specimens shows that recognition of two previously synonymized subspecies was warranted. A large area of the Subtropical Zone of South America is occupied by a subspecies universally known in the literature as *albicincta*, but which does not match the holotype of that subspecies and is hence nameless; it is described herein as new.

The White-collared Swift (*Streptoprocne zonaris*) is a large, gregarious Neotropical species with a wide range, both geographic and altitudinal, from Mexico and the West Indies to northern Argentina, and from the Tropical to the Temperate Zone. It can be roughly described as a large, blackish swift with a prominent white collar, encircling the bird at the nape and upper breast. It is geographically variable; Peters (1940) admitted five subspecies. The only subsequent detailed discussion of variation in this species I have seen is that of Zimmer (1953). My study of 225 specimens, representing the combined series of 48 in the Carnegie Museum of Natural History (CM) and 177 (including 4 holotypes) in the American Museum of Natural History (AMNH), has led me to conclusions quite different from those of Peters or Zimmer, the most surprising discoveries being that the subspecies with the most extensive range lacks a valid name, and that the subspecies *albicincta* (Cabanis), assigned a range by Peters (1940) that extended from Honduras to Brazil, actually has one of the smallest ranges in the species.

The principal geographically variable characters of *Streptoprocne zonaris* are wing length (measurements, of adults only, in this paper are of the flattened wing; the sexes are alike in size and their measurements are pooled in the accounts below), relative blackness of plumage, presence or absence (and extent when present) of white edgings ("scalloping") on feathers of various tracts, and amount of development of the white collar that gives the species its name. Immature individuals within a given

population tend to have the white collar less well developed, and pale or white feather edgings more widely distributed and conspicuous than on adults.

Although most of the subspecies can be reasonably well characterized and have distinct ranges, there are several specimens that appear decidedly "wrong" for their collection site. These will be mentioned beyond. Zimmer (1953) mentions possible migration in this species only in connection with a specimen from Mato Grosso, Brazil, citing early authors who believed that the species was only a transient in Trinidad and in Guyana. This is confirmed for Trinidad by French (1991). Meyer de Schauensee (1966) mentions migration only in connection with the population of the mountains of northwestern Argentina, migrating to the provinces of Entre Ríos and Córdoba, information undoubtedly extracted from Olog (1963).

The subspecies that appear to be separable are as follows:

***Streptoprocne zonaris pallidifrons* (Hartert)**

Chaetura zonaris pallidifrons Hartert, Ibis, 1896: 368 (Jamaica; lectotype from Ferry River, St. Catherine designated by Hartert 1922:399). Syn: *Streptoprocne zonaris melanotis* Peters, Proc. New England Zool. Club 6, 1916:37 (Sosúa, Dominican Republic); see Wetmore and Swales 1931:263.

Characters: Wing (n= 17) 193-206.5 mm. The most distinctively colored subspecies. The feathers at the base of the bill, at a minimum, are brownish gray; this color often extends somewhat onto the forehead or

even the throat. The gray forehead area becomes whiter posteriorly, as a narrow white line encircling the black area that is just in front of the eye, and extending posteriorly above the eye to its midpoint at most. The throat in general is less intensely black than in mainland races. Adults have relatively inconspicuous pale buff (not white) scalloping on the marginal coverts. This is more conspicuous in immature birds, but these have no additional scalloping elsewhere.

Range: Cuba, Jamaica, Hispaniola (including Tortue Island); casual or accidental in the Isle of Pines (sight records), Vieques, and Lesser Antilles (fide Bond 1985).

Streptoprocne zonaris mexicana Ridgway

Streptoprocne zonaris mexicana Ridgway, Proc. Biol. Soc. Washington 23, 1910: 53 (Rio Seco, near "Cordova, Vera Cruz" = Córdoba, Veracruz).

Characters: Very large (wing [$n = 20$] 204 [1 specimen], 206.5-217.5 mm). Throat and posterior underparts grayest of all races. White breastband broad. All of underparts of immatures lightly scalloped in fresh plumage.

Range: Mexico, north to Guerrero, San Luis Potosí, and Tamaulipas; Guatemala (Griscom 1932). The single specimen from Belize examined, and the variation in Belize specimens reported by Russell (1964) suggests intergradation with the following race; a series from Honduras is clearly intermediate (see beyond). Accidental at Perdido Key, southwesternmost Florida (Hardy and Clench 1982), where a White-collared Swift was found dead; observer reports suggest that it may have been part of a flock of 6 or 7. Also accidental on Padre Island, Kleberg Co., Texas, 8 March 1983 (Lasley 1984). The author identified the specimen only tentatively as *mexicana*, stating that it needed comparison with *pallidifrons* and *albicineta*. Its wing length of 211 mm. however, precludes its having been anything except another example of *mexicana*. A White-collared Swift photographed on the Texas Gulf Coast near Surfside, Brazoria Co., Texas, 19 December 1987. was probably *mexicana* (Eubanks and Morgan 1989). The latter paper mentions several sight records of "large black swifts" along the Texas coast in December 1987, suggesting the possibility that there was a northward movement of White-collared Swifts from Mexico during that month. Much farther from the breeding range of *mexicana* (or any other race) was a swift sketched and well described at Point St. George, Del Norte Co., California, 21 May 1982 (Erickson et al. 1989). Although the locality was such an unlikely one, there is little doubt that the bird was a

White-collared Swift, and the record has been accepted as such by the California Bird Records Committee.

Streptoprocne zonaris bouchellii Huber

Streptoprocne zonaris bouchellii Huber, Auk 40, 1923: 302 (Eden, Lat. 14°00'N, Long. 84°26'W, Nicaragua).

Characters: Wing [$n = 14$] 195 [1 specimen], 200-210, thus almost as large as *mexicana* (measurements given by Huber [1923] of 191-205 were undoubtedly of the chord rather than the flattened wing). Distinctly blacker below than *mexicana*; breastband narrower in adults and much narrower, even rudimentary, in immatures. Immatures with scalloping on the throat; barely visible if at all present on rest of venter.

Range: Nicaragua through Panama. Intergrades with *mexicana* in Belize and possibly part of Guatemala; Russell (1964) examined 4 Belize specimens and called 2 of them *mexicana* and 2 "*albicineta*". A series of 17 from Honduras in CM shows complete mixing of *mexicana* and *bouchellii* characters. Monroe (1968) recognized this intermediacy, but (as did Russell) wrongly attributed the southern element in the intergrades as "*albicineta*," a race alleged by Peters (1940) to range from Honduras to Brazil. Wetmore (1968) called Panama birds "*albicineta*," but his account does not suggest that he made any critical study of geographic variation in the species.

Remarks: This subspecies has been synonymized with *albicineta* (Cabanis) ever since it was discussed by Peters (1929). In Huber's words, *bouchellii* was "similar to *S. z. albicineta*, but white collar in front decidedly narrower and much less white, only the tips of the lower throat feathers for about 3 millimetres being white, rest of the feathers sooty blackish, presenting an indistinct and mottled collar, in some specimens the collar is barely traceable." Peters (1929) dismissed this character as being based on "age or individual variation." He did not specify how many Nicaragua specimens he examined to come to this conclusion; his remarks were made in connection with identifying what was then the first specimen from Honduras. For Peters to have been correct would necessitate all 8 of Huber's series, shot (presumably at random) between 25 March and 1 April 1922, to have been immature birds, which would seem unlikely. Peters and those authors who have followed him in synonymizing *bouchellii* (e.g., the dogmatic statement of Griscom [1932]) have overlooked the fact that whereas the development of the white breastband is indeed less in immatures than in adults, the amount of white is also geographically variable. This is well illustrated by Huber's noting that "in some specimens

the collar is barely traceable," these being with little doubt the actual immatures in his series. In the CM Honduras series of *mexicana-bouchellii* intergrades, this extreme condition appears in two immature specimens. CM 133697, San Esteban, Olancho, is nearest *bouchellii* in general body color, and CM 135381, 10 km N Sabana Grande, Morazan, is nearest *mexicana*, but both have the breastband much reduced; in the case of 133697, it is only one feather deep at the center. In no other subspecies except the much smaller *minor* of Venezuela (not recognized by Peters) is the breastband as reduced in both age classes as it is in *bouchellii*.

***Streptoprocne zonaris minor* (Lawrence)**

Hemiprocne minor Lawrence, Ann. New York Acad. Sci. 2, 1882:355 ("Bogotá" = error for Trinidad; see beyond).

Characters: Wing (n= 15) 180 [1 specimen], 183-197 mm., thus one of the smallest races. White breastband reduced, in this character exceeded only by the larger race *bouchellii*; in almost all adult specimens, the white is confined to the tips of the feathers such that the breastband appears mottled; breastband of immatures correspondingly even more reduced. Throat rather grayish. White or whitish edgings in adults usually confined to marginal wing coverts, where they are fairly conspicuous; very narrow white edgings are present on tips and inner margins of inner remiges, disappearing or almost so with wear. Immatures have the most extensive scalloping (although it is narrow) of any race except the large *kuenzeli* of the Bolivian highlands; on extreme individuals it is present on throat, abdomen, flanks, and upper and under tail coverts as well as on the marginal coverts of the wing.

Range: Coastal mountains of Venezuela, frequently found in Trinidad where not yet known to nest (ffrench 1991); Collins (pers. comm.) considers this movement as straying rather than a regular migration.

Remarks: Naumburg (1930) pointed out that Lawrence's holotype of *minor* from "Bogotá" (which I have examined at the American Museum of Natural History) was not of the well-known "Bogotá" trade skin make, but instead matches "the well-known Orinoco or Trinidad make". This was reiterated by Zimmer (1953), who pointed out its resemblance to other Trinidad specimens. These clearly belong to the subspecies of the coastal mountains of Venezuela; the holotype differs only in having a flat wing measurement of 180 mm, 3 mm shorter than any mainland specimen (its wing length is cited by Zimmer and others as 178 mm, but he undoubtedly

did not flatten the wing fully on the ruler). I have no hesitation in accepting Zimmer's tentative suggestion, and restrict the type locality of *Hemiprocne minor* Lawrence to Trinidad. ffrench (1991) believed that the swifts of this species seen in Trinidad represented "a post-breeding dispersal, probably from the Venezuelan Andes." Birds from those mountains, however, belong to a different subspecies than do the available Trinidad specimens; as the latter are matched by those of the coastal mountains, the name *minor* will apply to the coastal and not the Andean birds.

***Streptoprocne zonaris albicincta* (Cabanis)**

Hemiprocne albicincta Cabanis, Journ. f. Orn. 10, 1862:165 (Mexico to Guiana; restricted to the junction of Haiama Creek and the Demerara River, British Guiana [= Guyana] by Zimmer [1953]).

Characters: Wing [n= 15] 182-197 mm, thus similar in size to *minor*, but much blacker in color. Almost no feather edgings visible, even in immatures. Immatures have some scalloping on the throat, but on the rest of the underparts scalloping is barely visible, if present at all, and brownish rather than white when present. Breastband of adults broad.

Range: Guyana; most of Venezuela except the coastal mountains and the Andes; Tropical Zone, extending into Subtropical in the Tepuì region.

Remarks: This name has been used by most authors, following Peters (194{}), for the White-collared Swifts of a huge area from Honduras to Peru and Mato Grosso. Most specimens from this range, however, do *not* match those from Guyana, the type locality, and the range of true *albicincta* is thus much smaller. Like other populations of this highly mobile species, members of *albicincta* apparently migrate or wander into areas within the breeding range of other races. A group of 5 specimens (AMNH) from "Rancho Grande" (Henri Pittier National Park), Venezuela, cannot be separated from *albicincta* specimens from Guyana and the Tepuì region, although this locality is in the coastal range, only about 80 km west of Petare, the source of a series of *minor* in CM. On the other hand, AMNH 188183, a specimen from Mt. Turumiquire, NW Monagas, at the base of the Paría Peninsula, is neither *minor* nor *albicincta*, being much too large for either (wing 210 mm). It is quite dark, but somewhat brownish on the forehead. It has a very well developed, adult-type breastband, well developed scalloping on the marginal wing coverts, and faint traces of pale scalloping and tipping on the posterior underparts and greater wing coverts. It resembles nominate *zonaris* in size, but differs in color, and matches no other known subspecies.

***Streptoprocne zonaris zonaris* (Shaw)**

Hirundo zonaris Shaw, in J. F. Miller's *Cimelia Physica*, 1796:100, pl. 55 [not seen]. (No locality, but assumed to be Brazil; see beyond).

Characters: A large (wing [n= 18] 204-221 mm.), very dark race, adult with no scalloping on the marginal wing coverts; breastband not especially wide, and tending to be interrupted or narrowed where it joins the nape portion of the "collar"; white tips of breastband feathers narrow, so that worn birds show the black bases of these feathers. Immatures with the least pale scalloping of any race; marginal wing covert edging brownish, and with virtually no other traces of edgings, barely visible with a hand lens on the throat of one and the abdomen of another, brownish, narrow, with almost no contrast to the rest of the feather.

Range: Tropical lowlands from Bolivia through Brazil. Meyer de Schauensee (1966) does not mention Paraguay in the range of this species, but the AMNH has 3 specimens from "east of Caaguazú Alt. 1000 ft." (Naumburg 1935), in easternmost Paraguay. Narosky and Yzurieta (1987) indicate that it is absent from Uruguay. Cuello and Gerzenstein (1962) mentioned a mounted specimen said to have been obtained in the vicinity of Montevideo in 1934.

Remarks: Past authors have generally agreed that the type specimen of Shaw's *Hirundo zonaris*, described without a definite locality, probably came from Brazil. Chapman (1914) reviewed earlier suggestions as to the provenience of Shaw's bird, and then restricted the type locality to "Chapada, Matto Grosso, Brazil." Having, in this same paper, described an Andean subspecies, Chapman wrote "It is most unlikely that Shaw, writing in 1796, had specimens of the Swift of the High Andes." However, Naumburg (1930) quotes Hellmayr (apparently in a pers. comm.) as indicating that Shaw's type did not come from Chapada, as in Shaw's time the province of Mato Grosso was practically unknown. He suggested Rio de Janeiro as a more likely source for Shaw's specimen, a designation accepted by Naumburg. Later, Peters (1940) called Chapada "a very improbable locality" and cited Naumburg (1930), but did not substitute Rio de Janeiro. I find the suggestion of Hellmayr and Naumburg eminently sensible, and accept the restricted type locality of *Hirundo zonaris* Shaw as Rio de Janeiro, Brazil.

Naumburg (1930) identified a single specimen from Utiarity, Mato Grosso, as an adult of "*albicincta*", with a wing length of 174 mm. I remeasured it, with the wing flattened to be comparable with my other measurements, and found that the two wings differed slightly, the flat measurements being 175 and 177

mm. If it is indeed an adult, it is the smallest *Streptoprocne zonaris* measured in this study (a specimen of *minor* from Trinidad with a wing of 178 was labeled "juv." by the collector). The smallest *albicincta* measured had a wing of 182 mm.; it is conceivable that the Utiarity bird could be an especially small (immature?) *albicincta*, but that race, as here restricted, has a broad breastband, whereas that of the Utiarity bird is exceedingly narrow, the collar on the nape is only about 2 feathers wide, and is all but invisible because of the compressed "make" of the skin. Rather than following Naumburg in assigning this specimen to *albicincta* I find myself agreeing with Zimmer (1953), who believed that the Utiarity bird might represent a migrant or stray of a breeding population from an as yet unknown breeding area, probably to the north. Zimmer (1953), in commenting on this small specimen, stated that there was only this "single bird from northern Mato Grosso." However, there are 4 specimens in the AMNH from Chapada, Mato Grosso (Naumburg 1930; Zimmer [1940] lists 3), undoubtedly why Chapman chose this for his type locality restriction. Utiarity is only a little more than 300 km north of Chapada (map in Naumburg 1930), and both are on tributaries of the Rio Madeira, so it would appear highly unlikely that there is any significant zoogeographic difference between the two localities such that breeding birds from Chapada and Utiarity might be expected to differ subspecifically.

***Streptoprocne zonaris altissima* Chapman**

Streptoprocne zonaris altissima Chapman, Bull. Amer. Mus. Nat. Hist. 33,1914:604 (Laguneta, alt. 10,300 ft., near Quindio Pass, Central Andes, Colombia).

Characters: Wing 220+ (worn), 223, 224, 226, 227.5, 232 (all from Ecuador). An exceedingly distinctive subspecies. It not only includes the largest individuals of the species, but also has the broadest collar in the species, being continuous around the neck rather than narrowing at the nape or sides of neck. Adults have distinct white scalloping on the marginal wing coverts; scalloping of immatures narrow but white and well contrasting, both on the throat and the venter. General color blackish, throat little if any paler than breast. Chapman described *altissima* as "general color, particularly of the inner wing quills and wing-coverts greener" than in *zonaris*. I could not see this at all; for example, a skin of *zonaris* from Rio Grande do Sul, Brazil, is greener than any *altissima* seen. Collins (pers. comm.) has pointed out to me that in swifts a greenish gloss regularly wears to purplish (and then to no gloss at all) during a yearly cycle.

Range: High elevations (Temperate Zone) in Ecuador and the Central Andes of Colombia.

Remarks: Chapman (1914) gave the wing length of the holotype (AMNH 111521) of *altissima* as 212 mm. (presumably the chord). The flattened wing of this specimen measures 216 mm., but the outermost primary is worn, and probably lacks 1-2 mm., giving an estimated wing length of perhaps 218 mm. This is still somewhat shorter than the wing of the shortest Ecuador specimen measured (220 +, worn), but the Colombian and Ecuadorean birds are alike in color. Although in his original description, Chapman (1915) stated that he had only a single specimen from the type locality in Colombia, there are 2 topotypes in the AMNH. Unfortunately both of these birds were in molt, and their wings are unmeasurable. Chapman correctly emphasized that this swift is among those species having altitudinal subspecies in South America, even though they have, as he put it, "exceptional powers of flight."

***Streptoprocne zonaris kuenzeli* Niethammer**

Streptoprocne zonaris kuenzeli Niethammer, Bonn. Zool. Beitr. 4, 1953:286 (Puri [1200 m], Yungas von La Paz, Bolivia).

Characters: Wing ad. male 206, 211, 211+ [worn]; ad. female 211, 213; imm. male 208; imm. female 195, 199, thus similar in size to *S. z. zonaris* of the adjacent lowlands. For comparison, CM specimens from 350-500 m in eastern Bolivia, ad. male 216; ad. female 204, 209, 211, 212; ad. sex ? 214; imm. female 195). Distinctively colored, especially the immatures, which are very heavily scaled all over; all remiges white-edged, even the crown with white edgings; very faint edgings on mid-back soon wear away, but conspicuous in all other areas. A strong white superciliary and lores. Adults differ from *zonaris* in having well-marked scalloping on marginal wing coverts, and 4 of 6 adults seen retained a narrow white superciliary; the general throat and underparts color somewhat brownish, not blackish as in *zonaris*. Niethammer's wing measurements were male 209, female 198, 199, 204. These probably represent the chord of adults, as his measurements of females match mine of the flat wing of immature females; had he seen immatures, he surely would have commented on their unique coloration.

Range: High elevations in the Andes of Bolivia and adjacent northwestern Argentina (specimens examined from Tucumán Province).

Remarks: Article 32d (i) (2) of the International Code of Zoological Nomenclature requires that the umlaut in the original spelling of *kuenzeli* be changed to ue.

***Streptoprocne zonaris subtropicalis*, new subspecies**

Holotype: CM 44856, adult male, collected at Pueblo Viejo, north slope of the Sierra Nevada de Santa Marta, alt. 2000 feet, Subtropical Zone (Todd and Carriker 1922:122) by M. A. Carriker, Jr., 6 March 1914 (Collector's no. 14191).

Characters: This is the subspecies that occupies most of the South American part of the range attributed to "*albicineta*" by Peters (1940) and subsequent authors. It differs from true *albicineta* most noticeably in size; wing length 194-207 mm versus 182-196 in *albicineta*. Resembles *albicineta* in general intensely black color and broad breastband; differs in adults often having scalloping on marginal wing coverts, white when present (usually wholly absent in adults of *albicineta*), and light scalloping on throat and underparts of immatures, sometimes but not always confined to the rear half of the body; in *albicineta* immatures may have some scalloping on the throat, but it is barely visible if at all present on the rest of the underparts, and is brownish when present. Blacker than the dark but dull, larger race *zonaris* of the Tropical lowlands to the east.

Range: Middle elevations in the Sierra Nevada de Santa Marta, Colombia, and the Andes from the Cordillera de Mérida in Venezuela south to Peru, principally in the Subtropical Zone.

Remarks: Two specimens from Urubamba Cañon, Cuzco, Peru (AMNH 145001 female, 145002 male) are duller and have wings 212 and 211 respectively; these may be intergrades with *zonaris*. This locality was listed as "not located" by Stephens and Traylor (1983), but they also stated that it was "downstream some distance from Machu Picchu." They give the elevation along the river at the base of the ridge at Machu Picchu as 2130 m, "lower subtropical forest." Urubamba Cañon, being downstream from Machu Picchu, is at least approaching the Tropical Zone. Also a possible intergrade with *zonaris* is AMNH 185209, a male (wing 210) from "San José Abajo" (= San José Nuevo, fide Paynter and Traylor 1977), Napo, Ecuador. Chapman (1926) states that this locality was at the lower border of the Subtropical Zone.

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Riassunto - *Streptoprocne zonaris* è una specie gragaria, di grosse dimensioni, che si trova dal Messico e le Grandi Antille fino all'Argentina e dalla zona tropicale a quella temperata. Peters (1940) ha descritto cinque sottospecie e Niethammer (1953) una successiva. Questo studio, basato su 225 esemplari,

dimostra che una sottospecie attualmente sinonimica deve essere distinta in due. Infatti una grande area della Zona subtropicale del sud America è occupata da una sottospecie nota universalmente come *albicincta*. Tuttavia essa non corrisponde all'olotipo della sottospecie e dunque rimane senza nominativo. La nuova sottospecie viene denominata *Streptoprocne zonaris subtropicalis*.

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