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Studies of Peruvian Birds. No. 66
The Swallows (Hirundinidae)

By John T. Zimmer

I am again indebted to Dr. William H. Phelps of Caracas, Mr. James Bond and Mr. Rodolphe de Schauensee of the Academy of Natural Sciences of Philadelphia, Mr. James Greenway of the Museum of Comparative Zoölogy, Cambridge, and to Dr. Allan R. Phillips of Tucson, Arizona, for the loan of critical material used in the following studies.

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color standards and color nomenclature."

Progne chalybea chalybea (Gmelin)

[*Hirundo*] *chalybea* Gmelin, 1789, Systema naturae, vol. 1, pt. 2, p. 1026—based on *Hirundo cayanensis* Brisson, Ornithologie, vol. 2, p. 495, pl. 46, fig. 1, and Daubenton, Planches enluminées, pl. 545, fig. 2; Cayenne.

Progne leucogaster Baird, 1865 (May), Smithsonian Misc. Coll., no. 181, p. 280—various localities in México, Guatemala, [El] Salvador, Costa Rica, Panamá, and Colombia; type in U. S. Natl. Mus. from Cajabón, Guatemala.

Puerto Indiana, 3 ♂, 2 ♀; Morropón, 4 ♂, 2 ♀.

Compared with 118 additional skins from central Brazil north to the three Guianas and Trinidad, to the eastward, and México and Texas, to the westward, with all intermediate countries except British Honduras represented in the series. A random sample of 15 males and 11 females from throughout the range shows the males to have the wing 124–138 mm. (average, 131.7); tail, 58–66 (62.5); females, wing, 121–132 (130); tail, 54–65 (61). Eleven males and six females from the breeding range of the southern form, *domestica*, show the following:

males, wing, 137–144 (141.2); tail, 70–77 (73.2); females, wing, 135–142 (139); tail, 70–80 (74). There is thus an appreciable, but not complete, difference in size between the two forms.

The matter is of some importance in the identification of specimens of *domestica* in winter quarters away from the breeding range. I have four males and three females from Yucabí, upper Rio Negro, Brazil, which are certainly wintering examples of this southern form. All were taken in September. They are of maximum size and the males have the wing, 141–149.5, and the tail, 72–84 (one exceeding any specimen at hand from the breeding range); the females: wing, 142–145, and tail, 72–78. One specimen of *c. chalybea* was secured by the collectors at Yucabí, but *domestica* was not obtained elsewhere on the Rio Negro although *chalybea* is represented from several localities. The Yucabí specimen, a male, has the wing 130 and the tail 65.5.

In southeastern Brazil, the present series indicates that *chalybea chalybea* occurs as far south as Espirito Santo, while *c. domestica* ranges across this area in migration (as does *s. subis*). Some intermediacy is evident, and the line of demarcation probably is not exact. Nevertheless, between *chalybea* and *domestica* the specimens at hand show fairly good separation into two groups with tail lengths of 56–66 and 70–76 mm., respectively, and wing lengths of 125–133 and 134–145. Unfortunately some of the specimens are in molt, preventing their precise measurement.

A young female from western Paraguay is unusually small, even for *chalybea* (a Cayenne female is smaller), and is referred to the nominate form with misgivings.

Three specimens from Mérida, Venezuela, bear previous identification as *chalybea*, although they are further characterized by the collector as migrants to the locality in spite of the fact that *chalybea* occurs commonly elsewhere in Venezuela. All three have long wings (142, 143, and 140, respectively) but short tails with moderately short forks. They also have the belly and under tail-coverts rather noticeably streaked, the forehead marked with fine pale tips on the feathers, and the hind neck crossed by a thin ashy collar, all of which characters indicate the identity of the specimens as migrant *P. s. subis*. Similarly, a female trade-skin from Baía, Brazil, is also *subis*, although incorrectly labeled "*elegans*" and "*chalybea domestica*." A male "Bahia-skin" also is *subis*.

It has sometimes been suggested that *chalybea* and *domestica* may belong to the *subis* group along with *cryptoleuca*, *dominicensis*, and *sinaloae*, but I am not convinced that such allocation would be justified. In fact, I do not believe that *dominicensis* and *sinaloae* are properly

included in the *subis* group. There are various points of resemblance between *dominicensis* and *sinaloae*, on the one hand, and *chalybea* and *domestica*, on the other, and specific association of these four forms would have some justification, except for an apparent conflict in distribution, discussed below.

Cryptoleuca presents a problem. The males certainly resemble those of *subis*, many individuals of which show a noticeable amount of white concealed on the lower abdomen, but the females resemble those of *chalybea* more than those of *subis*. I have seen no males of *cryptoleuca* that even indistinctly bridge the gap between *subis* and *dominicensis* (or *chalybea*) as have sometimes been reported. If, then, *cryptoleuca* could be assigned to the *subis* group on account of the males, it could equally well be assigned to the *chalybea* group on account of the females, suggesting that a single specific group could embrace all these forms, with resemblances present sometimes in only one sex in spite of differences shown by the other sex.

Included in the material at hand are 13 specimens of *sinaloae* from Jalisco that not only give a new and more northern locality for the form but enable a clear comparison with *dominicensis* and a description of the hitherto unrecorded female plumage of *sinaloae*. The males are uniformly distinct from those of *dominicensis* by reason of slightly smaller average size and broader white abdominal area with correspondingly narrower blue flanks. The females closely resemble those of *dominicensis* with a smaller average size and broader white abdominal area. The comparative measurements (in millimeters) are as follows:

	Wing	Tail
18 ♂ *dominicensis*	140–147 (142.5)	66–75.5 (71.3)
7 ♂ *sinaloae*	137–144 (140.7)	66–72 (68.8)
7 ♀ *dominicensis*	136–143 (139.6)	65–73 (68.8)
5 ♀ *sinaloae*	130–136 (134.2)	64–69 (66.7)

One of the males of *sinaloae* is labeled as "Common, Pairing"; another as "Probably breeding." The specimens were taken in May, 1905, by Batty, at La Laja, Jalisco, México, at 9000 feet elevation. The altitude of Plomosas, Sinaloa, the type locality of *sinaloae*, is some 2500–3000 feet. The type was collected in July. Between Jalisco and Sinaloa lies the state of Nayarit and from San Blas, Nayarit, I have two males of *chalybea* collected in May. Unless, therefore, *sinaloae* is restricted to the mountains, which is very doubtful (San Blas is at sea level), the interposition of *chalybea* at this point reduces the possibility of considering *sinaloae* and *chalybea* as conspecific. Evidence from Guatemala and El Salvador indicates that *chalybea* nests in Central

America in late April and early May, which argues against the migratory status of the San Blas specimens if, indeed, the species is migratory in that part of its range other than for some local dispersal in the non-breeding season. In any case, the association of these various forms into one specific group is very problematical, at least until the distributional problems can be satisfactorily solved.

Since the preceding paragraphs were written, Dr. Allan R. Phillips has kindly submitted a male and a female *sinaloae* from the Sierra de Nacori Chico, Sonora, 3200 feet, taken in early June and with the male noted as having had greatly enlarged gonads. These specimens agree well with the series from Jalisco both in coloration and size. They demonstrate the breeding occurrence of *sinaloae* still farther northward than do the Jalisco specimens, but the low elevation at which they were taken does not support the idea that *sinaloae* is a montane form. Some other ecological factors may exist to keep *sinaloae* and *chalybea* apart at breeding time, but there is a likelihood that they may occur together. In addition to this situation, the Sonoran specimens of *sinaloae* now suggest a possible conflict with *P. subis hesperia* which is on record as breeding in Sonora.

At present, therefore, I prefer to recognize *subis*, *cryptoleuca*, *dominicensis*, and *chalybea* as specifically distinct, with *sinaloae* associated with *dominicensis* and, of course, *domestica* associated with *chalybea*.

The identification of *subis hesperia* in wintering areas is dubious, as the characters are not very satisfactory. An October specimen, sexed as a [young] male, from Cocoplum, Panamá, comes the nearest to agreement with the given characters of female *hesperia*, of any material at hand, including some from Baja California. It is the only specimen from a locality away from Baja California that appears to belong to this restricted form.

Peruvian records of *c. chalybea* are from Jeberos, Chayavitas, Chamicuros, Yurimaguas, Moyobamba, and Lagunas.

SPECIMENS EXAMINED

P. s. subis.—

UNITED STATES AND CANADA: 124 ♂, 59 ♀, 6 (?).

CUBA: 1 ♀.

VENEZUELA:

Mérida, 1 ♂, 1 ♀, 1 (?);

Suapure, 2 ♂, 1 ♀;

El Merey, Río Casiquiare, 1 ♀.

BRAZIL:

Rio Negro, Igarapé Cacao Pereira, 5 ♂, 1 ♀, 1 (?);

Rio Jamundá, Faro, 4 ♂, 1 [♂], 10 ♀;

Rio Tapajoz, Aramanay, 3 ♂, 4 ♀;
Maranhão, Santa Filomena, 3 ♂, 1 ♀, 1 (?);
"Bahia" (trade-skins), 1 ♂, 1 ♀.

P. s. hesperia.—
MÉXICO:
Baja California, La Joya, 1 ♂;
San José del Cabo, 1 ♂, 1 "♀" [= ♂];
El Oro, 14 ♂, 1 "♂" [? = ♀], 1 ♀.
PANAMÁ:
Cocoplum, 1 "♂."

P. cryptoleuca.—
CUBA: 6 ♂, 2 ♀.

P. d. dominicensis.—
SANTO DOMINGO, 5 ♂, 1 ♀.
GRENADA: 1 ♂, 1 ♀.
ST. VINCENT: 3 ♂, 2 ♀.
DOMINICA: 1 ♂, 1 ♀.
GUADELOUPE: 2 ♂, 1 "♀" [= ♂].
JAMAICA: 2 ♂, 1 ♀.
PUERTO RICO: 4 ♂, 3 ♀.
TOBAGO: 1 ♀.

P. d. sinaloae.—
MÉXICO:
La Laja, Jalisco, 8 ♂, 5 ♀;
Sierra de Nacori Chico, Sonora, 1 ♂[1], 1 ♀[1].

P. c. chalybea.—
UNITED STATES:
Texas, Rio Grande City, 1 ♂;
Hidalgo, 1 ♀.
MÉXICO:
(El Zapotal, Jalapa, San Blas, Tehuantepec, and Yucatán), 7 ♂, 1 ♀.
GUATEMALA:
Hacienda California, 1 ♂, 2 ♀, 1 (?).
NICARAGUA:
(Matagalpa and Peña Blanca), 2 ♂, 2 ♀.
HONDURAS:
Tegucigalpa, 1 ♂, 1 (?).
COSTA RICA:
(Guácimo, Carrillo, Guanacaste, Boruca, and San José), 3 ♂, 3 ♀.
PANAMÁ:
(Chepigana, Almirante, Lion Hill, El Real [Río Tuyra], Chiriquí, San Miguel Island, Coiba Island, and Brava Island), 11 ♂, 6 ♀, 2 "?♀," 2 (?);
(Canal Zone—Farfan, Gatún, Gamboa, Balboa, and Barro Colorado Island), 4 ♂, 1 ♀;
"Panama," 1 "♀."
COLOMBIA:
(San Isidro, Cali, Malena, Florencia, Lorica, Sautatá, Cúcuta, and "Colombia"), 8 ♂, 5 ♀, 3 (?).

[1] Specimens in collection of Allan R. Phillips.

VENEZUELA:
(Guanoco, Cumaná, Suapure, Las Guacas, Quiribana de Caicara, Altagracia, and Cristóbal Colón), 9 ♂, 4 ♀, 1 (?);
(Esmeraldas and El Merey), 2 ♂, 2 ♀.
TRINIDAD:
(Seelet, Moruga, Caroni River, and Boone River), 5 ♂, 2 ♀.
BRITISH GUIANA:
(Wismar, Minnehaha Creek, and Annai), 3 ♂.
SURINAM:
Paramaribo, 4 ♂, 2 ♀, 2 (?).
CAYENNE:
Cayenne, 2 ♂, 2 ♀.
ECUADOR:
(Santa Elena, Bucay, and Vacquería), 5 ♂, 3 ♀.
PERÚ:
Puerto Indiana, 3 ♂, 2 ♀;
Morropón, 4 ♂, 2 ♀.
BRAZIL:
Rio Branco, Nova Vida, 1 ♀;
Rio Uaupés, Tahuapunto, 2 ♀;
Rio Negro, Santa Maria, 1 ♂;
Santa Isabel, 1 ♂;
Tabocal, 2 ♂, 1 ♀;
Yucabí, 1 ♂;
Cucuhy, 2 ♂, 1 ♀;
Muirapinimá, 1 ♀;
Manaus, 5 ♂;
Rio Jamundá, Faro, 2 ♀, 1 (?);
Rio Amazonas, Tefé, 1 ♂, 3 ♀;
Rio Madeira, Rosarinho, 2 ♂, 2 ♀;
Santo Antonio de Guajará, 1 ♂;
Igarapé Auará, 1 ♂, 1 ♀;
Calamá, 1 ♂, 1 ♀;
Villa Bella Imperatríz, Lago Andirá, 1 ♂, 1 ♀;
Rio Tapajoz, Igarapé Brabo, 1 ♂, 2 ♀, 1 (?);
Caxiricatuba, 1 ♀;
Tauarý, 2 ♂;
Aramanáy, 1 ♀;
Rio Xingú, Tapará, 1 ♂, 1 ♀;
Pará, Espirito Santo, 1 ♂, 1 ♀;
Maranhão, Isla São Luiz, 5 ♂, 1 ♀, 1 (?);
Piauí, Therezina, 3 ♂, 2 ♀;
Espirito Santo, Baixo Guandú, 1 ♂, 1 ♀;
Mato Grosso, Utiarity, 1 ♀.
PARAGUAY:
Chaco, Makthlawaiya, 1 ♀.

P. c. domestica.—
ARGENTINA:
(Mar del Plata, Barrancas al Sud, Flores, La Soledad, and Embarcación [Salta], 5 ♂, 4 ♀.

PARAGUAY:
(Colonia Risso, Zanja Morotí, and Fort Wheeler), 1 ♂, 1 "♀" [= ♂], 1 ♀, 1 (?).
BOLIVIA:
Province of Sara, 4 ♂, 2 ♀.
BRAZIL:
Mato Grosso, Chapada, 2 ♂, 2 ♀;
São Paulo (Fazenda Cayoá and Alambary), 5 ♂, 1 ♀;
Goiaz, Rio Araguaya, 2 ♂, 2 ♀;
Espirito Santo, Lagôa Juparaná, 1 ♀;
Baía (Joazeiro and Tambury), 4 ♀;
Piauí, Therezina, 1 (?);
Maranhão, Barão do Grajahú, 1 ♂, 1 ♀, 1 (?);
Amazonas, Yucabí, Rio Negro, 4 ♂, 3 ♀.

Progne modesta murphyi Chapman

Progne murphyi CHAPMAN, 1925 (Sept. 25), Amer. Mus. Novitates, no. 187, p. 6—cliffs near Talara, coast of northwestern Perú; ♀; Amer. Mus. Nat. Hist.

The limited material available of this form does not permit any examination of the individual variation that may exist, especially in the female plumage. It is sufficient to say, however, that the characters of the type are not exhibited by any examples of either *modesta* or *elegans* in the series before me.

The subspecies is restricted to the coastal region of Perú and northernmost Chile, from which latter country, at Chacalluta, it has been reported by Goodall, Johnson, and Philippi (1946, Las aves de Chile, vol. 1, p. 66).

Aside from the material listed below, there are only two Peruvian examples on record, both from Ica (Hacienda Ocucaje). This is curious in view of Tschudi's statement (1846, Fauna Peruana, Aves, p. 134) that "*Hirundo purpurea*" was common on the coast of Perú and had a very wide distribution. It is true that his description of "*purpurea*" (obviously the male plumage) is equally applicable to the members of the *modesta*, *chalybea*, and *subis* groups, but *subis* is unknown from Perú, and *chalybea* does not occur on the coast, nor does the inland form of *modesta* which has a wide distribution. Tschudi's record, therefore, is not fully acceptable without additional data, being apparently a composite of sorts.

Progne modesta elegans Baird

Progne elegans BAIRD, 1865 (May), Smithsonian Misc. Coll., no. 181, p. 275—Vermejo River, Paraguay; young ♂, 2 ♀ ♀, cotypes in U. S. Natl. Mus.

Progne furcata BAIRD, 1865 (May), *ibid.*, no. 181, p. 278—Chile; ♂; U. S. Natl. Mus.

Seventeen specimens from the lower Río Ucayali, at Sarayacu, furnish the first records of this form from Perú. The specimens were all taken on May 6 and rather certainly represent migrating or wintering individuals. None is noted as with enlarged gonads, and the specimens agree well with Argentine examples.

On the other hand, 24 specimens from the upper Rio Negro and Rio Uaupés of northern Brazil, taken in September and July, respectively, add still other localities to the known range of *elegans* and probably are also wintering examples, although one female from Yucabí is marked as having greatly enlarged gonads; another female from Yucabí does not, but may be less fully adult. Most of these north-Brazilian specimens are young birds in full molt, and the general coloration is lighter brown than is shown by the Peruvian and Argentine specimens of comparable age and sex. The specimens that appear to be more fully adult are, in turn, darker than the others and agree better in depth of hue with the southern examples. There is no clear evidence, therefore, that the population is other than *elegans*.

The series of *elegans* has an unusual number of specimens that may be wrongly sexed, as I have indicated in the subjoined list. Most of them are young birds (one is adult), but they have the under tail-coverts far enough advanced in molt to show some steel-blue rather than brown coloration subterminally. In this they agree with a number of other young birds sexed as males which have, in addition, some of the bluish feathering appearing on the under side of the body. Adult females presumably lack these features, and young females agree with them.

SPECIMENS EXAMINED

P. m. modesta.—

GALÁPAGOS ISLANDS:

(Chatham, North Chatham, Indefatigable, Floreana, Daphne, Albemarle, Charles, and Hood Islands, and "Sandy islet between Seymour Islands"), 23 ♂, 1 [♂], 9 ♀.

P. m. murphyi.—

PERÚ:

Cliffs south of Talara, 2 ♂, 1 ♀ (type);

Huaral, 1 ♂ (immature).

P. m. elegans.—

PERÚ:

Sarayacu, 8 ♂, 3 "♀" [? = ♂], 6 ♀.

BRAZIL:

Rio Negro, Yucabí, 2 ♀;

Rio Uaupés, Tahuapunto, 9 ♂, 2 "♀" [? = ♂], 11 ♀.

ARGENTINA:

Tucumán, Tapia, 4 ♂, 1 "♀" [? = ♂], 1 ♀;

Salta, Embarcación, 1 ♂, 1 ♀;
Jujuy, Tilcara, 5 ♂, 3 ♀;
Buenos Aires, Mar del Plata, 1 ♂, 1 [? = ♂].

Phaeoprogne tapera tapera (Linnaeus)

[*Hirundo*] *Tapera* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 360—based largely on "L'Hirondelle d'Amérique" Brisson, Ornithologie, vol. 2, p. 502, pl. 45, fig. 3—Cayenne, and "Tapera" Marcgrave, Historiae rerum naturalium Brasiliae, p. 205—Brazil; type locality restricted to Pernambuco by Pinto, 1940, Rev. Mus. Paulista, vol. 1, p. 270.

H[*irundo*] *pascuum* WIED, 1830, Beiträge zur Naturgeschichte von Brasilien, vol. 3, pt. 1, p. 360—"campos" of inner Baía, Brazil; type lost.

Phaeoprogne tapera immaculata CHAPMAN, 1912 (July 3), Bull. Amer. Mus. Nat. Hist., vol. 31, p. 156—Chicoral (near Giradot), Tolima, Colombia, 1800 feet; ♂; Amer. Mus. Nat. Hist.

Chapman (1929, Auk, vol. 46, pp. 348–357) gave a good discussion of the present species, to which I can add little except some additional localities. However, Chapman found no distinctions between *tapera* and *fusca* in respect to dorsal coloration or size, whereas there is an average difference in dimensions of wing and tail, although it is far from definitive. A random series of males of *tapera* have the wing 125–133 mm. (129.5); tail, 57–67 (61.4); females: wing, 117–127 (123.5); tail, 53–60 (57.4). Males of *fusca*: wing, 129–139 (134.2); tail, 60–67 (65); females: wing, 127–138 (132); tail, 56–69 (62). The overlap is sufficient to make this criterion unsafe for exact determination. The pattern and hue of the under parts remain the best criteria.

Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 5, p. 25) has recounted the uncertainties surrounding the identification of *Hirundo Tapera* of Linnaeus with the present species owing to the composite nature of the diagnosis and the references on which the name is based. There is no advantage to be gained, however, by disputing the allocation in current usage nor any proof that it is not as accurate as any other that might be suggested on the basis of the evidence. Accordingly I continue the present assignment.

Peruvian records are from Tumbes, between Tumbes and Santa Lucia, Jeberos, Lagunas, Santa Cruz, Iquitos, "lower Ucayali" [= near Sarayacu], and "upper Ucayali" [= near Cashiboya].

Some writers have considered this species as a member of the genus *Progne*, but I believe its distinguishing features are strong enough to justify the recognition of *Phaeoprogne*. The sexes are alike in color and without any of the metallic blue found, at least in the males, in the members of *Progne*. The bill is more slender; the tail is less forked and composed of broader plumes; the feet are somewhat weaker, and the

feathering on the inner side at the upper end of the tarsus is more extensive. There appears also to be some distinction in behavioral activities. The flight is said to differ from that of *Progne*, being less graceful; the individuals are not gregarious nesters but occupy individual holes in the ground, sometimes 2 feet in depth (presumably measured horizontally?), or in some parts of the range in preëmpted or deserted nests of the ovenbird, *Furnarius*; the bird never alights on buildings or on the ground but always on bushes, fences, and the like. In many respects, *Phaeoprogne* suggests a giant *Riparia riparia* and approaches *Progne* most closely in its size. At any rate, I prefer to keep *Phaeoprogne* intact.

Phaeoprogne tapera fusca Vieillot

Hirundo fusca VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, nouv. éd., vol. 14, p. 510—Paraguay; based on "Golondrina parva" of Azara, no. 301.

This southern subspecies ranges northward in migration across the Equator to the Caribbean coast of South America and through the Andean countries, occasionally as far as Panamá. In the winter, therefore, it is found at the same localities as the resident *tapera tapera*, but the more purely whitish throat and belly and the darker and more strongly defined pectoral band, with a consistent occurrence of rounded dark spots in the middle of the upper belly, enable the migrant birds to be distinguished readily from the residents.

There are no Peruvian records other than those of the three specimens from Orosa listed below and already recorded by Chapman (1929, *loc. cit.*).

SPECIMENS EXAMINED

P. t. tapera.—
COLOMBIA:
Chicoral, 2 ♂ (including type of *immaculata*), 1 ♀;
Magdalena River, 1 ♂, 1 ♀;
"Bogotá," 4 (?).
ECUADOR:
Durán, 4 ♂, 1 (?).
PERÚ:
Mouth of Río Curaray, 6 ♂, 4 ♀;
Puerto Indiana, 2 ♂, 6 ♀;
Orosa, 1 ♂, 1 ♀;
Nauta, 1 ♂;
Río Ucayali, Santa Rosa, 2 ♂, 2 ♀;
Lagarto, 1 ♂, 1 ♀;
mouth of Río Urubamba, 1 ♂;

Pilares, Piura, 2 ♂, 1 ♀, 1 (?);
Lamor, 1 ♂.

VENEZUELA:
(Mérida, El Valle, Tucacas, Suapure, Caicara, and Maripa), 5 ♂, 12 ♀, 7 (?).

SURINAM:
(Zanderij, Republiek, and near Paramaribo), 9 ♂, 7 ♀.

CAYENNE:
Approuague, 1 ♂, 1 ♀.

BRAZIL:
Rio Negro (Tabocal, Igarapé Cacao Pereira, and Manaus), 10 ♂, 9 ♀, 1 (?);
Rio Jamundá, Faro, 3 ♂, 5 ♀, 1 (?);
Tefé, 2 ♂, 5 ♀;
(Rio Madeira, Alliança, and Porto de Moz), 2 ♂;
Villa Bella Imperatríz, 11 ♂, 5 ♀;
Rio Tapajoz, Igarapé Amorín, 2 ♂;
Rio Xingú, Victoria, 1 ♂;
Rio Tocantins (Mocajuba and Baião), 2 ♂, 2 ♀, 1 (?);
Goiaz, Rio Araguaya, 1 ♂;
Baía (Santa Ritta and "Bahia"), 1 ♂, 1 ♀.

P. t. fusca.—

PARAGUAY:
Fort Wheeler, 2 ♂.

ARGENTINA:
Salta, Embarcación, 1 ♀;
Tucumán, 2 ♂;
(Barracas al Sud, Flores, La Soledad, La Plata, "Prov. La Plata," and "Prov. Buenos Aires"), 6 ♂, 1 ♀, 1 (?).

BOLIVIA:
"Prov. Sara," 3 ♂, 5 ♀, 1 (?).

BRAZIL:
Mato Grosso (Chapada, Corumbá, Agua Blanca, Urucúm, Descalvados, Uacurysal, and Palmiras), 9 ♂, 9 ♀, 4 (?);
Rio Grande do Sul (Palmares and Lagôa dos Patos), 4 ♂, 2 ♀;
Espirito Santo, Lagôa Juparaná, 1 ♂;
Rio Amazonas, Tefé[1], 1 ♂, 2 ♀.

PERÚ[1]:
Orosa, 3 ♂.

COLOMBIA[1]:
Turbaco, 1 ♂;
Sinú River, 1 ♀.

PANAMÁ[1]:
Panama City, 1 ♀.

VENEZUELA[1]:
(Mérida, Suapure, and Esmeraldas), 1 ♂, 5 ♀, 1 "?♀," 1 (?).

BRITISH GUIANA[1]:
Annai, 1 ♂, 1 ♀, 1 (?);
"British Guiana," 1 (?).

[1] Presumably migrants.

Petrochelidon fulva rufocollaris (Peale)

Hirundo rufocollaris PEALE, *in* Wilkes, 1848, United States Exploring Expedition, vol. 8, pp. 175, 327—near Callao, Perú; U. S. Natl. Mus.

The range of the present subspecies is curiously restricted as far as specimens have been recorded, and all the material of this sort has come from a limited area in the general neighborhood of the type locality. Professor Nation, however, spent many years searching for the bird, even in that region, before he found it and learned that it was not a "Crag-Martin" but was to be found only about dwellings in the river districts intersecting the arid terrain between the ocean and the mouths of the western Andean valleys, never about the cliffs within the valleys. Pursuing his search, he reported (1885, Proc. Zool. Soc. London, p. 277) that the bird inhabited this sort of territory from the southern border of the Desert of Sechura south to Ica. With this extensive range, it is even more curious that there has been no material collected except in the Lima region. Because much of Nation's information came from correspondents and not from his own observations, it may be well to await confirmation by specimens before accepting this wide distribution.

I find the characters of the closely related *P. f. aequatorialis* Chapman of southwestern Ecuador (similarly restricted in known range) to be quite adequate for the recognition of that form in spite of Hellmayr's query (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 86, footnote). The range of *aequatorialis* comes so close to the Peruvian boundary that I have no doubt whatever that it crosses into northwestern Perú. Until specimens are actually collected on the Peruvian side of the line, *aequatorialis* must be left without admittance to the Peruvian list.

In spite of the very wide hiatus in distribution between *fulva*, *pallida*, and *citata* in the north and *rufocollaris* and *aequatorialis*, I believe that they are all conspecific, in which arrangement I follow Hellmayr. In the non-recognition of more than one subspecies in the West Indies, *fulva fulva*, I agree with Bond (1950, Check-list of birds of the West Indies, p. 108; and earlier accounts). I can find no consistent differences in size or coloration to support recognition of any of the various proposed forms in that region.

SPECIMENS EXAMINED

P. f. fulva.—
SANTO DOMINGO: 8 ♂, 3 ♀.
PUERTO RICO: 7 ♂, 2 ♀, 1 (?).
HAITI: 1 ♂, 1 ♀.

JAMAICA: 3 ♂, 3 ♀.
CUBA: 6 ♂, 1 ♀.
P. f. pallida.—
TEXAS:
Kerrville, 6 ♂, 7 ♀.
P. f. citata.—
MÉXICO:
Yucatán, Izamal, 2 ♂, 2 ♀.
P. f. aequatorialis.—
ECUADOR:
Alamor, 4 ♂ (including type), 2 ♀;
Guainche, 1 ♂;
Pullango, 1 ♀.
P. f. rufocollaris.—
PERÚ:
Huaral, 3 ♂, 4 ♀;
Vitarte, 2 ♀;
Lima, 1 ♂;
"Candivilla" = Carabaillo, Chillon Valley, 1 (?).

Petrochelidon andecola oroyae Chapman

Petrochelidon andecola oroyae Chapman, 1924 (Oct. 18), Amer. Mus. Novitates, no. 138, p. 12—Oroya, Dept. Junín, Central Perú; 12,500 feet; ♂; Amer. Mus. Nat. Hist.

Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13 (pt. 5), p. 37) was inclined to question the validity of *oroyae* of which, however, he admittedly had seen but two examples. One of these, the male, he found to agree in dorsal coloration with *a. andecola* but the other, the female, was decidedly bluer-backed, as described for *oroyae*. The male had the wing 123 mm.; the female, 116.

Nevertheless, the four examples now before me (the type and three paratypes) are quite recognizably distinct from 20 specimens of *andecola* on all of the original characters plus a longer wing that was not mentioned by either Chapman or Hellmayr. Hellmayr's female supplies the only wing measurement that shows an overlap with *andecola*, although two specimens of *andecola* at hand approach so closely to *oroyae* in this regard as to indicate probable overlap in a larger sample. The three males of *oroyae* have the wing 123, 124.5, and 124.5; the single female, 123.5. Males of *andecola* show 115–122.2 mm.; females, 113–121.5.

The character of whitish, instead of brownish, shafts of the primaries in *oroyae* was discounted by Hellmayr as valueless, but it is a good criterion in the material before me. Chapman neglected to state that it is important to make the comparison in the dorsal aspect, since both forms have the shafts whitish below. The only exception in the 20

andecola at hand is an immature specimen, and even that bird has the dorsal side of the shafts whitish on only two or three of the outermost primaries and brownish on the others.

The bluer dorsal color of *oroyae* and notably the longer and broader bill are not matched in any of the series of *andecola*. I consider the form as quite valid.

Earlier records from the Hacienda Queta (near Tarma) and "between Cucas [= Cacas] and Palcamayo," as well as Tschudi's citation of the warmer valleys of the sierra, presumably belong to *oroyae* as do Morrison's observations from Cahuarmayo and near Lake Junín. Huancavelica and Talahuarra birds are uncertain without the specimens, but may well belong to *oroyae*.

Petrochelidon andecola andecola (D'Orbigny and Lafresnaye)

H[irundo] andecola D'Orbigny and Lafresnaye, 1837, Mag. Zool., vol. 7, cl. 2, "Synopsis avium," p. 69—"in Andibus, La Paz (Bolivia)."

The present subspecies occupies a somewhat more extensive range than *oroyae*. It reaches Chile and Bolivia and, in Perú, inhabits the southern and southeastern parts of the country. Records presumably assignable to this form are from Arequipa, Tinta, La Raya, and Puno.

Goodall, Johnson, and Philippi (1946, Las aves de Chile, vol. 1, p. 69) report finding *andecola* nesting in colonies on the cliffs of Chismisa, Tarapacá, Chile, but were unable to secure a nest or eggs. They note, however, that the nesting pattern agreed with that of other members of the genus *Petrochelidon*, from which the probability may be deduced that the nests were of mud, although this is not so stated. This is the only recorded information of any kind on the nesting of the present species; the account given by Sharpe and Wyatt (1892, Monograph of the Hirundinidae, pt. 15, vol. 2, p. [500]) belongs to *Orochelidon murina* with which the authors confused *andecola*, believing it to be the young of the latter species.

SPECIMENS EXAMINED

P. a. oroyae.—
Perú:
Oroya, 2 ♂ (including type), 1 ♀;
Chipa, 1 ♂.
P. a. andecola.—
Perú:
[Moho], 1 (?), 2 (?)[1];
Lake Titicaca, 1 ♂, 1 "(?♀)";
Tirapata, 4 ♂, 4 ♀.

[1] Specimens in the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

BOLIVIA:
Guaqui, 2 ♀;
Cuchacancha, 1 ♂, 5 ♀.
?
San Pablo, 1 ♀.

Stelgidopteryx ruficollis ruficollis (Vieillot)

Hirundo ruficollis VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, nouv. éd., vol. 14, p. 523—"Brésil" = Rio de Janeiro; Paris Mus.

Hirundo flavigastra VIEILLOT, 1817, *op. cit.*, nouv. éd., vol. 14, p. 534—Paraguay; based on the "Golondrina de la vientre amarillazo" of Azara, no. 306.

Hirundo iugularis WIED, 1820, Reise nach Brasilien, vol. 1, p. 345—Cachoeirinho, Rio Grande de Belmonte, Bahia, Brazil; [♂]; Amer. Mus. Nat. Hist.

Hirundo hortensis LICHTENSTEIN, 1823, Verzeichniss Doubletten zoologischen Museums Berlin, p. 57—Bahia; Berlin Mus.

Hirundo flaviventer LESSON, 1830 (Sept.), Traité d'ornithologie, livr. 4, p. 269—"Brésil" = Rio de Janeiro; Paris Mus.

?*Stelgidopteryx ruficollis cacabatus* BANGS AND PENARD, 1918 (April), Bull. Mus. Comp. Zoöl., vol. 62, p. 83—vicinity of Paramaribo, Surinam; ♂; Mus. Comp. Zoöl.

Perico, Río Chinchipe, 4 ♂, 2 ♀; Jaén, 2 ♂, 1 ♀; Río Negro, west of Moyobamba, 2 ♂; Río Seco, 3 ♂, 3 ♀; Nauta, 2 ♂; mouth of Río Curaray, 1 ♂; Puerto Indiana, 1 ♀; Apayacu, 1 ♀; Orosa, 1 ♀; Lagarto, 2 ♂, 1 ♀; Santa Rosa, Río Ucayali, 1 ♀; La Merced, 3 ♂, 1 (?); Tulumayo, 2 ♂, 3 ♀; San Ramón, 1 ♂, 1 ♀; Chanchamayo, 1 ♂; San Miguel, Urubamba, 2 ♂; Candamo, 2 ♂, 4 ♀. Also examined in the collection of the Chicago Natural History Museum: Moyobamba, 4; Rioja, 1; San Ramón, 1; and Río Colorado, 1.

Specimens from the northwestern part of this area approach *S. r. uropygialis* to a noticeable degree. The throat is lighter rufous than that of central and southeast-Peruvian birds; the breast is lighter smoky brown; the belly is more broadly pale; and there is a tendency toward the development of a pale uropygium. In fact, one specimen, an adult female from Perico, has the lower rump as whitish as the more weakly marked individuals of *uropygialis*, although other specimens from the same locality do not show the same feature. Two specimens from Zamora, eastern Ecuador, a little farther north than Perico, are even more strongly white-rumped and are decidedly close to *uropygialis*, but both are young and in view of the position of the locality, on the eastern side of the Andes, are best left with *ruficollis*.

Bangs and Noble (1918, Auk, vol. 35, p. 458) recorded a single specimen from Bellavista as *uropygialis*, presumably because of a whitish uropygium, but specimens at hand from Jaen, very near Bellavista, are no more strongly marked in this respect than the others from

Perico, Río Negro, and Río Seco which constitute the intermediate population under discussion.

The disposition of these birds is problematical. They are intermediate between *ruficollis* and *uropygialis*, without any striking characters of their own, but do not fit exactly into either subspecies. Most of them, however, can be matched by occasional specimens from different parts of the range of *ruficollis*, and I prefer to assign them to that form rather than erect a separate subspecies for them.

Three skins from Mt. Roraima and three from Auyan-tepui, Venezuela, are in somewhat the same situation. They have been variously assigned to *ruficollis*, *uropygialis*, *aequalis*, and *cacabatus* but do not agree exactly with any one of these. I find them closest to *aequalis* with individual specimens of which they may be severally matched on the basis of light-colored throats, and light upper parts with a tendency toward a whitish rump more definite than that shown by most of the north-Peruvian specimens just mentioned and in distinction from the general series of *ruficollis*. At the same time, the few Surinam examples of the species at hand are easily matched in the series of over 200 *ruficollis* and fail to substantiate the validity of *cacabatus* which I believe should be submerged.

Peruvian records not duplicated in the material listed above are from Iquitos, Yurimaguas, upper and lower Ucayali, Monterico, Cosñipata, and Chaquimayo.

Stelgidopteryx ruficollis uropygialis (Lawrence)

Cotyle uropygialis LAWRENCE, 1863 (April), Ibis, vol. 5, p. 181—Isthmus of Panama = near Lion Hill; ♂, ♀ ; Amer. Mus. Nat. Hist.

Stelgidopteryx fulvigula BAIRD, 1865 (May), Smithsonian Misc. Coll., no. 181 (Review of American birds), p. 318—Angostura, Costa Rica; juv. in U. S. Natl. Mus.

I have no Peruvian specimens of this subspecies, records of which are from Tumbes, Paucal, and Lechugal. The record from Bellavista has been mentioned under *S. r. ruficollis*, to which subspecies I judge it belongs.

Alopochelidon fucata (Temminck)

Hirundo fucata TEMMINCK, 1822 (Oct.), Nouveau recueil de planches coloriées, vol. 2, livr. 27, text to pl. 161, fig. 1—"Brésil"; environs of the city of São Paulo suggested by Pinto, 1944.

Atticora fucata roraimae CHUBB, 1920 (June), Bull. Brit. Ornith. Club, vol. 40, p. 155—Roraima, British Guiana = Venezuela; British Mus.

The two specimens before me from San Miguel, Urubamba Valley, already recorded by Chapman (1921, Bull. U. S. Natl. Mus., no. 117,

p. 1021), appear to be the only examples known from Perú. They show no distinctions from specimens collected in most other parts of the range of the species.

The range is curious, however, since there are two main centers of distribution, one in Venezuela and the other in southern Brazil, Uruguay, Paraguay, Argentina, Bolivia, and Perú. The southern population is known to be migratory, at least to some extent, but there is no evidence to show that the Venezuelan population comprises the southern birds in winter quarters, although their true winter quarters have yet to be determined. There are no records from the whole Amazonian basin except for the Peruvian and Bolivian records that are probably not significant in this respect; the Bolivian record is of an October male with enlarged gonads; the Peruvian locality is not in any probable line of flight toward Venezuela. It is possible that the southern birds merely crowd into the northern part of their breeding range in winter without invading any new areas.

At any rate, the southern population is reported as breeding from September to November and there is one suggestion (Aplin, 1894, Ibis, p. 167) that the migration is probably in mid-February. Specimens are known from various southern localities with dates from March to November and January, while specimens and records from Venezuela include every month except July and December; the gaps in the calendar are of doubtful significance. Furthermore, Dr. Phelps writes me that two Venezuelan males from Cerro Uei-tepui and one male from El Valle, Caracas, dated June 5, June 5, and May 30, respectively, had decidedly enlarged gonads, indicating local breeding. The difference in breeding season of this northern population compared with that of the southern birds is of interest in view of the relative positions of the two parts of the range with respect to the Equator. Comparison of specimens from the two areas, furthermore, must be made with this divergence in mind since, at any given month, individuals from the two areas will be in different states of plumage.

It must be admitted that the series before me shows more specimens from the south than from the north with a dusky cap and sometimes without more than a weak development of the rusty margins on the coronal feathers, but the southern series is larger. In addition, three males and two females from San Felix, Cumaná, Venezuela, have the wing and tail at or below the minimum measurements of the southern birds with which three males and one female from Mt. Roraima agree better than with the north-coastal birds. Dr. Phelps has sent me additional measurements of the males in his Venezuelan series which show the same differentiation. His birds are from Caracas (a small bird,

agreeing with the San Felix series), Ptari-tepui, Uei-tepui, and Santa Elena (agreeing with the Roraima specimens). The measurements (in millimeters) of the combined series are:

	Wing		Tail	
	Males	Females	Males	Females
North coast	91–96	96	39–40	41
Roraima, etc.	95–101	101	40.5–45	46
Southern region . . .	96–109	96–102	42–49	41–47

There is enough overlap in the measurements to make it desirable to see more material from the northern coastal region of Venezuela before attempting to distinguish a northern form. At the same time, the birds from Roraima and adjacent mountains have measurements completely within those of the southern birds and show no distinguishing features of size. The original description of "*roraimae*" indicated a smaller size than true *fucata* which my series does not confirm. The supposedly lighter coloration likewise does not appear in the material at hand.

The generic separation of *Alopochelidon* from *Stelgidopteryx* is not very marked except for the recurved barbs on the outer web of the outer primary in adult males of *Stelgidopteryx*. Ridgway claimed a lesser extent of adhesion of the toes in *Alopochelidon*, but I find the same amount of variability in this respect in both genera. Some specimens of *Alopochelidon*, for example, have the basal joints of outer and middle toes so closely united that there is little indication of the obsolete suture between them. The bill of *Alopochelidon* is notably weaker than that of *Stelgidopteryx*, and this character can be added to the absence of the "rough" wing to help maintain the genus as at present recognized.

SPECIMENS EXAMINED

A. fucata.—

Venezuela:
Cumaná, San Felix, 3 ♂, 2 ♀;
Bolívar, Mt. Roraima, 3 ♂, 1 ♀.

Perú:
Cusco, San Miguel, 1 ♂, 1 ♀.

Argentina:
Tucumán (Vipos, Tapia, and Tucumán), 3 ♂, 1 ♀;
Chaco, Pindo, 1 ♂;
Corrientes, Santo Tomé, 1 ♂.

Paraguay:
Niu Ponâ, 1 (?).

Brazil:
Mato Grosso (Chapada and Campanario), 3 ♂, 1 ♀;

São Paulo, Victoria, 1 ♀;
Paraná, Tibagy, 2 ♂, 1 (?);
Rio Grande do Sul (Quinta and mouth of Jaguarão River), 2 ♂, 2 ♀.

Neochelidon tibialis griseiventris Chapman

Neochelidon griseiventris CHAPMAN, 1924 (Oct. 18), Amer. Mus. Novitates, no. 138, p. 9—Candamo, southeast Perú; ♂; Amer. Mus. Nat. Hist.

The distribution of members of this species appears to be greatly interrupted as far as there is available evidence. There is not much of the latter, since records and available collections indicate that the bird is rare and collectors have failed to supply information about it.

With the limited material available, I can detect no certain distinctions between birds from as far distant localities as southeastern Perú and southeastern Venezuela.

Additional Peruvian records of *griseiventris* are from La Gloria, Marcapata, and Cosñipata.

Perhaps of still more interest is a specimen from Tauarý, on the lower right bank of the Rio Tapajoz, Brazil. It is noticeably browner and less grayish below than *griseiventris* but paler as well as larger than *minimus*, in which respects it answers the definition of typical *tibialis*. Only two other specimens with exact localities are on record—one from Cantagallo, Rio de Janeiro, and one from Santa Leopoldina, Espirito Santo. Several additional specimens, apparently trade-skins from Rio de Janeiro, complete the known examples.

Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 50, footnote) ascribes a "remarkably short hallux" to the genus *Neochelidon* as one of its salient characters. I am unable to find such a character. The entire foot is small in this genus, as in *Atticora* and some other genera, but the hallux is not proportionately shorter in *Neochelidon* than in these others.

SPECIMENS EXAMINED

N. t. minimus.—
PANAMÁ:
[Lion Hill], 2 (?).
COLOMBIA:
Juntas de Tamaná, 1 ♂ (type);
San José, Cauca, 1 ♂, 1 ♀.
ECUADOR:
Chimbo, 2 ♂;
Paramba, 2 ♂;
Santo Domingo, 2 ♂:
Río Sapayo, 1 ♂.

N. t. griseiventris.—
COLOMBIA:
"Bogotá," 1 (?).
ECUADOR:
Zamora, 1 ♂.
PERÚ:
Candamo, 1 ♂ (type);
Tulumayo, 1 (?).
VENEZUELA:
Mt. Auyan-tepui, 4 ♀, 1 (?).
N. t. tibialis.—
BRAZIL:
Rio Tapajoz, Tauarý, 1 ♂.

Atticora cyanoleuca cyanoleuca (Vieillot)

Hirundo cyanoleuca VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, nouv. éd., vol. 14, p. 509—Paraguay; based on "Golondrina de la timoneles negros," of Azara, no. 303.

Hirundo minuta WIED, 1821, Reise nach Brasilien, vol. 2, p. 336—Rio de Janeiro; ♂, ♀ cotypes in Amer. Mus. Nat. Hist.

H[irundo] melampyga LICHTENSTEIN, 1823, Verzeichniss Doubletten zoologischen Museums Berlin, p. 57—Bahia, Brazil; Berlin Mus.

Atticora cyanoleuca, var. *montana* BAIRD, 1865, Smithsonian Misc. Coll., no. 181, p. 310—Barranca and San José, Costa Rica, Bogotá, and Perú; a female from Barranca, in the U. S. Natl. Mus., has been accepted by authors as the type.

A series of over 250 specimens of *c. cyanoleuca* from a wide variety of localities has shown no definite distinctions of taxonomic value. The form is partial to the elevated parts of its range, although it does not go very high. Dinelli (1924, Hornero, vol. 3, p. 254) reports it as nesting from January to March in the Tucumán region of Argentina, at 2000 to 3000 meters, and remarks that it retired to the hills to nest but spread more widely in winter. He says nothing about *patagonica* under which heading Hartert and Venturi (1909, Novitates Zool., vol. 16, p. 169) had placed some of this information obtained from him. However, *patagonica* does occur in the Tucumán region at least in winter or on migration. I have seen no evidence of its nesting in that area or north of it. Additional discussion is given below under *patagonica.*

Cyanoleuca apparently does breed in northwestern Argentina. Lönnberg (1903, Ibis, ser. 8, vol. 3, pp. 450, 456) reported it breeding at Moreno, Jujuy, and mentions a young bird collected at San Luis, Tarija, Bolivia, in late January. I have a male of *cyanoleuca* from the Tafí trail, Tucumán, at 2000 feet, collected in April, but the date is not helpful, being after the breeding season. There is no evidence, in any case, that *cyanoleuca* is migratory as *patagonica* is. Peruvian records and specimens of *cyanoleuca* are from every month in the year. I am

unable to determine the breeding season in Perú from the data on the labels. Males are marked as having enlarged gonads in nearly every month of the year, but only one female, collected in December, has been credited with even slightly enlarged gonads. This indication, however, fits well into the statement by Stolzmann (*in* Taczanowski, 1884, Ornithologie du Pérou, vol. 1, p. 245) that the nesting season of *cyanoleuca* in northern Perú is in January and February. This accords well with Dinelli's schedule of nesting in northwestern Argentina from January to March. The nesting of *patagonica* does not coincide as is discussed under that heading.

It is difficult to analyze many of the early accounts of this species, because the distinction of *patagonica* and *cyanoleuca* was not fully recognized and observations were recorded for both under the single name *cyanoleuca*, sometimes under *patagonica*. Even when specimens are available from a locality of such early record, it furnishes no assurance of the identity of the recorded individuals, because *patagonica* invades a great part of the range of *cyanoleuca* during migration and both forms thus occur together in certain places at certain seasons. I have before me both from northern, central-eastern, and southeastern Perú.

The allocation of Peruvian records of early date is, therefore, problematical. Most of the localities are well within the range of *cyanoleuca*, as otherwise attested, and accordingly I would tentatively assign the following records to the typical subspecies: Charapi, Tambillo, Callacate, Cajabamba, Huambo, Hacienda Llagueda, Hacienda Limón, Moyobamba, Hacienda Huarapa, Amable Maria, Machu Picchu, Maranura, San Gaban, and "La Aroya" [= Oroya], Inambari Valley. Other recorded localities are supported by the material examined, without assurance, in some cases, that at least part of the recorded material was not *patagonica*. Sharpe and Wyatt (1889, Monograph of the Hirundinidae, vol. 2, p. [509]) state that Bartlett obtained "*cyanoleuca*" on the Río Ucayali, but I can find no confirmation of this supposed record. I suspect that the error arose through Sclater and Salvin's (1866, Proc. Zool. Soc. London, p. 178) having included Bartlett's Nauta specimens of various species (including the present one) in their paper on the birds collected by Bartlett on the Ucayali. The specimens I have seen from Nauta belong to *patagonica*, and if any examples are found in the future on the Río Ucayali, they should also belong to *patagonica*.

Another question involves the application of the name *cyanoleuca* to the form to which it is now generally assigned. The basis of the name is Azara's "Golondrina de la timoneles negros," but his description is

not clearly definitive and he may have had the form now known as *patagonica*. The first author to suggest this association appears to have been Baird (May, 1865, Smithsonian Misc. Coll., no. 181, p. 312), but various later authors have expressed the same uncertainty. Since Paraguay is the type locality of *cyanoleuca*, it would seem advantageous to retain the name for the resident form of that country which is the non-migratory northern form (as at present accepted) according to Laubmann (1920, Die Vögel von Paraguay, vol. 2, pp. 200, 201).

Atticora cyanoleuca patagonica (D'Orbigny and Lafresnaye)

H[irundo] patagonica D'ORBIGNY AND LAFRESNAYE, 1837, Mag. Zool., vol. 7, cl. 2, "Synopsis avium," p. 69—Patagonia; Paris Mus.

Atticora hemipyga BURMEISTER, Reise durch die La Plata-Staaten, vol. 2, p. 471—Mendoza [Argentina]; Halle Mus.

Some doubts on this form have been given under *cyanoleuca*. There is no doubt that the form is migratory over much of its range. Goodall, Johnson, and Philippi (1946, Las aves de Chile, vol. 1, p. 64) remark that it is resident throughout the year in northern Chile but present in the central and southern parts of the country only from late August to March. In the northern region, it is said to have two broods (in September and again in December) but in the south only one (in November and December).

In northern Argentina and Uruguay, a somewhat similar timing has been reported. The birds are said to arrive in August or early September, to start to gather in large flocks in late January, and to be gone by the middle of March.

Surprisingly, the circumstantial evidence points to a migratory movement toward the northwest until the Andes are reached, and thereafter northward through the elevated terrain inhabited by *cyànoleuca*, across Bolivia, Perú, Ecuador, eastern Colombia, and northern Venezuela, even sometimes to central Panamá. Chilean birds presumably join this northward movement. Occasional transients have been found at sea level on the western coast or in the lowlands of the extreme western segment of the Amazon Valley, but otherwise the birds keep to elevated terrain. There are records from Paraguay, and I am able to add a locality in Rio Grande do Sul (I believe the first from Brazil), but the migrating *patagonica* appears not to follow up the range of *cyanoleuca* in eastern Brazil nor to cross the Amazon Valley except at its far western sector. The route from northeastern Argentina to northeastern Venezuela is decidedly circuitous, but it enables the birds to remain at elevations that seem to be required.

I have one specimen from La Merced, Perú, taken in November,

and two specimens from the mouth of the Río Curaray, northeastern Perú, dated in December. Otherwise my Peruvian skins of *patagonica* are dated from April to October, within the non-breeding season as determined from other data. The La Merced specimen probably is no more than a straggler, but the two Curaray birds are not only exceptionally late but far off the customary route of travel. They are noted as having the gonads small, although they should show enlargement in December. Two examples from Nauta, collected in April, are equally far off route, but not unusually dated for migrants. A record from Chayavitas I assign tentatively to *patagonica* principally because it was recorded (as *cyanoleuca*) in association with specimens from Nauta and Yurimaguas (from both of which places I have examined *patagonica*) and the collector, Edward Bartlett, noted that the bird did not breed on the upper Amazon (*in* Sclater and Salvin, 1873, Proc. Zool. Soc. London, p. 258). There are records (of "*cyanoleuca*") from most of the localities in Perú from which I have seen specimens of *patagonica* but, as noted in the discussion of *cyanoleuca*, it is impossible to allocate the records with complete assurance.

While there is a lack of sufficient data to make it possible to draw the exact distributional border between *cyanoleuca* and *patagonica*, certain facts can be outlined. The principal difficulty arises in northwestern Argentina. I have noted in a preceding paragraph the specimen of *cyanoleuca* from the Tafí trail, taken in April, and Dinelli's record of *cyanoleuca* nesting in the Tucumán region from January to March. I have also two females of *patagonica* from above San Pablo, Tucumán, collected in March. Castellanos (1934, Hornero, vol. 5, p. 307) found *patagonica* at Concepción, Tucumán, in November, but did not report that it was nesting there. I have, also, four specimens from Tilcara, Jujuy, taken in February, of which examples three are immature—presumably birds of the year and well able to fly. I judge that they were hatched farther south and a month or two earlier. I have been unable to discover any records of *patagonica* nesting in the Tucumán region or northward. The two forms undoubtedly meet in that area, but I believe that *cyanoleuca* represents the resident breeder and *patagonica* the transient, as is the case wherever the two forms have been found together.

Atticora cyanoleuca peruviana (Chapman)

Pygochelidon patagonica peruviana CHAPMAN, 1922 (Feb. 28), Amer. Mus. Novitates, no. 30, p. 7—Huaral, Prov. Lima, Perú; ♀ ; Amer. Mus. Nat. Hist.

This form occupies the Peruvian coastal area from the Department of Arequipa northward to that of La Libertad. It is resident throughout

the year, as far as I can determine. Specimens are at hand from every month except August to October. One November male and one taken in December are marked as with definitely enlarged gonads, and a third male taken in December is labeled as with slightly enlarged organs. Otherwise I have no evidence concerning possible breeding seasons.

This form, in distinction from *cyanoleuca* and *patagonica*, seems to prefer lower elevations. Most of the localities are at or near sea level. The only localities of record not represented in the material examined are Pacasmayo and Ica.

Three specimens from Isla Jambeli, Ecuador, have been queried by Chapman and by Hellmayr as being possibly referable to the present form, which the sea-level position of the locality would suggest. I believe that assignment to *patagonica* need not be questioned. A fourth specimen from the Pacific lowlands at Ventana, northern Ecuador, at 90 feet elevation, agrees with the Jambeli skins. I have seen no *peruviana* that resembles them.

In the original account of *peruviana*, Chapman describes the under tail-coverts as being wholly black as in *cyanoleuca*, but there is usually a certain amount of white at the bases of the shorter coverts and sometimes a few wholly white feathers, although there is rarely as much white as is shown by *patagonica* in its weakest extreme.

Records from Pacasmayo, Callao, and Ica should belong here. They are not duplicated in the material at hand.

Atticora flavipes (Chapman)

Pygochelidon flavipes CHAPMAN, 1922 (Feb. 28), Amer. Mus. Novitates, no. 30, p. 8—Maraynioc, Perú; ♀ ; Amer. Mus. Nat. Hist.

The type remains the only specimen of this form obtained in Perú. Two other examples, however, have been taken in Colombia—a male from Laguneta and a female from Toché—both of which I have examined in the collections of the Academy of Natural Sciences of Philadelphia. All three birds are very similar. The Colombian male is a little darker and glossier on the upper surface and has the throat somewhat more deeply colored than is shown by the two females.

While there is a possibility that *flavipes* is only an abnormal variant of *cyanoleuca*, I believe its distinctions are not ascribable to immaturity as has been suggested by various writers. Immature *cyanoleuca* sometimes has pale feet, but these are not the pronounced yellow shown by the three birds examined, nor are the other features of *flavipes* indicative of immaturity; at least they do not appear in numerous immature individuals of the *cyanoleuca* group in the series at hand.

I believe, therefore, that *flavipes* should be kept as a separate species in the absence of positive evidence to the contrary.

SPECIMENS EXAMINED

A. c. cyanoleuca.—

PERÚ:

Palambla, 4 ♂, 2 ♀;
Chaupe, 4 ♂, 2 ♀;
San Ignacio, 1 ♂, 1 ♀;
Huancabamba, 1 ♂;
San Felipe, 4 ♂;
Tamborapa, 2 ♂, 1 ♀, 1 (?);
Taulis, 2 ♂, 1 ♀;
Chugur, 1 ♂, 1 ♀;
La Lejia, 1 ♀;
Chachapoyas, 1 ♂, 1 ♀;
San Pedro, 2 ♂, 2 ♀;
Río Seco, 2 ♂;
Nuevo Loreto, 2 (?);
Huánuco, 1 ♂[1], 2 ♀[1];
Huachipa, 1 ♂[1];
Chilpes, 1 (?);
Utcuyacu, 2 ♂;
La Merced, 1 ♀;
Chanchamayo Valley, 1 ♀;
Tulumayo, 2 ♂;
Perené, 1 ♂, 1 ♀;
Rumicruz, 1 ♂;
San Ramón, 1 ♂, 1 ♀;
Torontoy, 1 ♂;
Santa Ana, 1 ♂;
San Miguel, 1 ♀;
Santo Domingo, 7 ♂, 1 ♀;
Inca Mine, 2 ♂, 1 ♀.

VENEZUELA:

(Barquisimeto, Los Palmales, Guácharo, Galipán, San Antonio, Monte Alegre, Cotiza, Cerro de Avila, Caracas, Auyan-tepui, Roraima, Paulo, Duida, Esmeralda, and Cerros de Savana [Duida]), 19 ♂, 21 ♀, 4 (?).

PANAMÁ:

Cerro Flores, 1 ♂.

COSTA RICA:

(La Estrella, Boruca, Aguas Calientes, La Hondura, San José, Irazú, Peratto, Aquinares, and Bonilla), 12 ♂, 5 ♀, 1 (?).

COLOMBIA:

(San Antonio, Río Toché, above Salento, Gallera, El Carmen, Ricaurte, Santa Elena, La Palma, Caldas, Salento, Primavera, Popayán, and El Eden), 14 ♂, 9 ♀, 1 (?).

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[1] Specimens in Chicago Natural History Museum.

ECUADOR:
(Pichincha, Cebollal, Zamora, Río de Oro, Baeza, Bucay, Paramba, Ibarra, Cayambe, Pomasqui, Alamor, Santo Domingo, near Quito, Mocha, Portovelo, La Chonta, and Guapiles), 34 ♂, 17 ♀.
BOLIVIA:
(Pulque, Río Pilocomayo, Parotani, Incachaca, Vinto, and California), 11 ♂, 9 ♀, 1 (?).
ARGENTINA:
(Tafí trail and Santa Ana, Misiones), 2 ♂.
BRAZIL:
Baía: (Baía, Itirussú, and Jaguaquara); Rio de Janeiro: (Therezopolis, Monte Serrat, and Petropolis); São Paulo: (São Sebastião); Paraná: (Corvo and Roça Nova); Minas Gerais: (Bôa Espera and Rio Caparão); Santa Catarina: (Salto Pirahy); Rio Grande do Sul: (Lagôa dos Patos, Palmares, and San Francisco de Paulo); Mato Grosso: (Chapada), 13 ♂, 5 ♀, 4 (?);
[Rio de Janeiro]: 1 ♂, 1 ♀ (cotypes of *Hirundo minuta*).

A. c. patagonica.—
VENEZUELA:
Cumaná, 1 ♂.
COLOMBIA:
"Bogotá," 1 (?).
ECUADOR:
Jambeli Island, 2 ♂, 1 ♀;
Ventana, 1 ♂.
PERÚ:
Mouth of Río Curaray, 2 ♀;
Nauta, 1 ♂, 1 (?);
Yurimaguas, 1 ♂, 1 ♀[1];
San Ignacio, 1 ♂;
Perico, 3 ♂, 3 ♀;
La Merced, 1 ♂;
San Ramón, 1 ♀[1];
Cosñipata, 2 ♂, 3 (?).
CHILE:
(Angol, Los Andes, Valle de Río Chubut, Tofo, Tierra del Fuego, and Maquehué), 5 ♂, 2 ♀, 1 (?).
ARGENTINA:
(Barracas al Sud, Estado San Martín, Mar del Plata, Bahia Blanca, Laguna Blanca, Puente del Inca, Tilcara, Mendoza, and above San Pablo), 6 ♂, 10 ♀, 3 (?).
BRAZIL:
Palmares, Rio Grande do Sul, 1 ♂.

A. c. peruviana.—
PERÚ:
Trujillo, 2 ♂, 4 ♀, 1 (?);
Huacho, 2 ♂, 3 ♀, 1 (?);
Huaral, 12 ♂ (including type), 3 ♀;

[1] Specimens in Chicago Natural History Museum.

Lima, 2 ♂, 1 (?);
Vitarte, 3 ♂, 2 ♀;
Santa Eulalia, 1 ♂[1];
Matucana, 1 ♂[1];
Végueta, 4 ♂;
Cocachacra, 1 ♀;
Moquegua, 1 ♂;
Vitor, 1 ♂;
Pisco, 1 ♂;
Arequipa, 2 ♂;
Jesús (Arequipa), 1 ♂;
Tiabaya, 1 ♀.

A. flavipes.—
COLOMBIA:
Laguneta, Caldas, 1♂[2];
Toché, Tolima, 1♀[2].
PERÚ:
Maraynioc, 1 ♀ (type).

Atticora fasciata (Gmelin)

[*Hirundo*] *fasciata* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 1022—"in Cayenna et Gujana"; Cayenne accepted as type locality.

Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 61) suggested a possible distinction between birds of this species from north of the Amazon and those from south of it, but lacked the material to certify it. He gave as possible characters for the southern population a somewhat smaller size, less purplish blue upper parts, less deeply forked tail, and slightly wider white pectoral band.

I am unable to confirm the characters of dorsal color and width of pectoral band; the reputed shallower caudal fork is evidenced only by a tendency that is swamped by the amount of overlap which leaves only eight birds out of 55 identifiable by this feature.

With regard to the length of the tail, 24 of 57 specimens show either longer or shorter measurements, as the case may be, than individuals from the alternate region. The wing measurement is somewhat more satisfactory, and 31 out of 66 specimens are outside the zone of overlap, but these include only two birds from south of the Amazon and 29 from north of it. By including a Colombian specimen and the birds from eastern Ecuador and Perú north of the Marañón with the rest of the Peruvian material, leaving the basic form with Venezuelan and extreme north-Brazilian examples associated with the Guianan series, a

[1] Specimens in Chicago Natural History Museum.
[2] Specimens in Academy of Natural Sciences of Philadelphia.

shift in the proportions is obtained which, however, is no more satisfactory than the first grouping.

Consequently I find no satisfactory basis for proposing a subspecies of *fasciata*, although there is no doubt that there is a clinal reduction in size from the Guianas and Venezuela to Perú and southern Brazil. Seven skins from the Guianas have the wing 101–109 mm. (average, 105.2); 26 from Venezuela: 97–108 (103); 12 from eastern Ecuador and northeastern Perú: 97–105 (99.8); 19 from the rest of Perú with the addition of one from southern Brazil: 94–100 (97.7).

Records from Perú are not very numerous, although the species probably occurs fairly generally over the eastern part of the country in the Tropical Zone. Records not covered by the material examined are from Nauta, Chayavitas, Lakes of Santa Cruz, Chanchamayo, San Ramón, Río Cosireni, and Chaquimayo.

SPECIMENS EXAMINED

A. fasciata.—

CAYENNE:
Tamanoir, 1 ♂;
Cayenne, 1 (?);
Cayenne trade-skin, 2 (?).

BRITISH GUIANA:
(Rio Carimang and Merumé Mountains), 3 ♀;
Demerara, 1 ♀.

"GUIANA": 1 (?).

VENEZUELA:
(Mato River, Nicare, Boca de Sina, El Merey, opposite El Merey, La Laja, Esmeralda, mouth of Río Ocamo, and opposite the mouth of the Ocamo), 22 ♂, 17 ♀, 8 (?).

BRAZIL:
Yucabí, Rio Negro, 3 ♂;
"Rio Roosevelt," Camp 4, 1 ♀.

COLOMBIA:
La Morelia, 2 ♂, 1 ♀, 1 (?).

ECUADOR:
Mouth of Lagarto Cocha, 9 ♂, 3 ♀.

PERÚ:
Mouth of Río Curaray, 3 ♂, 2 ♀;
Apayacu, 2 ♂;
Puerto Indiana, 1 ♂, 2 ♀;
Perico, Río Chinchipe, 2 ♂;
Pomará, 4 ♂, 3 ♀;
Yurimaguas, 1 ♂, 1 ♀;
Río Ucayali, 1 ♂;
"Upper" Ucayali, 1 ♂;
Sarayacu, 2 ♂;
Santa Rosa, 2 ♂, 3 ♀;

Lagarto, 1 ♀;
mouth of Río Urubamba, 3 ♂, 1 ♀;
Tulumayo, 1 ♂, 1 (?);
Candamo, 4 ♀;
Río Inambari, 1 ♂.

Orochelidon murina murina (Cassin)

Petrochelidon murina CASSIN, 1853, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, p. 370—Ecuador; I restrict the type locality to Mt. Pichincha.
Atticora cyanophaea CABANIS, 1861 (Jan.), Jour. Ornith., vol. 9, p. 92—"St. Fé de Bogota" [Colombia]; type or two cotypes in Berlin Mus.

There is considerable variation in the series at hand from Colombia to southeastern Perú, but it appears to be too irregularly distributed to supply a basis for the separation of any additional subspecies. The birds from northern Perú average the greenest dorsally and the palest ventrally, but most of them can be matched by individual specimens from the other parts of the range.

Allen (1876, Bull. Mus. Comp. Zoöl., vol. 3, p. 353) recorded one specimen of *murina* (under the name "*cinerea*") from Moho, Lake Titicaca, Perú. At the same time he listed two examples of "*Hirundo andicola*" from the same locality. These three swallows comprise all the members of the family collected by W. S. Garman on Agassiz' expedition to Lake Titicaca. One is in the American Museum collection and the other two have been kindly lent by Mr. James Greenway of the Museum of Comparative Zoölogy. All three are clearly *Petrochelidon a. andecola*. The two latter specimens are named on the labels (in Outram Bangs's handwriting) "*Atticora cinerea.*" One of them is immature and has the uropygium light tawny in contrast to the obscure coloration of the other more adult bird. Possibly this distinction led Allen to consider it as specifically distinct from the others; the American Museum example is also adult and is inscribed "*Atticora andicola.*" At any rate, there is no authentic record of *murina* from Moho, which may be removed from the localities of record for this species. It may be added that the three birds from Moho have only Lake Titicaca on their labels. Allen presumably obtained the exact locality from the collector.

I concur with the authors beginning with Baird (1865, Smithsonian Misc. Coll., no. 181, p. 312) who have been unable to accept *Hirundo cinerea* Gmelin (Systema naturae, vol. 1, pt. 2, p. 1026) as identifiable with *murina*. Such association is possible but not certain, and the name should be relegated to the category of *nomina rejecta*.

Localities of record of *murina* are Cajabamba, near Cajamarca, Tamiapampa, Acobamba, Machu Picchu, La Rayaa,, Ollache Are-

quipa, Tinta, Pampas River, between Cucas and Palcamayo, Huancavelica, Lircay and below Lachocc to Mejorada (sight records), and Limbani.

SPECIMENS EXAMINED

O. murina meridensis.—
VENEZUELA:
Llano Rucio, Mérida, 2 ♂[1] (including type);
El Valle, 4 ♂[1], 1 ♀[1];
Escorial, 1 ♂.
O. m. murina.—
COLOMBIA:
(El Peñón, Paramillo, Subia, and Anolaima), 4 ♂, 2 ♀, 3 (?);
Puente Andalucia, 1 ♀[2].
ECUADOR:
(Río Oyacachi below Chaco, Cayambe, Mt. Pichincha, Valle de Cumbaya, Chimborazo, El Corazón, Quito, and Nanegal), 7 ♂, 7 ♀.
PERÚ:
San Pedro, 3 ♂, 1 ♀;
La Lejia, 4 ♂, 1 ♀;
Taulis, 1 ♀[2];
near Leimebamba, 1 ♀[2];
Huamachuco, 1 (?);
Tahuacocha, Mt. Yerupaja, 1 ♀;
near Huánuco, 1 ♀[2];
Chipa, 1 ♂, 1 ♀, 1 (?);
Rumicruz, 1 ♂, 1 ♀;
Ollantaytambo, 4 ♂.
O. m. cyanodorsalis.—
BOLIVIA:
Pongo, 1 (?).

Riparia riparia riparia (Linnaeus)

[*Hirundo*] *riparia* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 192—"in Europae collibus arenosis abruptis" = Sweden.

"*Clivicola riparia cinerea* Vieil[lot] STEJNEGER, 1885, Bull. U. S. Natl. Mus., vol. 29, p. 268—North America.

Clivicola riparia maximilliani STEJNEGER, 1885, *ibid.*, vol. 29, p. 378, footnote —new name for the preceding.

I omit references to various synonyms of *riparia* based (as is *riparia*) on European populations.

This swallow is known in South America only as a migrant or wintering bird, for which there are surprisingly few records, for the most part widely separated. There are only two such records from Perú,

[1] Specimens in Phelps Collection, Caracas; type on deposit in the American Museum.
[2] Specimens in Chicago Natural History Museum.

from Nauta and Iquitos. I have no Peruvian specimen and cannot add to this meager list. I can, however, record four specimens from Esmeraldas, Mt. Duida, Venezuela, four from Faro, Rio Jamundá, Brazil, and one male from Chilón, Santa Cruz, Bolivia. The last-named bird is undoubtedly the basis for the inclusion of Bolivia in the range of the species by Naumburg (1930, Bull. Amer. Mus. Nat. Hist., vol. 60, p. 314), because there are no other specimens or records from that country.

It may be pertinent to record here a male specimen of *R. r. ijimae* (*Clivicola riparia ijimae* Lönnberg, 1908, Jour. College Sci. Imp. Univ. Tokyo, vol. 23, pt. 14, p. 38—Sakhalin Island) from Port Moller, Alaska Peninsula, collected June 19, 1928, by F. L. Jaques. This specimen agrees with birds from the Commander Islands, Siberia, and Japan in being pronouncedly darker both dorsally and on the breast than any European or other American example of the species I have seen. Arny (1952, Condor, vol. 54, pp. 356–357) reported a decided post-mortem fading of specimens of this species, apparent within two or three years and developing regularly from seven to 10 years after collection. On this basis he discounted the earlier records of *ijimae* from Point Barrow, Alaska, as being "*maximiliani*" misidentified through comparison of older faded specimens. The Port Moller example here recorded was taken 26 years ago and shows no sign of fading, being darker even than some of the other specimens of *ijimae*. I have no more recent northern examples, but most of the South American individuals at hand were taken in 1928 and 1931 and are therefore not quite so old as the Port Moller bird, which they do not resemble in color, being similar to North American specimens.

Whatever the identity of the previously recorded examples of "*ijimae*" from Alaska, the specimen now before me from Port Moller appears to belong to that form. The date of collection, in June, suggests that it was breeding on the Alaska Peninsula and not a casual visitor. The development of the gonads, unfortunately, is not indicated on the label.

Hirundo rustica erythrogaster Boddaert

Hirundo erythrogaster BODDAERT, 1873 (Dec.), Table des planches enluminéez d'histoire naturelle, p. 45—based on "Hirondelle à ventre roux de Cayenne" of Daubenton, Planches enluminées, pl. 724, fig. 1; Cayenne.

Trujillo, 2 ♂, 1 ♀; Chorrillos, 1 ♀; Paracas Bay, 1 ♂; Vitarte, 6 ♂, 1 ♀; Végueta, 3 ♀, 1 (?); Pisco, 5 ♂, 3 ♀; Yarina Cocha, 1 ♂; Santa Rosa (Río Ucayali), 1 ♂, 3 ♀.

Six synonyms of *erythrogaster* are commonly cited, based on birds from Alaska, Pennsylvania, "Cayenne and New York," Paraguay, and México. I omit the list of these references of which I have no criticism.

Erythrogaster is a common migrant or winter resident over the whole of México and Central and South America, including the West Indies. Considerable individual variation is exhibited in the more than 150 specimens at hand from this non-breeding range. The most striking individual in the series is a non-sexed bird from Lago Uaimy, Faro, Brazil, dated February 23, 1931, which has an unbroken steel-blue band across the upper part of the breast and a narrow, broken one across the lower breast, with the intervening space occupied by a patch of rufous, paler than the throat but deeper than the lower under parts. The lower under parts are Apricot Buff medially and Cinnamon-Rufous on the flanks, showing a depth of coloration quite unlike the color of *H. r. gutturalis*, to which the steel-blue pectoral band might otherwise suggest special affinity. Various other specimens show an approach to the pattern of this Faro bird, but none has the pectoral band unbroken or so wide as in this example.

Peruvian records of *erythrogaster* not duplicated in the material examined are from Tumbes, Pacasmayo, Chepén, Callao, Lima, Ica, and Cosñipata.

Idiroprocne albiventer (Boddaert)

Hirundo albiventer BODDAERT, 1783 (Dec.), Table des planches enluminéez d'histoire naturelle, p. 32—based on Daubenton, Planches enluminées, pl. 546, fig. 1 and text; Cayenne.

[*Hirundo*] *leucoptera* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 1022—part; based on Daubenton, *loc. cit.*

Hirundo aequitorialis [*sic*] LAWRENCE, 1866 (Dec.), Ann. Lyc. Nat. Hist. New York, vol. 8, p. 400—"Quito"; *errore*, Río Napo, Ecuador, proposed by Hellmayr, 1935; type in Amer. Mus. Nat. Hist.

Mouth of Río Curaray, 3 ♂, 1 ♀; Orosa, 1 ♀; Apayacu, 8 ♂, 3 ♀; upper Ucayali, 1 ♀; Santa Rosa, 6 ♂, 3 ♀; Lagarto, 6 ♂, 1 ♀; Astillero, 1 ♂; Sauces, 1 ♂.

Compared with nearly 200 specimens from other parts of the range. No definite distinctions were noted other than those of individual variation. As is the case with other allied species of the genus, the metallic coloration of the upper parts becomes bluer, less greenish, with abrasion of the feathers. Furthermore, the very broad white margins of the inner remiges and greater upper wing-coverts may sometimes be almost completely worn off, leaving only a fine margin on some of the feathers. Any intrinsic geographical variation in the extent of this white on the

wings, if such exists, would be difficult to determine. The size and shape of the bill also vary considerably without obvious significance.

In some of these particulars, *albiventer* approaches the Central American *a. albilinea*, especially when both are in worn plumage; *a. albilinea* usually has only a narrow margin of white on the outer few rectrices, although a few examples have the whole inner web, except toward the tip, rather evenly pale, not clear white and not sharply defined from the tip; *albiventer* has most of the inner web of these feathers strongly whitish, abruptly defined from the dark terminal area. In *albilinea* the bases of the mantle feathers are grayish or white, while in *albiventer* they are always white, at least in the adults. *Albilinea* has a whitish supraloral streak which is lacking in *albiventer* as it is said to be in *albilinea stolzmanni*. In *a. albilinea* and *a. stolzmanni* (as described) the breast is washed with grayish, while in *albiventer* it is as white as the throat and belly. In even relatively worn plumage, of course, the extensive white area on the wings in *albiventer* is quite definitive. The bill, on average, is longer than in *albilinea*, proportionally less broad at the base, and less strongly compressed toward the tip.

This species has a wide range over most of South America east of the Andes and south to Paraguay and northern Argentina. The series at hand comprises examples as follows: Colombia, 22; Venezuela, 45; British Guiana, 7; Surinam, 3; Cayenne, 1; Trinidad, 2; Brazil, 96; Bolivia, 3; Ecuador, 4 (including the type of "*aequitorialis*"); Perú, 35 as listed above.

Additional Peruvian records are from Pebas, Elvira, Guajango, Lagunas, Santa Cruz, Yurimaguas, "Lower Ucayali," La Merced, and Yahuarmayo. Sight records have been reported from the Río Paranapura, above Yurimaguas.

Iridoprocne albilinea stolzmanni (Philippi)

Hirundo leucopygia (not *H. leucopyga* Meyen, 1834, emended to *leucopygia* by Gould, *in* Darwin, 1839) Taczanowski, 1880, Proc. Zool. Soc. London, p. 192—Chepén, Perú; type formerly in Warsaw Mus., now lost.

Hirundo Stolzmanni Philippi, 1902, An. Mus. Nac. Chile, zool., vol. 15, p. 23 in text—new name for *leucopygia* Taczanowski.

It is fortunate that Gould and various later authors emended Meyen's "*leucopyga*" to "*leucopygia*" before Taczanowski proposed the latter name for the present species. Otherwise we would have both *leucopyga* and *leucopygia* in the same genus; one does not preoccupy the other.

There is some uncertainty surrounding this swallow. Stolzmann collected four specimens (possibly five) at Chepén, but subsequent

collectors in that part of Perú have failed to find any others, nor has the bird been discovered elsewhere. The type was lost during World War I; one specimen went to the British Museum and one to the Senckenberg Museum in Frankfort; one specimen has been reported as in the Natural History Museum "Javier Prado" in Lima, but it may be a duplicate left in Lima by the collector and thus not one of the four that passed through Taczanowski's hands.

Hellmayr examined the Frankfort Museum specimen and concluded that *stolzmanni* was conspecific with *albilinea* of Central America, differing only subspecifically, in spite of the wide hiatus between Panamá and northern Perú in which *albilinea* does not occur. It might be suspected that the four birds were migrants from either the north or south, but the differences from any of the other species, migratory or otherwise, are greater than those found in comparison with *albilinea*. For the present, therefore, we may accept Hellmayr's conclusions, although future collectors may uncover material that will lead to other decisions.

Iridoprocne leucorrhoa (Vieillot)

Hirundo leucorrhoa VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, nouv. éd., vol. 14, p. 519—based on "Golondrina rabadilla blanca" of Azara, no. 304; Paraguay.

Hirundo frontalis GOULD (not Quoy and Gaimard, 1830), 1837 (Nov.), Proc. Zool. Soc. London, vol. 5, p. 22—Montevideo.

Hirundo gouldii CASSIN, 1850, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, no. 4, p. 69—new name for *Hirundo frontalis* Gould.

I have seen no Peruvian specimens of this species. There is a record from Cosñipata in the southeastern part of the country, to which Ridoutt (1941, Bol. Mus. Hist. Nat. "Javier Prado," vol. 5, no. 17, p. 256) adds Chanchamayo.

"*Hirundo peruviana* Gmelin"

[*Hirundo*] *peruviana* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 1025—based on *Hirundo peruviana major* Brisson, Ornithologie, vol. 2, p. 498, no. 7; Perú.

The identity of this bird has never been satisfactorily determined, as far as I have been able to discover. It was described as black above and white below, with head and neck gray and with an ashy band across the breast. The use of the term "*major*" by Brisson is not of much service as a guide to the size of this bird, as it was used to indicate comparison with [*Hirundo*] *cinerea* Gmelin (1789, *op. cit.*, vol. 1, p. 1026; based on *Hirundo peruviana* Brisson, *loc. cit.*, no. 6; Perú and

Tahiti), which is of equally uncertain identity, although the name *cinerea* was long used for the species *Orochelidon murina*.

There is no assurance that either of Brisson's species, *peruviana* and *peruviana major*, came from Perú or that they were swallows of any kind. Some of Gmelin's species of "*Hirundo*" belong to the family Apodidae, far removed from the swallows. The only reason for the inclusion here of the above brief account is that the original references tend to involve the swallows and Perú, however erroneously.