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NOTES ON SOUTH AMERICAN
BIRDS, WITH DESCRIPTIONS
OF NEW SUBSPECIES

BY

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NOTES ON SOUTH AMERICAN BIRDS, WITH DESCRIPTIONS OF NEW SUBSPECIES

BY CHARLES B. CORY

Since the publication of my previous paper on South American birds received from Museum expeditions, further study of the collections has brought to light several apparently new forms which are here described. In this connection I wish to express my thanks to the authorities of various museums and individuals for the loan of specimens for comparison, and especially to Prof. Robert Ridgway and Dr. C. W. Richmond of the United States National Museum, Washington, D. C., to Dr. F. M. Chapman of the American Museum of Natural History, New York, to Dr. Witmer Stone of the Academy of Natural Sciences of Philadelphia, and to Mr. J. Rodway of the Royal Agricultural and Commercial Society of British Guiana.

***Threnetes leucurus rufigastra* subsp. nov.**

Type from Moyobamba, Peru. Adult female, No. 47153, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, January 24, 1912.

Similar in size and general markings to *T. l. leucurus* from Guiana, but differs in having the sides, flanks and abdomen decidedly more brownish buff; back somewhat more bronzy green than in *leucurus*.

***Leucippus fallax richmondi* nom. nov.**

In 1895 (Auk, XII, p. 369) Dr. C. W. Richmond separated the Margarita Island form of *Leucippus fallax*, naming it *Doleromya pallida*. It is apparently a perfectly good subspecies, the characters given for it being well marked in a good series. Unfortunately, however, Dr. Richmond's name *pallida* can not be used for it, being antedated by *Leucippus pallidus* Taczanowski (Proc. Zool. Soc. Lond., Part 4, 1874 [1875], p. 542; and again in Orn. Pérou, I, 1884, p. 402). I therefore propose to name the pale Margaritan bird *Leucippus fallax richmondi*. I have examined thirteen males and a female from Margarita Island,

and three males and a female (?) from Tortuga Island in this Museum, collected by John F. Ferry.

***Piaya cayana cearæ* subsp. nov.**

Type from Jua, near Iguatu, Ceara, Brazil. Adult female, No. 47457, Field Museum of Natural History. Collected by R. H. Becker, August 20, 1913.

Back approaching hazel brown, but coloration duller and less rufescent than in *P. c. colombiana* from Colombia, and nearer *P. c. pallescens* (from state of Bahia); throat nearly as in *pallescens*.

Nearest to *P. c. pallescens*, but differs in having upper parts lighter; upper surface of rectrices brighter and more rufescent (less tinged with purplish); lower abdomen and thighs pale ashy (not neutral gray); under tail coverts shading into pallid neutral gray, decidedly paler and more whitish than in any other known form; under surface of rectrices strongly rufescent, similar to *P. c. colombiana*, not dull blackish tinged with rufous as in specimens examined of *P. c. pallescens* from various localities in Bahia; middle of abdomen ashy white.

Wing, 156; tail, 280; bill, 26; tarsus, 39 mm.

Specimens examined from Jua, 2 ♂, 2 ♀; from Quixada, Ceara, 1 ♀. A specimen from Pernambuco in the U. S. National Museum collection (No. 39704) appears to be intermediate between this form and *P. c. pallescens*, but approaches nearer to *pallescens* than to *cearæ*. The Pernambuco bird approaches *cearæ* in the coloration of the lower abdomen, under tail coverts and flanks, but is much nearer *pallescens* in the coloration of the upper parts and the darker and more purplish upper surface of rectrices and the less rufous under surface of those feathers.

***Piaya melanogaster ochracea* subsp. nov.**

Type from Yurimaguas, Yane Yaca, Peru. Female, No. 44096, Field Museum of Natural History. Collected by M. P. Anderson, September 8, 1912.

Similar to *P. m. melanogaster*, but differs in having the bill smaller and general coloration somewhat paler; crown paler and more ashy gray; upper parts, throat and breast more tinged with ochraceous rufous.

Wing, 131; tail, 216; tarsus, 37; bill (culmen), 24; depth of bill, 12 mm.

Compared with specimens from British Guiana these differences appear to be constant.

***Chrysoptilus punctigula zuliae* subsp. nov.**

Type from Encontrados, Zulia, western Venezuela. Adult male, No. 34632, Field Museum of Natural History. Collected by N. Dearborn, February 14, 1908.

Similar to *C. p. punctipectus* from Cumana, Venezuela, in general coloration of upper parts, but differs in having the throat much blacker, the white spots being much smaller, and the under parts, except middle of lower abdomen, with rounded black spots somewhat approaching *C. p. guttatus* from northern Peru. It differs from *C. p. guttatus* from Peru in its much more olive and less golden green back with smaller and narrower black bands on the upper parts; smaller white spots on the throat, and lack of reddish tinge on the lower throat and upper breast (the last character may vary with age). From *C. p. ujhelyii* and *C. p. striatigularis* it may be distinguished at a glance by its spotted (not streaked) throat, more heavily banded upper parts, and other characters.

Wing, 99; tail, 70; bill, 21; tarsus, 18 mm.

This apparently well marked subspecies inhabits the heavily wooded, low, humid region in the vicinity of Encontrados and Catatumbo. Two females from La Ceiba, Trujillo, Venezuela, while not typical approach close to this form. Specimens examined from Venezuela:—Encontrados, Zulia, 2 ♂, 4 ♀; Catatumbo, 2 ♀; La Ceiba, Trujillo, 2 ♀ (not quite typical).

For convenience of ornithologists the following key to the group is submitted:

KEY TO THE SUBSPECIES OF *Chrysoptilus Punctigula* (Bodd.).

A. Throat black, spotted with white.

Upper parts brownish golden olive; wing, about 105; tail, 62; culmen, 23 mm.

C. punctigula punctigula (Bodd.). (Cayenne)
Guiana.

Upper parts slightly more golden olive; wing, about 110; tail, 70, culmen, 23 mm.

C. punctigula guttatus (Spix). (Amazon
region, Brazil) Amazon region and northeast
Peru.

Upper parts much less golden and more olive green; abdomen and flanks without black spots.

C. punctigula punctipectus (Cab. & Hein.).
(Venezuela) Venezuela, northeastern Colombia.

Upper parts approaching *punctipectus*, but throat blacker, with white spots smaller, breast more heavily spotted; abdomen and flanks more or less spotted.

C. punctigula zuliae Cory. (Encontrados, Zulia, Venezuela) Lower Catatumbo River region, Zulia, Venezuela.

B. Throat white, streaked with black.

Black bars on feathers of upper parts longer; under parts more heavily spotted.

C. punctigula striatigularis Chapman.
(Cali, Cauca Valley, Colombia) Cauca Valley region, Colombia, west of eastern Andes.

Black bars on feathers of upper parts small and narrow and more or less obscure; spots on under parts smaller.

C. punctigula ujhelyii Madarasz. (Aracataca, Santa Marta, Colombia) Northern Colombia.

Veniliornis tænionotus cearæ subsp. nov.

Type from Serra Baturite, Ceara, Brazil. Adult male, No. 47441, Field Museum of Natural History. Collected by R. H. Becker, July 18, 1913.

Similar to *V. t. tænionotus* from Bahia, etc., but upper parts much more golden; the transverse yellow barring on back less distinct; under parts paler, more olivaceous; rump and upper tail coverts strongly tinged with golden yellow (not olive with yellowish markings as in typical *V. t. tænionotus*); outer tail feather much more strongly banded with yellowish buff.

Wing, 87; tail, 63; bill, 20; tarsus, 16 mm.

Specimens examined:— 1 ♂, 2 ♀ from Serra Baturite, Ceara; 1 ♀ from Jua, near Iguatu, Ceara. One of the females from Serra Baturite has the lower back and upper tail coverts tinged with red.

Scapanus melanoleucus cearæ subsp. nov.

Type from Jua, near Iguatu, Ceara, Brazil. Adult male, No. 47463, Field Museum of Natural History. Collected by R. H. Becker, August 24, 1913.

Similar to *S. m. melanoleucus*, but much smaller.

Wing, 160; tail, 118; bill, 38 mm.

Birds from Macaco Secco, near Andarahy, Bahia, are apparently intermediate in size between *S. m. melanoleucus* and *S. m. cearæ*, and might be referred to either form, the measurements of the male being: wing, 175; tail, 125; bill, 39 mm. But in a series of specimens from Guiana, which I assume to represent typical *S. m. melanoleucus*, the average measurements of the males are: wing, 188; tail, 140; bill, 40 mm.

***Scapanus pallens peruviana* subsp. nov.**

Type from Molinopampa, Peru. Adult female, No. 44816, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, June 18, 1912.

Similar to *S. p. pallens* from Colombia, but differs in having the under parts darker and more chestnut buff; the black bars heavier and clearly marked on the lower abdomen, flanks and under tail coverts; the white patch on the back more strongly tinged with buff; and the rump and the upper tail coverts deeper ochraceous buff without bars.

Wing, 170; tail, 125; bill, 45 mm.

DESCRIPTIVE KEY TO THE SOUTH AMERICAN SPECIES AND SUB-SPECIES BELONGING TO THE GENUS *Piaya*

(Colors as given in Ridgway's Color Standards and Color Nomenclature, Washington, 1912. Type localities given in parenthesis.)

I. Crown gray, very different from the back.

Bill red; back hazel; throat and breast cinnamon rufous; abdomen dull black; wing, about 130; tail, about 225; culmen, 25; depth of bill, 12 mm.

Piaya melanogaster melanogaster (Vieill.).

(Guiana) Guiana and northern Brazil, Ecuador?

Similar but paler; upper parts and throat more tawny; bill somewhat smaller; wing, about 130; tail, about 225; culmen, 23; depth of bill, 10 mm.

Piaya melanogaster ochracea Cory. (Yurimaguas, Peru) Peru.

II. Crown nearly the same color as the back.

A. Size small; wing less than 115 mm. (4.50 in.).

Bill yellowish; back chestnut ferrugineous; throat and breast cinnamon rufous; abdomen gray tinged with buff; wing, about 107; tail, about 155 mm.

Piaya rutila Illiger. (Cayenne) South American from Brazil and Peru northward.

B. Size larger; wing more than 115 mm. (4.50 in.).

a. More or less of under surface of rectrices distinctly rufous or rusty.

a¹ Under tail coverts grayish.

Back between auburn brown and Sanford brown; throat vinaceous fawn; upper abdomen pale mouse gray; lower abdomen neutral gray; under tail coverts slightly darker neutral gray; thighs smoke gray; under wing coverts ash white; wing, about 140; tail, about 295 mm.

Piaya cayana colombiana (Cab.). (Cartagena, Colombia) Northern Colombia and Venezuela.

Back between Hessian brown and claret brown; throat fawn color; upper abdomen smoke gray; lower abdomen deep neutral gray; under tail coverts darker, approaching dark neutral gray; thighs deep neutral gray; rusty coloration on tail decidedly darker than in *colombiana*; under wing coverts pale mouse gray; wing, about 140; tail, about 290 mm.

Piaya cayana venezuelensis Cory. (Orope, Zulia, Venezuela) Low country of Orope region, Zulia, Venezuela.

Back near hazel brown; throat approaching vinaceous fawn, but with a tinge of ochraceous (paler and quite different from *cayana*); upper abdomen between smoke gray and light neutral gray (similar to *cayana*); lower abdomen neutral gray, shading into slightly darker neutral gray on under tail coverts; under surface of rectrices only tinged with rufous and not strongly rufous as in *cearæ*; wing, about 147; tail, 285 mm.

Piaya cayana pallescens (Cab. & Hein.). ("North Brazil," suggest Bahia) Central and eastern Brazil.

Back approaching hazel brown, but paler than in *pallescens* from Bahia; throat as in *pallescens*; upper

abdomen pallid mouse gray; middle of abdomen ashy white; thighs, lower abdomen and under tail coverts between pale neutral gray and pallid neutral gray, much paler than in any other known form; under surface of rectrices strongly rufescent; wing, about 148; tail, about 285 mm.

Piaya cayana cearæ Cory. (Jua, Ceara, Brazil) Northeast Brazil (Ceara).

Back between auburn brown and chestnut bay; throat vinaceous fawn; upper abdomen between smoke gray and light neutral gray; lower abdomen neutral gray; under tail coverts near dark neutral gray. Approaches *cayana cayana*, but brighter coloration above, rusty marking on under surface of rectrices and somewhat smaller size will distinguish it. Wing, about 140; tail, about 240 mm.

Piaya cayana insulana Hellmayr. (Trinidad)

b¹ Under tail coverts black.

Back between bay and mahogany red; throat fawn color; under wing coverts pale mouse gray; upper abdomen between neutral gray and smoke gray; lower abdomen, thighs and under tail coverts deep black; wing, about 140; tail, about 285 mm.

Piaya cayana caucaë Stone. (Rio Cauca, Colombia) Cauca Valley and possibly south to Ecuador.*

b. Under surface of rectrices blackish or at most with a tinge of rufous or rusty on some feathers.

c¹ Under tail coverts grayish.

Back chestnut bay, between claret brown and Hessian brown; throat vinaceous fawn; upper abdomen between smoke gray and neutral gray; lower abdomen neutral gray; under tail coverts near dark neutral gray; under wing coverts whitish ashy; wing, about 143; tail, about 280 mm.

Piaya cayana cayana (Linn.). (Cayenne) Guiana, eastern Venezuela and northern Brazil.

d¹ Under tail coverts blackish.

Back between bay and chestnut; upper abdomen

* A specimen in the U. S. National Museum Collection, No. 236439, labeled "Ecuador," is apparently this form.

pallid neutral gray; lower abdomen between smoke gray and neutral gray; under tail coverts grayish black; under wing coverts pale mouse gray; wing, about 144; tail, about 265 mm.

Piaya cayana nigricrissa Sclater (Babahoyo, Ecuador) * Northern Peru, Ecuador, and Colombia north to Bogota.

Compared with *nigricrissa* from Ecuador. *P. c. mehleri* from Central America has the lower breast and upper abdomen approaching neutral gray (decidedly darker than in *nigricrissa*); the lower abdomen and thighs are also distinctly more blackish, the under tail coverts slightly so, and the coloration of the upper parts is darker. Differs from *P. c. nigricrissa* in its ashy gray (instead of quite black) tibia, and blackish gray (instead of black) crissum; under surface of the tail entirely black. Differs from *P. cayana* in the much darker brown (less fox red) upper parts, and the blackish under tail coverts.†

Piaya cayana obscura Sneathlidge. (Rio Purus, W. Brazil) Western Brazil, Bolivia, S. E. Peru.‡

Back walnut bay; throat vinaceous fawn; under wing coverts pale mouse gray; upper abdomen between smoke gray and neutral gray; lower abdomen blackish; under tail coverts blackish (more nearly black than in *nigricrissa*, but not so deep black as in *cauca*); thighs dusky or dark neutral gray; wing, about 170; tail (Paraguay specimens), about 365 mm.§

Piaya cayana macroura Gambell. (Paraguay) Paraguay and southern Brazil.

* There appears to be no question as to the type locality of this subspecies, the name *nigricrissa* having been first applied by Dr. Sclater to three examples from Babahoyo, Ecuador, which he considered to be new. Later, in giving a list of the species of *Piaya* in his collection, he states he has specimens of the new form "ex Nov. Grenada, rep. Ecuat. et Peru." (Proc. Zool. Soc. Lond., 1860, p. 285.)

† From original description, as I have seen no specimens. The description is unsatisfactory and no measurements are given. *P. c. nigricrissa* from Ecuador has the tibia approaching neutral gray or only slightly darker, and the crissum is grayish black (not deep black as in *cauca*).

‡ As given by Brabourne & Chubb, Bds. South America, I, 1912, p. 152.

§ Specimens from Paraguay and extreme southern Brazil are very large, while those from farther north are much smaller and may be separable subspecifically (for remarks on this subject see ante).

A REVISION OF THE SPARROW HAWKS (GENUS *CERCHNEIS*)
OF SOUTH AMERICA AND ADJACENT ISLANDS

In describing the supposed new subspecies belonging to this genus in the present and in a previous paper,* the writer examined about 200 specimens from South America and adjacent islands, including the type specimens of all the described forms except that of *C. s. isabellina* and *C. s. australis* (*gracilis* Swainson). The study of this large series seems to show:

1. That the extent of the rufous on the crown (when present) is more or less variable with the age of the individual, but, while in birds from North America and the West Indies it is present in the majority and is rarely entirely absent even in specimens which are evidently adult, in birds from South America it is absent in the majority of specimens and when present seems to be much more restricted in extent, more than seventy-five per cent. of the series of males from South America having no rufous on the crown and in a number of others having it merely indicated by a slight trace. Very few males have a well marked crown patch and at most it is apparently restricted to the basal half. The material available is not sufficient to decide to what extent a rufous patch is present in the very young of these forms.

2. That no dependable correlation exists in the extent of the rufous crown patch and the black banding of the back. Very young birds apparently always have the back heavily banded, but in those which I have examined the amount of rufous on the crown is very variable, one young male from Curacao in its first plumage showing merely a trace of rufous. Some apparently adult males have considerable rufous on the crown and almost the entire back banded with black, while others from the same region have about the same amount of rufous on the crown and the back practically immaculate. Six apparently adult males from the Rio Branco region (northern Brazil) have clear gray crowns, but three of them have the back considerably banded and three have it almost immaculate. Two specimens from the same region show a small rufous patch on the crown; one of these has a few small bands on the lower back, while in the other the back is nearly immaculate. While the females from the same locality have the markings of the upper parts practically identical, two have a rufous crown patch and in two it is absent.

3. That the banding of the back apparently varies with age in individuals, but to what extent remains to be determined. In young males the whole back is usually heavily banded, while in adults the upper back at least is nearly or quite immaculate.

* Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, pp. 293-302.

4. That the extent, shape and size of the black spots on the under parts in males from the same region evidently vary in individuals of practically the same age, and while in some cases they apparently show decided diminution in the adult, in others they are much more persistent. In the series before me, old males of *C. s. cinnamomina* and *C. s. australis* have the spots much smaller, narrower, and confined to the sides and upper abdomen, the lower abdomen and flanks being immaculate. In the young the spots are much larger and extend upon the lower abdomen and flanks. In *C. s. brevipennis*, however, (and probably other closely allied forms) very young males have the lower breast and practically the whole of the abdomen heavily spotted with black, while in old males the under parts appear to be nearly immaculate, the black spots being largely or wholly confined to the flanks and sides of the body. It is also evident, at least in some of the South American forms, that the presence or absence of rufous on the crown and the extent of the black spots on the under parts are not correlated, as for example, in the series of 20 males from Chapada, Matto Grosso, and Bahia, none of the specimens showing rufous on the crown differ very appreciably in the amount of black spotting on the under parts from those having the crown clear gray.

5. That the variation in coloration and marking of the outer rectrix is very great in specimens from some regions, but decidedly less so from others; and while the instability of this character apparently renders it by itself of little or no diagnostic value, it seems desirable that in regions where deviation from the general type appears to be the exception it should be taken into consideration in connection with other differences in distinguishing subspecies, if for no other reason than to enable future investigators to draw their own conclusions.

As an illustration of this, in the series before me 28 males from Colombia and western Venezuela show great variation in the coloration and pattern of the inner web of the outer rectrix: in some it is largely rufous; in others black and white without rufous; and again part white and part rufous, sometimes with one and again with several black bars. Under such conditions such a character would be obviously useless in diagnosis. In fact in some individuals the outer rectrix on opposite sides of the tail is differently colored in the same bird. This is at least suggestive, and as the weight of evidence appears to prove that this perplexing variation in coloration is not due to age,* it would seem not unlikely that it might be largely the result of intergradation in regions

* Specimens which I have examined show that, with the exception of a rusty tinge on the tip, the coloration of the outer rectrix is normally the same in young and old birds of *C. s. paulus* and *C. s. brevipennis*. See also, Hartert, Nov. Zool., 1898, p. 501.

where two or more subspecies meet,* or, in regions where such variation is the exception, to a tendency to atavism or reversion towards an ancient type from which they have become more or less differentiated by difference in environment. Specimens from other parts of South America, however, do not show such extreme variability in this character; in fact deviation from the regional type is seemingly the exception. In the series of specimens from Peru and Chile the normal coloration of the inner web of the outer rectrix posterior to the subterminal black band seems to be rufous, as it is so represented in 20 out of 24 specimens from those regions. On the other hand, out of 20 males from the Provinces of Matto Grosso and Bahia, Brazil, 16 have the inner web of the outer rectrix alternately barred with black and white without rufous; 3 have it part white and part rufous, and only one shows the rufous coloration as in the normal Chilean bird. All of the males which I have seen from Margarita I. and 7 of the 9 from Curacao and Aruba have the inner web of the outer rectrix (posterior to the subterminal black bar) barred with black and white. In two from Curacao it is variegated, being part rufous and part white, while in all the specimens from the Rio Branco region, northern Brazil (7 males from Boa Vista), it is plain rufous.

6. That the variation in length of the subterminal black zone or band on the rectrices seems to represent a good racial character, being very short in *cinnamomina* from Chile, strikingly long in *ochracea* from northern Colombia and northern Venezuela, and showing a gradual gradation in intermediate races.

7. That the absence or presence, as well as the size and number, of the white spots on the outer webs of some of the outer primaries represents a good distinguishing character in some races.

8. That there is comparatively little individual variation in the intensity of the coloration of the under parts in adults of the same subspecies, but that immature birds are paler. In very young males the gray wing coverts are tipped with rufous buff and the inner primaries strongly tipped with white or whitish.

9. That the configuration and confluence or non-confluence of the distal white patches on the inner webs of the outer primaries seem to be too variable to be of value in diagnosis, and apparently have no dependable racial significance. For example, in one of the eight specimens of *peruviana* now before me, none of the markings are confluent; in two

* A possible analogy suggests itself in the case of *Colaptes auratus luteus* and *Colaptes cafer collaris* in the Yellowstone and Black Hills regions in North America, where great irregularities in coloration are very frequent, abnormally colored specimens approaching the California form, *C. c. collaris*, being also occasionally found east of the Mississippi River and *vice versa*.

the distal patches are confluent on the fourth; in three they are confluent on the third; and in two, on the third and fifth primary. The same irregularity is shown in all specimens representing other races, with the exception of *caucæ*, fully 96 per cent. having the distal patches joined on at least one primary and the majority on two or more. In *caucæ*, however, none of the specimens examined have any of these markings confluent, but in view of the variability of the character in other forms it would seem probable that in *caucæ* also in a larger series it would be found to be inconstant.

LIST OF THE SUBSPECIES OF *Cerchneis sparveria* IN SOUTH AMERICA,
WITH TYPE LOCALITIES

- Cerchneis sparveria cinnamomina* (Swains.). (Chile) See page 315.
Cerchneis sparveria fernandensis Chapman. (Masatierra, Juan Fernandez Islands.) See page 316.
Cerchneis sparveria australis Ridgway. (Bahia, Brazil) See page 316.
Cerchneis sparveria peruviana Cory. (Chachapoyas, alt. about 7700 ft., northern Peru.) See page 319.
Cerchneis sparveria caucæ Chapman. (La Manuelita, alt. about 3500 ft., near Palmira, Cauca Valley, Colombia.) See page 321.
Cerchneis sparveria æquatorialis Mearns. (Guayaquil,? Ecuador.) See page 322.
Cerchneis sparveria andina * subsp. nov. (Quito, alt. about 9300 ft., Ecuador.) See page 323.
Cerchneis sparveria intermedia * subsp. nov. (Villavicencio, alt. about 1600 ft., base of eastern Andes, Colombia.) See page 325.
Cerchneis sparveria ochracea Cory. (Colon, alt. about 2500 ft., western Venezuela.) See page 326.
Cerchneis sparveria perplexa subsp. nov. (Lower Essequibo River, British Guiana.) See page 327.
Cerchneis sparveria isabellina (Swains.). (Demerara.) See page 328.
Cerchneis sparveria distincta Cory. (Boa Vista, Rio Branco, Amazonas, Brazil.) See page 330.
Cerchneis sparveria margaritensis Cory. (Margarita Island, Venezuela.) See page 331.
Cerchneis sparveria brevipennis (Berlep.). Curacao, Aruba and Bonaire Islands. See page 332.

* I am indebted to Dr. F. M. Chapman, Curator of Birds in the American Museum of Natural History, New York, for permission to name these new forms, the types being in the collection of that museum.

DISTINGUISHING CHARACTERS AND SUPPOSED DISTRIBUTION OF SUB-
SPECIES OF *Cerchneis sparveria* (LINN.) IN SOUTH AMERICA
AND ADJACENT ISLANDS

***Cerchneis sparveria cinnamomina* (Swains.).**

Falco cinnamomina Swains., Anim. in Menag., I, 1837, p. 281.

Type locality: "Chile."

Range: Chile, northwestern, western and southern Argentina to Patagonia and Straits of Magellan, northward to southern Peru and Paraguay; intergrading with *australis* in northeastern Argentina, Paraguay, and Rio Grande do Sul, Brazil, and with *peruviana* in southern Peru.

Characters: Male. Size large; tips of rectrices with more or less rufous, usually rufous or rufous and white; central rectrices often entirely tipped with rufous, but usually with rufous and gray; subterminal black band short (from 9 to 16, averaging about 13), decidedly narrower than in *australis* or *peruviana*; inner web of outer rectrix normally rufous, usually with one subterminal black band and a white or white and rufous tip; breast tinged with pale ochraceous rufous (averaging nearly as pale as in *australis*); under parts whitish, with more or less numerous rounded black spots; exposed white spots on outer webs of outer primaries restricted to 2 or 3 small narrow marks near the shaft on the third and occasionally showing a trace of one on the second.

Wing, 187 to 199, average 193; tail, 129 to 143, average 134 mm.

Female. Similar to *australis*, but averaging larger; black bars on rectrices narrower and less complete and subterminal band narrower; outer rectrix occasionally immaculate.

Wing, 195 to 208, average 198; tail, 132 to 144, average 137 mm.

Comparative differences: Male differs from *australis* (from Bahia and Matto Grosso) in averaging considerably larger and in difference in normal coloration of the rectrices (*australis* usually has no rufous on the outer rectrix, the tips of most of the rectrices white, and rarely showing any rufous); subterminal black bands on the rectrices narrower, and under parts usually not quite so pale. Female differs from *australis* in average larger size; black bars on tail narrower and less complete; subterminal band narrower; outer rectrix with black marking usually smaller and more often immaculate. Male of *cinnamomina* differs from *peruviana* by its larger size, more whitish and more heavily spotted under parts; breast paler (less tinged with ochraceous rufous); sides and flanks whitish (not noticeably tinged with ochraceous buff as in *peruviana*); subterminal band on tail shorter.

Specimens examined: "Chile" — 3 ♂, 1 ♀; Valdivia, 1 ♂; Cautin, 1 ♂, 2 ♀; Santiago, 1 ♂, 1 ♀; Straits of Magellan, 1 ♀.

Argentina — Chilicito, Prov. of Rioja, 1 ♂, 1 ♀; Rio Chico (Patagonia), 2 ♀; Rio Grande do Sul, 1 ♂, 1 ♀ (not typical, intergrades).

Remarks: Two specimens from Rio Grande do Sul are apparently intergrades between this form and *australis*. The male is of large size (wing, 197) and shows a little rufous bordering the white on the tips of some of the rectrices; the inner web of the outer rectrix has the basal half rufous and the terminal half white with black bars; the subterminal black bands on the rest of the rectrices are nearly as narrow as in *cinnamomina*. All specimens examined from Chile, both male and female (with one exception), show more or less rufous on the crown; some with a small but well defined crown patch and others with merely a trace. The single exception (male), which shows no trace of rufous on the crown, agrees with the others in the extent of the spotting on the under parts and barring on the upper parts.

***Cerchneis sparveria fernandensis* Chapman.**

Cerchneis sparverius fernandensis Chap., Bull. Am. Mus. Nat. Hist. N. Y., XXXIV, 1915, p. 379.

Type locality: Masatierra I., Juan Fernandez Islands (off Chile).

Characters: Nearest to *C. s. cinnamomina*, but very different from any South American race. From *cinnamomina* it differs in being much more deeply colored and the under parts more heavily and extensively marked with black; breast more ochraceous rufous; upper parts much darker, approaching rufous chestnut; ventral region and under tail coverts clear buff; tips of central rectrices largely rufous, the others white with more or less rufous; tail band averaging about 13 mm.; outer webs of primaries without white spots or with only a trace on the third.

Wing, 189; tail, 134; tarsus, 33 mm.

Adult female differs from *cinnamomina* in its darker upper parts; under parts strongly washed with deep rufous ochraceous and with darker brown markings.

Wing, 200; tail, 135; tarsus, 36 mm.

Comparative differences: Readily distinguished from other races by its deeply colored and heavily marked (almost mottled) under parts.

Specimens examined: Juan Fernandez Islands — Masatierra I., 3 ♂, 3 ♀.

***Cerchneis sparveria australis* Ridg.**

Falco gracilis Swains., (not of Lesson) Anim. in Menag., I, 1837, p. 281.

Falco sparverius var. *australis* * Ridg., Proc. Acad. Nat. Sci. Phila. 1870, p. 149.

Type locality: Province of Bahia, Brazil.

Range: Brazil, ranging northward nearly or quite to the Amazon River and Pernambuco (and Ceara?); intergrading with *cinnamomina* in extreme southern Brazil (Rio Grande do Sul), Paraguay, and north-eastern Argentina, and probably with *peruviana* on the eastern slope of the Andes in Bolivia and eastern Peru.

Characters: Adult male. General coloration and black spotting of the under parts resembling *cinnamomina*, but under parts averaging slightly more whitish and size smaller; inner web of outer rectrix normally black and white without rufous; subterminal black band on rectrices comparatively broad, averaging (in 20 males from Matto Grosso and Bahia) 22 mm.; white spots on outer webs of outer primaries as in *cinnamomina*.

Wing, 175 to 185, average 180; tail, 122 to 133, average 127 mm.

Adult female. Similar to *cinnamomina*, but smaller and black bars on rectrices broader and more complete.

Wing, 182 to 195, average 186; tail, 123 to 132; average, 129 mm.

Comparative differences: Adult male. Differs from *C. s. cinnamomina* in its smaller size; the tips of the rectrices normally white or whitish (except the central pair which are usually grayish); subterminal black band on rectrices broader (usually 20 mm. or more); inner web of outer rectrix normally barred with black and white, without rufous; under parts averaging whiter; tail relatively and actually shorter.

Female differs from *cinnamomina* in its average smaller size and in having the black bars on the rectrices wider and more complete, and subterminal band wider.

Male differs from *C. s. peruviana* in more whitish under parts; breast paler (less tinged with ochraceous cinnamon rufous); sides and flanks whiter (not noticeably tinged with pale ochraceous cinnamon); inner web of outer rectrix normally black and white (not rufous as in *peruviana*); crown averaging paler. Female differs from *peruviana* in relatively shorter tail and average paler brown markings on under parts.

* Alternative name for *F. gracilis* Swainson (which was pre-occupied) and therefore the type locality is Bahia, as given by Swainson. The fact that Ridgway later (in Baird, Brewer and Ridgway, Hist. N. A. Bds, III, 1874, p. 166) described a bird from Parana, Paraguay, as *australis*, and that a specimen in the U. S. National Museum collection (No. 20937) is labeled, "Type of *Tinnunculus sparverius* var. *australis* Ridgw.," has no bearing on the case and does not change the original type locality. Furthermore the Parana specimen is apparently an intergrade between *cinnamomina* and *australis*, and in my opinion approaches somewhat nearer the former than the latter.

Specimens examined: Brazil—Chapada, Matto Grosso, 18 ♂, 22 ♀; Sao Marcello, Rio Preto, Bahia, 2 ♂; Pernambuco, 2 ♂; ?Quixada,* Ceara, 1 ♂.

Paraguay — Rio Parana', 3 ♂, † (2 intergrades, not typical).

Argentina — Conchitas, Buenos Ayres, 2 ♂ (intergrades).

Remarks: Out of twenty males from the Provinces of Matto Grosso and Bahia, Brazil, sixteen have the inner web of the outer rectrix black and white, three have it part rufous and part white and only one has the whole web (except the black subterminal band and white tip) rufous. † One specimen from Chapada, Matto Grosso, has the tip of several of the rectrices largely rufous as in *cinnamomina*, but the outer rectrix is part rufous and part white and the wing measures 182 mm.

Fourteen of the twenty males have the crown plain, with no trace of rufous; five show a trace of rufous; and one has a well marked rufous crown patch; the last can be matched in the banding of the upper parts and spotting of the under parts by specimens having no rufous on the crown.

Two males from Pernambuco, Brazil, may be referred to *australis*, and the locality probably represents about the northern limits of its range. In one the wing measures 173 and in the other 180 mm. Both specimens have the under parts well spotted and one has the inner web of the outer rectrix black and white; in the other the outer rectrices have been lost. One has the crown immaculate, but the other shows a well marked rufous crown patch.

Two males from Conchitas, Buenos Ayres, Argentina, are apparently intergrades between this form and *cinnamomina*, although a good series from northeastern Argentina might prove them to be subspecifically distinct from either. They are large (wing, 190 and 195) and, while the

* The single male specimen which I have seen from Quixada, Ceara, Brazil, is provisionally referred to this race. It is evidently not adult and the general coloration of the upper parts is decidedly paler than in either *australis* or *distincta*. The markings of the under parts approach *australis* in being spotted; but the black spots are smaller, largely linear in shape and more scattered. The inner web of the outer rectrix is pale rufous, with the usual subterminal black bar and white tip, in this approaching *distincta*. The gray crown approaches that of *distincta* in color and there is a large rufous crown patch. The distal white patches on the inner webs of the outer primaries are decidedly larger and extend much farther towards the end of the feather than in any specimen of *australis* or *distincta* seen by me. It may prove to be an immature intergrade between *australis* and *distincta* or *isabellina*, but it is not unlikely that it represents a pale local race peculiar to those arid regions. If this should prove to be the case, I propose for the Ceara bird the name, *Cerchneis sparveria cearæ* (Type from Quixada, Ceara, Brazil. Male, No. 47593, Field Museum of Natural History. Collected by R. H. Becker, June 19, 1913. Wing, 170; tail, 126; tarsus, 34 mm.).

† See remarks concerning these specimens p. 319.

‡ This is a young male, the size being very small (wing, 167; tail, 110); plumbeous wing coverts with rusty tips; entire back barred, etc. It is not included in the average measurements of the species.

narrow subterminal black band on the tail approaches *cinnamomina*, the tips of the feathers are white (the central ones grayish), without rufous; the inner web of the outer rectrix in both specimens is black and white, but in one it shows some rufous on the basal portion. Three males and one female from the Paraná region, Paraguay (Coll. U. S. National Museum), may be briefly described as follows:

Male, No. 20937, U. S. Nat. Mus., labeled "Exploration of the Paraná, Sept., 1860. Type of *Tinnunculus sparverius* var. *australis* Ridgw."

Crown with small patch of rufous; under parts nearly white (with no noticeable wash of ochraceous rufous on breast), marked with numerous comparatively small linear spots of black; tips of rectrices largely worn off, but three outer ones showing more or less white; greatest width of subterminal black band on any of the rectrices 17 mm.; inner web of outer rectrix on one side of the tail rufous, with one subterminal black band; the outer rectrix on the opposite side with basal portion rufous, the terminal third white, with two black bands; wing, 193; tail, 133 mm. This specimen is apparently an intergrade between *cinnamomina* and *australis*, more nearly approaching the former.

Male, No. 119802, agrees in coloration and marking with specimens from Bahia, but the size is large (wing, 195; tail, 137), no rufous on the tips of rectrices; inner web of outer rectrix black and white; width of tail band on central rectrices, 18 mm.

Male, No. 119801, agrees very well in size and coloration with some Bahia specimens (wing, 184; tail, 128); tips of some of the rectrices with a tinge of rufous; tail band 18 mm.; inner web of outer rectrix black and white, but showing a trace of rufous along the shaft on the basal portion.

Female, No. 20936, approaches some specimens from Chile in size and coloration (wing, 196; tail, 143).

***Cerchneis sparveria peruviana* Cory.**

Cerchneis sparverius peruviana Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 296.

Type locality: Chachapoyas, Peru; alt. about 7700 ft.

Range: Peru and southern Ecuador, probably intergrading with *C. s. cinnamomina* in southern Peru; with *australis* in Bolivia and possibly with *æquatorialis* in southern Ecuador.

Characters: Male. Breast pale ochraceous cinnamon rufous, somewhat paler on sides of body and shading into cinnamon buff on abdomen; buffy white on thighs and under tail coverts; sides of body and flanks with large rounded black spots and often a few linear black

spots on the abdomen largely confined to the middle of the feathers; tail feathers tipped with white, more or less mixed with rufous (in some specimens the rufous color predominating); inner web of outer rectrix normally rufous, with one subterminal black bar, the tip white; outer web of third outer primary with three white spots; the second with one small narrow streak or only a slight trace; tail band about 19 mm.

Wing, 175 to 183, average, 181; tail, 129 to 138, average 134 mm.

Female. Similar to female of *australis*, but upper parts and upper surface of tail averaging slightly more deeply colored and outer tail feathers more often nearly immaculate.

Wing, 180 to 193, average, 186; tail, 131 to 140, average, 135 mm.

Comparative differences: Male differs from *C. s. cinnamomina* in smaller size; breast noticeably more ochraceous cinnamon rufous; sides and flanks tinged with ochraceous cinnamon (not white or almost white as in *cinnamomina*); subterminal black band on tail broader.

Male differs from *C. s. australis* in deeper colored under parts; more ochraceous cinnamon rufous on breast; sides and flanks distinctly washed with pale ochraceous cinnamon (not white as in *australis*); inner web of outer rectrix normally rufous (not black and white as in *australis*); crown darker and tail longer. Female differs from *australis* in relatively and actually shorter tail; and somewhat paler brown markings on the under parts.

Male differs from *C. s. æquatorialis* in smaller size and much less deeply colored under parts. Differs from *C. s. caucae*, to which it is very closely related apparently, only in the paler coloration of the breast which in *caucae* more nearly approaches *C. s. ochracea*; also less pronounced white spots on outer web of second and third primaries. From *andina* and *intermedia* it may be distinguished at a glance by the spotted and much paler under parts and other characters.

Specimens examined: Peru — Chachapoyas, 1 ♂; Macate, 2 ♂, 3 ♀; Menocucho, 1 ♂; Mirador, 1 ♂, 1 ♀; Hda. Limon, near Balsas, 1 ♂; Cajamarca, 1 ♀; Lima, 1 ♂.

Ecuador — Huigra, 1 ♂; Junction of Chanchan and Chiguancay Rivers, 1 ♂.

Bolivia — Yungas, 1 ♂ (not typical).

Remarks: Of seven males from Peru, six have the inner web of the outer rectrix rufous, with subterminal band of black and the tip white, and one (from Macate) has it black and white. All have the tips of the rectrices more or less rufous, and in two the rufous color predominates, resembling *cinnamomina* in this character; the subterminal black band on the rectrices varies in width from 17 to 20 mm. in different specimens. None of the males show any trace of rufous on the crown,

but two of the females show a slight trace and three have a small but well marked rufous crown patch; all of the males are more or less spotted on the under parts.

***Cerchneis sparveria caucæ* Chapman.**

Cerchneis sparverius caucæ Chap., Bull. Am. Mus. Nat. Hist. N. Y., XXXIV, 1915, p. 375.

Type locality: La Manuelita (alt. 3500 ft.), near Palmira, Cauca Valley, Colombia.

Range: Western Colombia and western slopes of Central Andes; northwestern Ecuador.

Characters: Adult male. Similar to *C. s. peruviana* in size and general marking, but differs in deeper cinnamon coloration of the breast (approaching that of *ochracea*); outer web of second outer primary usually with two small white spots, the outer web of third with three well marked white spots; distal white patches on inner webs of outer primaries (in specimens examined) not confluent;* length of tail band, 17 to 22 mm.

Wing, 175 to 185; tail, 119 to 132 mm.

Adult female. Similar to the female of *peruviana*, but coloration of upper parts darker and under parts more tinged with buff.

Wing, 183 to 186; tail, 129 to 135 mm.

Comparative differences: This form may be readily distinguished from *C. s. andina*, *C. s. intermedia*, and *C. s. ochracea* by its spotted under parts; from *C. s. peruviana* by the character already given; from *C. s. æquatorialis* by its shorter tail band, shorter tail, and smaller size; and from *cinnamomina* and *australis* by its much more deeply colored under parts and other characters.

Specimens examined: Colombia — La Manuelita (near Palmira), alt. 3500 ft., Cauca Valley, (Type) 1 ♂, 1 ♀; Cali, Cauca, 1 ♂; La Florida, west of Popayan, 1 ♂, 1 ♀; La Tig, Cauca, 1 ♂, 1 ♀; Noamama, Rio San Juan, Cauca, 1 ♀.

Ecuador — Gulea, Prov. Pichincha, 1 ♂ (not typical).

Remarks: The specimen from Gulea, Ecuador, approaches *caucæ*, but is larger and white spots are present on the outer web of the fourth (outer) primary. All Colombian specimens which I have seen have two small white spots or streaks on the outer web of the second (outer) primary and three larger ones on the third; one male has a trace of rufous on the crown, in the rest it is plain; none of them have the distal white patches confluent on any of the outer primaries.

* See remarks concerning this character, p. 313.

***Cerchneis sparveria æquatorialis* (Mearns).**

Falco sparverius æquatorialis Mearns, Auk, 1892, p. 269.

Type locality: Ecuador (Guayaquil?; exact region unknown).

Range: Ecuador.

Characters: Male (Type, No. 101309, U. S. National Museum). General coloration and spotting of under parts approaching *caucæ*, but size larger; outer web of second outer primary immaculate; third with two small narrow white spots; tail band wide; tail long; inner web of outer rectrix black and white, without rufous.

Wing, 192; tail, 141; width of tail band, 26 mm.

Female (No. 67349, U. S. National Museum). Wing, 195; tail, 139 mm.

Comparative differences: Differs from *C. s. andina* in the heavy spotting of the under parts and somewhat paler coloration; in the much wider tail band; and in the absence of the pronounced white markings on outer webs of several outer primaries. From *caucæ* and *peruviana* it differs by its larger size; longer and much wider tail; and also from the latter in the more deeply colored under parts. From *cinnamomina* it differs in its very much wider tail band and more deeply colored under parts; and from *C. s. ochracea* in its somewhat larger size; longer tail; and strongly spotted under parts.

Remarks: The type locality of this subspecies may or may not have been Guayaquil, Ecuador,* as given by Mearns; and it is by no means certain that the female came from the same locality as the male, or in fact is the same subspecies. The male, however, having been first described, must be accepted as the type of *C. s. æquatorialis*. While it is probable that the type specimen was not killed in the vicinity of Guayaquil, until specimens have been secured from this locality for comparison we have no grounds for the positive assertion that it was not, as it differs from any other specimen which I have seen from Ecuador or elsewhere. The type specimen is apparently not fully adult and is intermediate in size between the large deeply colored and comparatively unspotted birds from Quito and Mt. Chimborazo (*C. s. andina*) and the strongly spotted and smaller birds from lower altitudes (*C. s. caucæ* & *C. s. peruviana*). It is, however, quite similar to some of the latter in coloration, and not greatly different in size (except for its longer tail) from a specimen which is apparently *C. s. caucæ* from

* Dr. C. W. Richmond writes me as follows: "I find that Dr. Jones received the birds from a Mr. Cartright of Guayaquil, who was constantly receiving them from the interior of Ecuador. So it appears that the type localities of the *Falco æquatorialis*, the *Columba guayaquilensis* and the *Xiphocolaptes saturatus* described from this collection will always be in doubt." (See also Chapman, Bull. Am. Mus. Nat. Hist., N. Y., XXXIV, 1915, p. 377.)

Gulea, Province of Pichincha, but it differs from both forms in its broad tail band (which measures 26 mm.) and absence of the white markings on the second (outer) primary which is strongly marked in *C. s. andina* and usually present, but in a very much less degree, in *caucæ*. If we assume this puzzling specimen to be an intergrade, we are confronted by a problem to determine to which race it should be referred on account of the wide tail band and plain outer webs of the second (outer) primaries, characters which are not found in either of the other Ecuadorian races. Even should the spotting of the under parts ultimately disappear with maturity (which so far as we know in strongly spotted birds is questionable), it would be difficult to identify it with any known form on account of the other differences. I have therefore provisionally considered *C. s. æquatorialis* to represent a distinct subspecies from an unknown locality, until a much larger series of specimens from Ecuador is available for comparison and the relationship of forms inhabiting that region can be more satisfactorily determined.

***Cerchneis sparveria andina* subsp. nov.**

Type from Quito (alt. about 9300 ft.), Ecuador. Male, No. 123965, American Museum of Natural History, New York. Collected by Wm. B. Richardson, May 21, 1913.

Range: Ecuador, probably largely or wholly confined to altitudes ranging from 5000 to 13000 feet.

Characters: Male. Similar to *C. s. ochracea* in the deeply colored ochraceous cinnamon under parts, but differs in somewhat larger size; much longer tail; much narrower tail band; and more pronounced and more numerous white spots on the outer webs of the outer primaries. Under parts deep ochraceous cinnamon, with a few, mostly small and narrow, black spots on the sides of the abdomen (other specimens have the black spots on the under parts practically absent or when present they are small, linear in shape and usually confined to the sides of the body); outer webs of the second, third, fourth, and fifth outer primaries with large white spots (the second usually with three large exposed spots, and a fourth concealed by the coverts; the third with four, the fourth with two and three, and in typical specimens from high altitudes the fifth and often the sixth with at least one); greatest breadth of the black subterminal band on the tail, measured at the shaft of the feather, 18 mm.; inner web of outer rectrix rufous, with a subterminal black band and the tip white; under wing coverts white, spotted with black, and the outer portion strongly tinged with buff.

Wing, 202; tail, 144; tarsus, 37.5 mm.

Average measurements of four males from Quito and Mt. Chimborazo: Wing, 196 to 205, average 200; tail, 140 to 144, average 141; width of tail band, 16 to 20, average 18 mm. Measurements of three females: Wing, 194 to 208; tail, 143 to 148 mm.

Comparative differences. The male of this large, deeply colored race may be distinguished at a glance from all other known American forms (except *C. s. ochracea* and *C. s. intermedia*) by its deep ochraceous cinnamon and usually nearly immaculate under parts; its large size; long tail; and noticeably white blotches or spots on the outer webs of several (including the second) of the outer primaries. From *C. s. ochracea* it may be distinguished by its much narrower tail band, which in *ochracea* averages about 29 mm.; larger size; and the large white spots on the outer web of the second (outer) primary and several of the others. From *C. s. intermedia* it may be separated by its much longer tail; average larger size; somewhat narrower tail band; buffy tinge on outer under wing coverts; and the larger and more numerous white spots on the second, third and fourth outer primaries. From the type specimen of *C. s. æquatorialis* it differs in its much more deeply colored under parts; absence of numerous, large, rounded black spots; much narrower tail band; somewhat larger size, and the presence of several large white spots on the outer webs of several of the outer primaries. The female averages larger in size, the breast is rather more tawny, and the buffy spots on the second and third (outer) primaries are larger and more numerous than in allied races.

Specimens examined: Ecuador — Mt. Chimborazo, 3 ♂; Quito, 1 ♂, 1 ♀; Riobamba, 1 ♂; "Ecuador," 1 ♂; Ambato, 2 ♀; Chuncha, 1 ♀; Cumbaga, 1 ♀.

Remarks: Two males have the inner web of the outer rectrix rufous, with the usual subterminal band of black and the tip white. Two others have the greater portion of the web rufous, but have two black bands on the terminal part, the space between the bands being white. None of them show any rufous on the crown, and in four out of the five males the tips of the rectrices are more or less mixed with rufous. None of the females show any rufous on the crown. The specimen from Riobamba, which I have provisionally referred to this race, is not typical. It is smaller (wing, 185; tail, 136); has less white marking on the outer web of the third and fourth outer primaries and some white mixed with the rufous and a second black band on the terminal part of the outer rectrix. Another specimen from Huigra, Chimborazo (alt. about 5000 ft.), is apparently an intergrade, being smaller (wing, 187; tail, 130); the under parts paler; tail band 24; and

spots on outer webs of primaries fewer and narrower, and the outer rectrix black and white.

Cerchneis sparveria intermedia subsp. nov.

Type from Villavicencio (alt. 1600 ft.), base of eastern Andes, Colombia. Adult male, No. 121449, American Museum of Natural History, New York. Collected by Chapman, Cherrie, *et al.*, March 14, 1913.

Range: Andes region of Colombia, from Cundinamarca and Bogota southward.

Characters: Adult male. Similar to *C. s. ochracea* in its deeply colored ochraceous cinnamon and practically unspotted under parts, but differs in averaging somewhat larger; black subterminal band on the rectrices much shorter, and more pronounced white markings on the outer webs of second and third (outer) primaries. The type specimen has the inner web of outer rectrix barred with black and white, with a tinge of rufous near the shaft on the basal part.

Male: Wing, 189; tail, 127; tarsus, 37; greatest breadth of black tail band (measured at shaft of feather), 20 mm. Average measurements of seven males from Villavicencio, Honda, Magdalena River, and Bogota: Wing, 177 to 189, average 185; tail, 124 to 132, average 129 mm. Seven males from Cundinamarca, which are apparently this form, average decidedly larger: Wing, 188 to 199, but the tail measurements (126 to 132) and the subterminal band on the tail (18 to 22) average about the same.

Female: Wing, 194; tail, 139 mm.

Comparative differences: The practically unspotted and deeply colored under parts will readily distinguish males of this race from other South American forms except *C. s. ochracea* and *C. s. andina*. From the former it differs in averaging somewhat larger; in the much narrower black tail band (varying from 18 to 22 mm.; while in *ochracea* it varies from 28 to 34, averaging about 29); and in the much more pronounced white markings on the outer webs of the second and third (outer) primaries, the second having two spots or streaks and the third three well marked spots (in *ochracea* the second is plain or with one small spot, and on the third the three spots are small and narrow). From *C. s. andina* it differs in averaging smaller in size; much shorter tail; somewhat broader tail band; much smaller and less numerous white spots on the outer webs of the outer primaries (in *andina* the white spots are much larger, and are present on the fourth, fifth, and often the sixth outer primary, as well as the second and third), and in purer white under wing coverts.

Specimens examined: Colombia — Cundinamarca, 7 ♂, 4 ♀; Villavicencio, 1 ♂; Honda, Magdalena River, 4 ♂, 1 ♀; Bogota, 2 ♂, 3 ♀; Rio Toche, Tolima, 1 ♀; Andalucia, eastern Andes, 1 ♂, 2 ♀.

Remarks: All the males which I have seen have two white spots or streaks on the outer web of the second (outer) primary, and, with one exception, three well marked spots on the third. Twelve males have the crown plain and only two show a trace of rufous. The coloration of the inner web of the outer rectrix is very variable. Five males have it rufous, with the usual subterminal black band and white tip; four have it part rufous and part white, with two black bands; and three have it alternately banded with black and white, without rufous.

***Cerchneis sparveria ochracea* Cory.**

Cerchneis sparverius ochracea Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 298.

Type locality: Colon (alt. about 2300 ft.), Tachira, western Venezuela.

Range: Western Venezuela and northeastern Colombian region north and east of Cundinamarca; probably intergrading with *intermedia* in the south and *isabellina* or *distincta* in eastern Venezuela.

Characters: Adult male. Greater portion of under parts ochraceous rufous cinnamon or ochraceous cinnamon, becoming ochraceous buff on the thighs and pale ochraceous buff on the under tail coverts; black spots on under parts confined to sides of body and nearly or quite concealed when the wing is closed; crown dark slaty gray, darker than in *brevipennis* and about the same as *cauce* and *peruviana*; outer web of second outer primary without white spots or occasionally with a slight trace; outer web of third outer primary with from one to three small spots or short narrow streaks; inner web of outer rectrix (in type) rufous, with one subterminal black band of black, and grayish white tip.

Male: Wing (of type), 185;* tail, 133; tarsus, 34; tail band, 33 mm. Average of nine males from Merida and Colon, Tachira, Venezuela, and Paramo de Tama and Andalucia, Colombia: Wing, 180 to 185, average 183; tail, 127 to 132, average 130; length of subterminal black band on the tail, 27 to 33, average 29 mm.

Female: Wing, 191 to 195, average 193; tail, 135 to 139, average 136 mm.

Distinguishing characters: This race, on account of the deeply colored and practically unspotted under parts (black spots when pres-

* By mistake the measurement of the wing in the original description of the type was given as 190 mm.

ent being nearly or quite concealed by the closed wing), needs comparison with but three other forms; *i.e.*, *intermedia*, *andina*, and *perplexa*. From *intermedia* it differs in its much longer tail band, and difference in white spotting of the outer webs of the second and third outer primaries. From *andina* it may be distinguished by its smaller size; shorter tail; much longer tail band and the absence of large white spots on the outer webs of several of the outer primaries, and from *perplexa* by its much larger size and more rufous (less chestnut) upper parts, especially rump and upper surface of tail. It may be added, that the much darker and very differently colored under parts will at once distinguish it from *isabellina* and *distincta*.

Specimens examined: Venezuela — Colon (alt. about 2300 ft.), Tachira, 1 ♂, 1 ♀; near Merida (alt. about 5300 ft.), 7 ♂, 2 ♀.

Colombia — Paramõ de Tama (alt. about 7000 ft.), near Venezuelan line, 1 ♂, 1 ♀.

Remarks: Three males have the crown plain, without rufous; two show a slight trace of rufous; three show a small crown patch and one (from Paramõ de Tama) has a well marked rufous crown patch. One specimen has a small white spot on the outer web of the second outer primary; one shows a trace, and on the others the outer web of the feather is plain. All of the males have from one to three small spots or streaks on the outer web of the third outer primary, but they are small, narrow, and inconspicuous. Males from Colon, Tachira, and Paramõ de Tama, have the tail band very wide, measuring about 33 mm. In the specimen from Merida it varies from 27 to 30, the majority measuring 28 to 29 mm. The coloration of the inner web of the outer rectrix is very variable. In three specimens it is black and white without rufous; three specimens have it part white and part rufous, and three have it rufous with one subterminal black band and white tip.

***Cerchneis sparveria perplexa* subsp. nov.**

Emerillon de Cayenne, Buff., Pl. Enl., I, 1770, pl. 444.

Type from Lower Essequibo River, British Guiana. Adult male, No. 47651, Field Museum of Natural History. From J. Rodway.

Range: Extent of range unknown, probably low country from British Guiana, eastward at least to Cayenne.

Characters: Adult male. Size small; general under parts deeply colored, approaching that of *ochracea*, but back more rufous chestnut; rump and upper surface of tail distinctly tinged with chestnut; crown plumbeous gray, somewhat more plumbeous than in *isabellina*; primaries and secondaries tipped with whitish; inner web of outer rectrix

barred with black and white; outer web of second (outer) primary with only a slight indication of a white spot on the exposed portion near the base, the third the same, but the spot somewhat more exposed; length of black band on the central rectrices 23 mm.

Wing, 169; tail, 120; tarsus, 31 mm.

Female: Wing, 182; tail, 126 mm.

Specimens examined: British Guiana—Essequibo River, 1 ♂, 1 ♀.

Comparative differences: Compared with other races having deeply colored unspotted under parts, *C. s. perplexa* differs from *andina* and *intermedia* in its much smaller size; absence of pronounced white spots on the outer webs of the second and third (outer) primaries, etc., etc. From *ochracea* it differs in its smaller size, shorter tail band, etc. It somewhat resembles *C. s. margaritensis*, but the under parts are more deeply colored; the upper parts more rufous chestnut; and it lacks the well marked white spots on the outer webs of the second and third (outer) primaries. From *C. s. isabellina* it may be distinguished at a glance by its deeply colored under parts.

Remarks: This strongly colored race probably ranges so far east as Cayenne, as it agrees very well with Buffon's colored plate, illustrating the Emerillon de Cayenne (*l. c.*). Bonyan* also refers to the Cayenne bird as the "Chestnut-bellied Falcon." That the deeply colored under parts in this bird is not due to age may be assumed from the fact that fully adult males of *C. s. distincta* (which approaches very closely in coloration of the under parts to *C. s. isabellina*) have the under parts very nearly as pale as in immature specimens.

Cerchneis sparveria isabellina (Swains.).

Falco isabellina Swains., Anim. in Menag., I, 1837, p. 281.

Type locality: Demerara, British Guiana.

Range: British Guiana (limits of range unknown).

Characters: Under parts unspotted or with a few spots on the flanks concealed by the wing; breast and upper abdomen washed with light pinkish cinnamon or pale isabella buff; lower abdomen, thighs, and under tail coverts almost white; outer web of second (outer) primary plain or with a faint trace of a small white spot; outer web of third with two small white spots or a narrow white or whitish streak; inner web of outer rectrix normally rufous† with one subterminal black band and the tip white.

*Proc. Zool. Soc. Lond., 1851, p. 60.

† The specimen in the National Museum collection has the greater portion of the inner web rufous, with two black bands near the end separated by a whitish space.

Wing (of the single specimen examined), 166; tail (badly worn), 115; tail band, 24 mm.

Distinguishing characters: The very pale and unspotted under parts of *C. s. isabellina* will at once distinguish it from other forms, with the exception of *C. s. distincta* from which it apparently differs* in having the crown darker (less ashy); the wing and tail somewhat shorter; and in the white marking of the inner webs of the outer primaries. In *isabellina* (and in most other races) the inner webs of the outer primaries have seven or eight white bars, the dark bars which separate them reaching nearly or quite to the edge of the web on the greater portion, and on some of the feathers the two distal white patches often being confluent. In *distincta*, however, the greater portion of the inner web is white, the dark bars being much shorter and more irregular, often (especially on the basal half of the feather) not extending beyond the middle of the web so that the white areas are correspondingly increased. From *C. s. margaritensis* it may be separated by its paler under parts (less distinctly tinged with ochraceous cinnamon); paler abdomen and flanks; and the absence of distinct white spots on the outer web of the second outer primary.

Specimens examined: British Guiana, 1 ♂ (U. S. Nat. Mus., No. 90160).

Remarks: Judging from published descriptions and the very few specimens I have seen from British Guiana, I am forced to believe that two small forms of *Cerchneis* inhabit that region: one (*isabellina*) a pale form which occurs on the higher savanas of the interior, and the other (*perplexa*) a dark form probably inhabiting the low country bordering the rivers and in the valleys nearer the coast. Swainson's original description of the type (*l. c.*) gives the "breast and body beneath, isabella, unspotted." Wing, 6 3/10 in. and tail 5 in. Penard and Penard (Vogels von Guyana, I, 1908, p. 437) describe *C. s. isabellina* as having the throat white, passing into light brown or yellowish white on the breast; wing 175 mm. Sharpe, who had access to Swainson's type and other specimens from British Guiana (obtained by Schomburgk and preserved in the British Museum), gives the coloration of the under parts of the body as "pale fawn shading into buffy white on the flanks and thighs" (Cat. Bds. Brit. Mus., I, 1874, p. 441). We must, therefore, assume that the bird described as *isabellina* by Swainson is a pale form closely approaching *distincta* in the coloration of the under parts.

A specimen in the collection of the United States National Museum

* The single specimen of *isabellina* I have seen from British Guiana is faded and worn and the measurements evidently below the average. A good series may prove the supposed characters separating it from *C. s. distincta* to be inconstant.

(No. 90160), originally in the collection of Dr. P. L. Sclater, and taken in British Guiana by Mr. E. F. im Thurm, agrees very well with the above descriptions in size and pale coloration of the under parts and appears to represent typical *C. s. isabellina* Swainson. It is very likely that the specimen in question came from the high savanas of the interior, probably in the vicinity of Roraima.*

Two specimens from eastern Venezuela, one from Maripa, Caura River, and the other from San Antonio, Burmudez, are puzzling and cannot be readily referred to any described form. Both have the breast decidedly more deeply colored than in *distincta* or *isabellina*, and paler than in *ochracea* or *perplexa*, approaching *margaritensis* in the coloration of the under parts; but the paler gray crown is nearer *distincta*.

The San Antonio bird (wing, 177; tail, 126) has a wide tail band, approaching that of *ochracea*, but in the male from Maripa, the black tail band is much narrower. It is not unlikely that they may prove to be intergrades between *ochracea* and *isabellina*, but more specimens from these localities are needed to determine their relationship.

***Cerchneis sparveria distincta* Cory.**

Cerchneis sparverius distincta Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 297.

Type locality: Boa Vista, Rio Branco, Amazonas, northern Brazil.

Range: Rio Branco region, Amazonas, northern Brazil (limits of range unknown).

Characters: Back ochraceous cinnamon rufous; crown ashy gray and without noticeable dark shaft streaks; chest washed with pale rufous cinnamon (approaching ochraceous tawny, with a tinge of rufous, and palest of the races except *isabellina*), becoming whitish on the abdomen and buffy white on the flanks and under tail coverts; under parts unspotted; outer web of outer rectrix white, with occasionally narrow black streaks bordering the shaft; inner web of outer rectrix largely rufous, with one black subterminal band, the tip white; tips of all except the outer rectrices white, in the middle bordered with more or less rufous; greater portion of the inner web of the outer primaries white, the dark bars or patches being much shorter and more irregular than in allied forms, often (especially on the basal half of the feathers) not extending beyond the middle of the web, the white areas being correspondingly increased; outer web of second (outer) primary plain or with a trace of one small white spot; outer web of third with two (rarely three) small white spots or narrow streaks.

* See Salvin, *Ibis*, 1885, p. 196; *ib.*, 1886, p. 76.

Male: Wing, 182; tail, 130; tarsus, 33 mm. Measurements of seven males: Wing, 174 to 183, average 179; tail, 127 to 131, average 129; tail band, 24 to 28, average about 26 mm.

Female: Wing, 178 to 185, average 183; tail, 131 mm.

Distinguishing characters: Differs from *C. s. isabellina** in the paler (more ashy gray) crown; average longer wings and tail, and much more white on inner webs of primaries. It is separated from *C. s. margaritensis* by its decidedly paler under parts; paler crown; more white on inner webs of primaries; difference in color of inner webs of outer rectrices, and somewhat longer wings and tail. It may be distinguished at a glance from *C. s. ochracea* by its paler under parts, and much narrower tail band; from *C. s. australis* by its unspotted under parts and other characters.

Specimens examined: Brazil — Boa Vista, Rio Branco, Amazonas, 5 ♂, 1 ♀; Base of Serra da Lua Mts., near Boa Vista, 2 ♂, 1 ♀.

Remarks: Four of the males have the crown plain; three show a trace of rufous; one female has the plain, gray crown, the others show a trace of rufous; all of the males have the inner web of the outer rectrix rufous, with one subterminal black band and the tip white.

***Cerchneis sparveria margaritensis* Cory.**

Cerchneis sparverius margaritensis Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 297.

Type locality: Margarita Island, off Venezuela.

Range: Margarita Island (and possibly northeastern Venezuela).

Characters: Breast and more or less of abdomen ochraceous cinnamon (much paler than in *ochracea* or *perplexa*, but decidedly darker than in *distincta* or *isabellina*), becoming much paler on lower abdomen and flanks; under parts without black spots, or with a few on the sides which are concealed when the wing is closed; back vinaceous cinnamon rufous, approaching in color that of *C. s. brevipennis*; inner web of outer rectrix dull white, with several black bands; crown approaching deep neutral gray (Ridgway), but slightly paler; outer web of second (outer) primary with two white spots of medium size; the third with three white spots sometimes nearly confluent in the form of a narrow streak.

Male: Wing, 170 to 177, average 175; tail, 120 to 129, average 125; tail band, 23 to 28, average about 26 mm.

Female: Wing, 178 to 184, average 181; tail, 129 to 131 mm.

* Judging from the single specimen of *C. s. isabellina* from British Guiana seen by me, whether or not these differences are constant can only be determined by comparison with a good series from that region.

Distinguishing characters: *C. s. margaritensis* may be distinguished from *C. s. isabellina* by its much darker under parts and marking of the outer rectrices. From *C. s. distincta* it differs by its much darker crown; darker under parts and differently colored outer rectrices. From *C. s. ochracea* it may be separated by its much paler under parts and somewhat narrower tail band; from *C. s. brevipennis* by its larger size and more immaculate under wing covers, etc.; and from *perplexa* by its somewhat paler under parts, less chestnut rufous upper parts, and well marked white spots on the outer webs of the second and third (outer) primaries.

Specimens examined: Margarita Island, 4 ♂, 2 ♀.

Remarks: All of the males have the crown plain, without rufous and the inner web of the outer rectrix black and white. One female has a small rufous crown patch.

***Cerchneis sparveria brevipennis* (Berlep.).**

Tinnunculus sparverius brevipennis Berlep., J.f.O., 1892, p. 91.

Type locality: Curacao Island (off Venezuela).

Range: Curacao, Aruba and Bonaire Islands.

Characters: Similar to *C. s. margaritensis* in general coloration, but with sides of the abdomen more or less spotted with black (in very young birds the whole abdomen is sometime spotted) and with numerous black markings on the under wing coverts; tail band about 25 mm.; inner web of outer rectrix normally black and white; white spots on outer webs of outer primaries as in *margaritensis*.

Adult male: Wing, 163 to 169, average 167; tail, 120 to 128, average 125 mm.

Female: Wing, 169 to 178, average 174; tail, 129 to 134, average about 132 mm.

Young male: Under parts heavily spotted with black, spots on the sides forming a broad band on the feathers and extending on the flanks; gray feathers of the wing coverts edged with pale rusty; some of the feathers on base of crown edged with rufous; back with broad black bands on the feathers extending nearly to the nape; inner web of outer rectrix as in adult, except tips, this and other rectrices washed with rufous; white spots on outer webs of outer primaries as in the adult. (Young male) Wing, 158; tail, 125 mm.

Distinguishing characters: The short wing combined with the vinaceous cinnamon back will distinguish *C. s. brevipennis* from other races.

Specimens examined: Curacao I., 7 ♂, 5 ♀; Aruba I., 2 ♂, 2 ♀.

Remarks: Two males have a small rufous crown patch; three show a trace of rufous and the rest are plain. Four of the seven females show a little rufous on the crown. Two of the males have the inner web of the outer rectrix with some rufous on the basal portion, but seven have it black and white without rufous. Two very young males have the plumbeous gray feathers of the wings edged with rusty; the back heavily banded with black and the feathers on the posterior portion of the crown distinctly marked with rufous in one and slightly so in the other. Both specimens have the entire abdomen spotted with black,* the inner web of the outer rectrix barred with black and white, and the white tips of the rectrices show a slight wash of rufous.

KEY TO THE SUBSPECIES.

ADULT MALES

Males may be distinguished from females by their plumbeous gray wing coverts and (in South American races) by having but one black bar on the central rectrices, differently marked under parts, etc.

I. Breast and often more or less of under parts strongly ochraceous cinnamon, or cinnamon rufous.

A. Under parts with numerous black spots.

a. Back rufous or cinnamon rufous; black bars variable.

a' Wing more than 186; tail band more than 24 mm.

Wing, about 190; tail, about 140; tail band 26 mm.

C. s. æquatorialis, p. 322.

b' Wing less than 186; tail band less than 24 mm.

Greater portion of under parts deeply colored.

C. s. cuacæ, p. 321.

Under parts much paler; abdomen buffy white or whitish.

C. s. peruviana, p. 319.

b. Back rufous chestnut; black bars large.

Black markings on under parts irregular and conspicuously heavy.

C. s. fernandensis, p. 316.

B. Under parts without black spots or with black spots confined to the sides and largely concealed when the wing is closed.

* This would seemingly indicate that the black spotting on the under parts (in this form at least) is a juvenile character which largely disappears and becomes confined to the sides in the adult. But this is apparently not the case in such races as *C. s. australis*, *C. s. peruviana*, *C. s. cinnamomina*, etc., as no unspotted specimens have ever been recorded and the numerous unquestionably adult specimens which I have examined have a considerable portion of the under parts strongly spotted.

a. Back cinnamon rufous, or chestnut rufous.

a' Wing less than 177 mm.

Black tail band about 23; exposed outer webs of second and third (outer) primaries plain or with a small white spot at the base.

C. s. perplexa, p. 327.

b' Wing more than 177 mm.

Black tail band, about 29 (28 to 34); tail, about 131; outer web of second (outer) primary plain or with one small white spot; spots on outer web of third primary small; outer web of fourth plain.

C. s. ochracea, p. 326.

Black tail band, about 20 (18 to 23); tail, average about 131; white spots on outer web of third (outer) primary larger; the outer web of fourth plain.

C. s. intermedia, p. 325.

Black tail band, about 18 (15 to 21); tail long, 138 to 144; outer webs of second, third, fourth, and fifth (outer) primaries with large white spots.

C. s. andina, p. 323.

b. Back vinaceous cinnamon.

Wing more than 170 mm. *C. s. margaritensis*, p. 331.

Wing less than 170 mm. *C. s. brevipennis*, p. 332.

II. Breast tinged with pale ochraceous cinnamon, pale cinnamon rufous, or breast buffy white or white.

A. Under parts with numerous black spots.

a. Back cinnamon rufous or rufous.

Black tail band narrow (9 to 16); tips of rectrices partly or wholly rufous; wing more than 190; inner web of outer rectrix normally rufous with one black band.

C. s. cinnamomina, p. 315.

Tail band 18 to 22; wing less than 187 (175 to 185), average 181; tail, 122 to 131, average 127; inner web of outer rectrix normally black and white; under parts paler than *peruviana*; sides and flanks whitish.

C. s. australis, p. 316.

Tail band 17 to 22; wing less than 187 (175 to 185), average 181; tail 129 to 138, average 134; under parts usually darker than in *australis*; sides and more or less of flanks buffy; inner web of outer rectrix normally rufous with one black band.

C. s. peruviana, p. 319.

b. Back vinaceous cinnamon.

Wing less than 170; some specimens have exposed spots on sides of abdomen; very young birds are much spotted on the under parts.

C. s. brevipennis, p. 332.

B. Under parts without black spots or with black spots confined to the sides and largely concealed when the wing is closed.

a. Back rufous cinnamon.

Breast pale, only slightly tinged with pale ochraceous cinnamon or isabella buff; dark bars on inner webs of primaries not unusually restricted and white areas not unusually large; inner web of outer rectrix normally rufous.

C. s. isabellina, p. 328.

Breast washed with pale ochraceous cinnamon; greater portion of inner webs of primaries white, many of the dark bars being short and irregular; inner web of outer rectrix rufous.

C. s. distincta, p. 330.

b. Back vinaceous cinnamon.

Breast and more or less of under parts usually strongly tinged with ochraceous cinnamon; wing more than 170; inner webs of outer rectrices normally black and white.

*C. s. margaritensis**, p. 331.

Breast and more or less of under parts usually strongly tinged with ochraceous rufous; wing less than 170; inner web of outer rectrix normally black and white.

C. s. brevipennis, p. 332.

* *C. s. margaritensis* and *C. s. brevipennis* properly belong in Group I, but an exceptionally pale specimen might be looked for here.