

A REVIEW OF THE GENUS *PIAYA* Lesson.

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While rearranging the Cuckoos in the collection of the Academy of Natural Sciences my attention was attracted to the type specimen of *Piaya macroura* Gambel. The apparent omission of this species from Dr. Bowdler Sharpe's *Hand List of Birds* led me to make a critical study of the genus, the results of which are embodied in the present paper.

I am under obligations to the United States National Museum through Dr. Charles W. Richmond, and to the American Museum of Natural History through Mr. Frank M. Chapman, for the loan of large series of specimens of the genus, without which my investigation would not have been possible. The material loaned by these institutions, together with that in the Academy's Museum, numbers 259 specimens distributed as follows: Mexico, 64; Central America, 59; Panama, 13; Colombia, 26; Venezuela, 18; Ecuador, 8; Brazil, 32; Guiana, 6; Bolivia, 2; Peru, 4; Paraguay, 2; Trinidad, 8.

The genus *Piaya* includes two very well-marked species, *P. melanogastra* and *P. rutilus*, and a number of allied geographic races which have generally been combined under the name *P. cayana*.

The first two offer but few difficulties, and it is the *cayana* group that has caused confusion in the nomenclature of the genus. The forms of *Piaya cayana* may be roughly divided into three groups according to the color of the upper surface. In group (1) it is bright ferruginous;¹ (2) bay inclining to chestnut; (3) walnut brown tinged with chestnut. Beginning at the northern part of the range of the genus, we have in western Mexico a large form of the ferruginous group (*mexicana*), while in eastern Mexico, extending throughout Central America and Panama, is a totally different form of the chestnut-backed group (*mehleri*). The individuals are quite uniform over this large area, with the exception of the size of the bill, which is smaller in Mexican and Yucatan birds than in those from Nicaragua and Costa Rica.

In the Cauca river valley of Colombia is a slightly different form (*cauca*), in which the flanks as well as the crissum are black, this

¹ All colors are based on Ridgway's nomenclature of colors.

color encroaching farther upon the gray abdomen than in any other form. In northeastern Colombia (Santa Marta to Bogota) and the western portion of Venezuela is a light bird of the "ferruginous" group (*columbiana*), practically identical with the form of western Mexico except for its much larger bill. Farther east, from the Orinoco valley throughout Guiana, is another of the chestnut-backed forms (*cayana*), similar to that from Central America, while to the southwest is still another (*nigririssa*), ranging over eastern Colombia through Ecuador and Peru. Both of these differ from the Central American bird in dimensions and in the almost total lack of brown on the under surface and the tail which is uniform black, while the Guiana form differs further in having gray under-tail coverts instead of dull black. On the island of Trinidad is a diminutive ferruginous-backed bird (*insulana*), otherwise similar to the Central American form. In southern Brazil, from Bahia and Matto Grosso, is a larger very pale bird (*pallescens*) of the ferruginous type.

In Paraguay, and doubtless in parts of Argentina and southern Brazil, occurs the largest form of all (*macroura*), with a different coloration from any of the more northern races, the back being walnut brown tinged with chestnut. In Bolivia and southern Peru is a smaller race of this same style of bird (*boliviana*), differing further in its gray instead of black under-tail coverts.

Three of the races of *Piaya cayana* seem to have been described by early non-binomial authors. Hernandez's Quapactotl being in all probability the east Mexican bird, while Brisson's *Cuculus cayenensis* is undoubtedly the form from Cayenne and Azara's Tingazu the very large dark bird of Paraguay.

Linnaeus established Brisson's bird in binomial nomenclature as *Coccyzus cayanus* and Gmelin gave the name *Coccyzus ridibundus* to the Quapactotl of Hernandez, quoting the original more or less indefinite description, as was done also by Ray, Buffon and Latham, the last of whom designated it as the Laughing Bird. Later Stephens inadvertently changed Gmelin's name to *rubicundus*, but added nothing to the original diagnosis. This—viz.: "C. fulvus, gula, jugulo, et pectore cinereis, abdomine, femoribus et tectricibus caudae inferioribus nigris. L. 16 ins. Tail half the length of the body. Hab., Nova Hispana"—seems not clearly identifiable, although it is added to the synonymy of *Piaya cayana* by Capt. Shelly without question in Vol. XIX of the British Museum Catalogue of Birds, where all these forms are lumped under the above name.

Vicillot, in 1817, gave the name *macrocerus* collectively to the

P. cayana of Linnæus and allied forms, several of which were described but not named.

Swainson, 1827, named the light-colored western Mexican bird *mexicana*, and 1837 modified Linnæus' name *cayanus* into *cayennensis*, which was the form in which it had been used by Brisson.

Gambel, 1849, described the large Paraguay bird as *Piaya macroura*, but erroneously credited his specimen to Surinam, as pointed out by Cabanis (*Mus. Hein.*, IV, p. 87). Dr. J. A. Allen (*Bull. Amer. Mus. Nat. Hist.*, V, p. 137, 1893) correctly states that Gambel regarded *P. cayana* L. and *P. mexicana* as identical, but his description of *macroura* could never apply to *cayana* as Dr. Allen claims. Gambel states that the crissum is black and the length of tail is 15 inches, while *P. cayana* has a gray crissum and a tail only 9.50 inches in length (Dr. Allen's measurement)!

Bonaparte, 1850, also describes the large Paraguay bird as *P. circe* from a specimen erroneously recorded as from Colombia (error in locality also pointed out by Cabanis. *l.c.*) and describes as new another bird, *P. mehleri*, from Bogota. This name has caused much trouble to subsequent authors. For a time it was used for the small form occurring from southeastern Colombia to Ecuador and Peru. Then Dr. Selater examined the type in the Paris Museum and stated (*P. Z. S.*, 1860, p. 285) that it was identical with the east Mexican and Central American bird, claiming that the type locality must have been wrong. Subsequently Dr. Allen and also Mr. Hartert (*Nov. Zool.*, V, 499) have used the name again for the Ecuador bird, and it so stands in Sharpe's *Hand List*.

The examination of the type ought to settle a question of this kind, and I can see no reason why Dr. Selater's statement should be ignored.

Cabanis' review of the genus (*Mus. Hein.*, IV, p. 82, 1862) is a remarkably accurate piece of work. He describes as new the well-marked forms *pallescens*, *guianensis* and *columbianus*, and clearly diagnoses as distinct *mexicanus* Swainson, *macrourus* Gambel, *nigricrissa* Selater, *cayana* Linn. and *mehleri* Bon. His new species *mesurus*, however, seems not separable from his *columbianus*.

In Dr. J. A. Allen's brief review of the genus (*Bull. Amer. Mus. Nat. Hist.*, V, p. 136, 1893) he falls into several errors, largely through lack of material, having no specimens of the light colored bird of northern Colombia and Venezuela, nor of the very large dark form from Paraguay.

He ignored Cabanis' explanation of the true nature of Gambel's *macroura*, making it a synonym of *cayana* in spite of the discrepancies

in size and color; and then identified the *macroura* of Cabanis with his new race *cabanisi*, a pale bird differing only slightly in measurements from *pallescens* Cab., from which it does not seem separable.

As a matter of fact *macroura* and "*cabanisi*" differ more in color than do *mexicana* and *mehleri*, which Dr. Allen regarded as the most distinct of any of the races.

Dr. Allen used Bonaparte's name *mehleri* for the Ecuador bird, apparently overlooking Selater's statement, but he rightly surmised that the Bolivian birds were separable, though he allied them to the Ecuador form instead of to *macroura*, to which they are closely related. *P. circe* Bon., correctly referred to *macroura* by Cabanis, is doubtfully referred to *mehleri* by Dr. Allen.

Hellmayr (*Nov. Zool.*, XIII, p. 43) describes as new the Trinidad bird, calling it *insulana*, and gives a good résumé of the several forms recognized by him. He here distinguishes *guianensis* from *cayana*, although he later regards them as not separable; he also adopts Dr. Allen's *cabinisii* for the big dark colored *macroura*, apparently overlooking the fact that Dr. Allen's bird, which "differs little in color from *pallescens*," could hardly have the "crissum black."

Von Ihring (*Revista Musco Paulista*, 1904, p. 448) recognizes Allen's error in writing *P. macroura* and *P. cabanisi* and again renames the former var. *guarania*.

Key to the Species and Subspecies.

Pileum gray sharply contrasted with the rest of the upper parts, *melanogastra*.

Pileum uniform with the upper parts or very nearly so.

Size very small; wing 4.12 in.; throat cinnamon rufous, . . . *minuta*.

Size medium or large, wing 5.50-6.80; throat vinaceous.

ferruginous above.

large, tail 11.30-12.70.

tail strongly rufous below, black subterminal bands strongly defined.

bill large, *columbiana*.

bill small, *mexicana*.

tail dull blackish brown below, black subterminal bands not clearly defined, *pallescens*.

small, tail 9.30, *insulana*.

bay above.

tail uniform dull black beneath, no trace of subterminal bands.

crissum gray, *cayana*.

crissum black, *nigrocrissa*.

tail below with rusty on the outer webs at least.

thighs gray, tail 10.50-11, *mehleri*.

thighs black, tail 12, *cauca*.

walnut brown above, tail uniform dull black beneath.

tail 15.10, crissum black, *macroura*.

tail 11.25, crissum gray, *boliviana*.

Piaya melanogastra (Vieillot).

Cuculus melanogaster Vieillot, Nov. Diet., VIII, p. 236, 1823 ['Java,' loc. err. = South America].

Piaya brachyptera Lesson, Traité, p. 140, 1831 [Cayenne].

Melias corallirhynchus Lesson, Rev. Zool., 1840, p. 1 [Hab. ?].

Length of wing, 5.46 inches; tail, 8.85.

Above ferruginous, tail and wings glossed with wine purple, entire pileum, nape and eye region ashy gray, rectrices with white tips and black subterminal bands, remiges with dusky tips, throat and breast cinnamon rufous, rest of under surface dull black; specimens examined from Cayenne; Demarara; Napo River, Ecuador; Amazonia.

The nomenclature of this species is considered under *P. rutila*.

Piaya rutila (Illiger).

Cuculus rutilus Illiger, Abhl. Berl. Akad. Wiss., 1812, p. 224 [Cayenne].

Coccyzus minutus Vieillot, Nov. Diet., VIII, p. 275, 1817 [Cayenne].

Macropus caixana Spix, Av. Bras., I, p. 54, 1824 [Brazil].

Coccyua monachus Lesson, Traité, 1831, p. 142 [Cayenne].

Length of wing, 4.12; tail, 6.15.

Above ferruginous chestnut, tail and wings glossed with wine purple, rectrices with white tips and black subterminal bars, remiges dusky at their tips, throat, breast and cheeks cinnamon rufous, rest of under parts gray, tinged with buff on abdomen and flanks.

Specimens examined from Panama, Colombia, Orinoco, Cayenne, headwaters Huallaga River, Guyaquil.

This bird was first described by Brisson as *Cuculus cayanensis minor*, and is entered by Linnæus and Gmelin as var. β under *Cuculus cayanus*. Gmelin also adds a description of a var. γ , which from its 'capite cinereo' must be *Piaya melanogaster*.

Illiger (1812) regarded these as sexes of the same species and gave them the name *Cuculus rutilus*, while Spix (1824) did the same thing, calling them *Macropus caixana*. The figure and description of his female (= *melanogaster*) is defective in that he does not give the abdomen as black; furthermore he showed by a query that he was not sure whether this was the same species as the smaller bird, therefore his name must unquestionably be restricted to the latter. Illiger's name could be allotted to either bird, but as the smaller one, var. α , stands first, and as it was not subsequently named *minutus* until after the name *melanogaster* was proposed for var. γ , I think *rutilus* should be used for 'var. α ,' currently known as *Piaya minuta*.

Piaya cayana.

Common characters. Above some shade of ferruginous, bay or walnut brown, rectrices and remiges with more or less wine purple gloss, tips of remiges dusky, rectrices tipped with white with a subterminal black bar above: central pair usually rusty beneath, others varying from rusty to black in the various races, the white tips always distinct, the subterminal band present or absent, lower surface of body pale gray, thighs sometimes and crissum always darker, throat and breast vinaceous cinnamon.

The races vary in the color of the upper parts and of the lower side of the tail, as well as in the color of the crissum; the latter, however, is not always constant. There is also marked difference in size, and in the proportions of the bill.

The extremes of coloration are seen in fresh specimens of *P. columbiana*, *nigricrissa* and *macroura*, which on the upper surface are respectively ferruginous, bay and walnut brown of Ridgway's Nomenclature of Colors.

The relationship of the other forms, so far as the color of the upper parts is concerned, is shown below:

P. c. columbiana, ferruginous.

P. c. mexicana, ferruginous.

P. c. pallescens, ferruginous, a trifle paler.

P. c. insulana, ferruginous, a trifle darker.

P. c. nigricrissa, bay.

P. c. mehleri, chestnut tinged with bay.

P. c. cayana, chestnut tinged with bay.

P. c. cauce, similar to the last but more ferruginous.

P. c. macroura, walnut brown.

P. c. boliviana, walnut brown.

Piaya cayana cayana Linn.

Cuculus cayanus Linnæus, Syst. Nat., I, p. 170, 1766 [Cayenne].

Coccyzus macrocerus Vieillot, Nov. Dict., VIII, p. 275, 1817 [Cayenne].

Coccyzus cayanaensis Swainson, Class. Bds., II, p. 323, 1837 [Cayenne].

Pyrhacorax guianensis Cabanis and Heine, IV, p. 85, 1862 [British Guiana].

Length of wing, 5.65; tail, 11.10.

Above chestnut strongly tinged with bay, grayer on the head, wings and tail glossed with wine purple, flanks smoke gray, crissum mouse gray, under side of rectrices dull black except for the white tips, no trace of subterminal bands.

Some birds have the crissum paler than others. Mr. Hartert at one time (*Nov. Zool.*, XIII, p. 43) regarded this as a distinctive character separating the bird of French Guiana from that ranging from

Dutch Guiana through the Orinoco valley (*P. c. guanensis*), but later (NIV, p. 35) he considers the difference not constant, in which opinion I heartily agree.

Specimens examined from *Guiana*—Cayenne, Annai, Surinam; *Venezuela*—Maupa, Suapure, Lourde 1700 m.

Piaya cayana columbiana (Cab.).

Pyrhcorax columbianus Cabanis, Jour. f. Orn., 1862, p. 170 [Cartagena, Colombia].

Pyrhcorax mesurus Cabanis and Heine, Mus. Hein., IV, 1862, p. 83 [Bogota].

Length of wing, 5.65; tail, 11.85; length of culmen, 33 mm.; height, 12.5 mm.

Above ferruginous, slightly paler on the head, tail and ends of wings, with a gloss of wine purple in certain lights, flanks and crissum as in *cayana*; under side of rectrices rusty, more or less minutely flecked or watered with black on the inner webs, broad, well-defined subterminal black bands and white tips.

This bird is indistinguishable from *mexicana* above, and differs below only in the greater amount of black shading on the rectrices; the greatest difference is found in the much larger bill. Bogota specimens have a still greater amount of black on the under side of the rectrices.

Specimens examined from *Colombia*—Santa Marta, Bonda, Bogota; *Venezuela*—Cumanacoa, El Pilar, Valencia, Macuto, Santo Domingo, 2,000 m.

Piaya cayana insulana Hellmayr.

Piaya cayana insulana Hellmayr, Nov. Zool., XIII, p. 40 [Trinidad].

Length of wing, 5.58; tail, 9.30.

Above ferruginous with a slight chestnut tint, closer in color to *columbianus* and *mexicanus* than to *cayana*, tail rather darker with a purplish gloss, thighs and crissum as in *cayana*. Under side of rectrices dull black, the outermost one rusty on outer vane near the quill for two-thirds of its length, the others largely rusty on the outer vane except for a subterminal black area, some of them rusty, in certain lights at least, on parts of the inner web, which helps to bring out an obscure ill-defined subterminal band.

Specimens examined from Trinidad.

Piaya cayana mexicana (Swains.).

Cuculus mexicanus Swainson, Philos. Mag., I, p. 440, 1827 [Tableland of Temascaltepec].

Length of wing, 5.90; tail, 12.65. Length of culmen, 30 mm.; height, 10 mm.

Above ferruginous with wine purple reflections on the tail and ends

of the wings, below like *colombianus* except that crissum is paler and the rectrices are uniform rusty brown or pale ferruginous, except for the subterminal black band and white tips; some of the feathers have the black flecking near the base, but it is not apparent unless the tail is fully spread.

Specimens examined from *Mexico*—Esquinapa, Mazatlan, Juana-catlan, Barranca, Ibarra, Calete, Tupila River, Arroyo de Lemones.

***Piaya cayana mehleri* (Bonap.).**

Piaya mehleri Bonaparte, Conspect. Avium, I, p. 110, 1850 [Santa Fé de Bogota—loc. err. fide Sclater, P. Z. S., 1860, p. 285 = Cent. Amer.].

Piaya thermophila Sclater, P. Z. S., 1859, p. 368 [Mexico and Guatemala].

? *Cuculus ridibundus* Gmelin, Syst. Nat., I, p. 414, 1788 [New Spain].

? *Cuculus rubicundus* Stephens, Shaw's Gen. Zool., IX, p. 109, 1815 [Mexico].

Length of wing, 5.80; tail, 10.90.

Above like *cayana*, below darker, crissum dull black, thighs dark gray; under side of rectrices dull black, outermost feather usually uniform, the others with the outer vane more or less rusty, except for a subterminal black area. Mexican birds average less rusty than those from farther south. Occasional specimens have a slight watering of rusty on some of the inner webs; the subterminal band is never defined. The coloration of the tail below is practically intermediate between *cayana* and *insulana*.

Mexican and Yucatan birds have the bill distinctly smaller than those from Nicaragua and Panama. Mexican birds average larger than those from the Central American countries and Yucatan specimens average smaller, but these differences do not seem sufficiently marked to deserve recognition in nomenclature.

Specimens examined from *Mexico*—San Tan, Jalapa, Tampico, Tehuantepec, Tabasco, Vera Cruz, Orizaba, Potrero, Yucatan; *Guatemala*; *Honduras*—Ceiba, Truxillo, San Pedro Sula, Yaruca, Segovia River; *Salvador*; *Nicaragua*—Managua, Chinnudeza, Escondido; *Costa Rica*—San José, Guayabo, Pigres, Volcan de Irazu, Bonilla, Talamanca, San Domingo de San Mateo; *Panama*—Boco del Toro, Chiriqui David, Boquete.

***Piaya cayana caucae* subsp. nov.**

Length of wing, 5.60; tail, 12.

Above bay strongly tinged with chestnut or dull ferruginous, wings and tail with a wine purple gloss. Below similar to *nigracrisa*, but the thighs as well as the crissum are deep black and the lower part of the abdomen, so that this color encroaches upon the gray area more than in any other race; under side of rectrices almost exactly as in *insulana*,

the rusty tint being mainly restricted to the outer vanes of the feathers and the black subterminal bands scarcely perceptible.

This race is the brightest of the 'bay-backed' series and approaches *insulana*, the dullest of the 'ferruginous-backed' series, in the color of the upper parts.

Type No. 71,581, Amer. Mus. Nat. Hist. Rio Cauca, Colombia, May 27, 1898. ♂. J. H. Batty. Wing, 5.55 ins.; tail, 12.10 ins.

Piaya cayana nigricrissa (Sclater).

Piaya nigricrissa Sclater, P. Z. S., 1860, p. 285 and 297 [New Grenada and Peru].

Length of wing, 5.45; tail, 10.20.

Above bay with a strong wine purple gloss on wings and tail, thighs dark gray, crissum blacker, less sooty than in *mehleri*; under side of rectrices as in *cayana*, uniform dull black with the exception of the white tips.

Specimens examined from *Colombia*—Bogota; *Ecuador*—Napo River, Archidona, Guayaquil; *Peru*—headwaters of the Huallaga River, Pebas.

Piaya cayana pallescens (Cab. and Heine).

Pyrhocorax pallescens Cabanis and Heine, Mus. Hein., IV, p. 86, 1862 [North Brazil].

Piaya cayana cabanisi Allen, Bull. Amer. Mus. Nat. Hist., V, p. 136, 1893 [Chapada, Matta Grosso, Brazil].

Length of wing, 5.95; tail, 11.75.

Upper parts similar to *columbiana* but paler, the bright ferruginous modified by a tone of ochre; crissum and thighs paler than in *columbiana*, and abdomen paler than in any other race, under side of rectrices nearly uniform rusty brown except for the white tips; the pale rusty tint usually pervades the whole dark area instead of forming definite patches, in some lights, however, the dusky subterminal bands are clearly discernible.

I have studied Dr. Allen's series of *cabanisi* from Chapada, Matta Grosso, and cannot find sufficient difference between them and birds from more northern Brazilian localities to warrant separation from *pallescens*. Five specimens of the latter give average length of wing 5.90 and tail 11.30, while ten Matta Grosso birds give wing 6, tail 12. These differences are less than those shown by series of *mehleri* from different parts of its range and since, as Dr. Allen admits, there are practically no color differences, there seems to be no ground for recognizing *cabanisi* as distinct.

Dr. Allen was misled by the general recognition accorded to the more

southern *macroura*, to which he thought his bird must be referred, and which he thought required a new name.

Specimens examined from Chapada, Matto Grosso, Corumba, Matto Grosso, Bahia, Para and Rio Janeiro.

The Para specimen approaches *cayana*, while those from Rio Janeiro are darker, showing a possible tendency toward *macroura*.

Piaya cayana macroura (Gambel).

Piaya macroura Gambel, Journ. Acad. Nat. Sci. Phila., 1849, p. 215 ['Surinam' loc. err. fide Cabanis and Heine, Mus. Hein., IV, p. 87 = Paraguay].

Piaya circ Bonaparte, Consp. Avium, I, p. 110, 1850 ['Colombia,' loc. err. fide Cabanis and Heine = Paraguay].

P. c. var. *guaurania* von Ihring, Rev. Mus. Paulista, 1904, 448 [S. Brazil].

Length of wing, 6.75; tail, 15.10.

Above walnut brown sometimes tinged with burnt umber, wings tinged with chestnut and tail with bay, slightly glossed with wine purple, head distinctly gray; thighs dark gray, crissum nearly black; under side of rectrices dull black excepting the white tips, no trace of a subterminal band.

Specimens examined from *Paraguay*; *Brazil*—Rio Grande do Sul.

Piaya cayana boliviana subsp. nov.

Length of wing, 5.85; tail, 11.50.

Above walnut brown, wings and rump tinged with chestnut, tail tinged with bay, both glossed with wine purple; flanks dark gray, crissum slightly darker; under side of rectrices dull black with tips white, no trace of a subterminal band.

This race is exactly like *macroura* except for the gray crissum and much smaller size.

Type No. 30,850, Amer. Mus. Nat. Hist. Yungas, Bolivia. Dr. H. H. Rusby. 6,000 ft. 1885. Wing, 5.90; tail, 11.60.

Specimens examined from *Bolivia*—Yungas, La Paz; *Peru*—Inca Mine.