

NOTES ON FLAT-BILLS OF THE GENUS *PLATYRINCHUS*
(TYRANNIDAE)

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WHAT IS *Todus platyrhynchos* GMELIN?

As far as I know, R. von Ihering (1902) was the first to apply the name *platyrhynchos* to the South Brazilian Tyrant, up to that time called *Platyrhynchos rostratus* Latham (1790). Sclater (1888) had previously placed *Todus platyrhynchos* Gmelin at the head of the synonymy of this species, and therefore he seems to have been responsible for this application of the name. *Todus platyrhynchos* Gmelin, however, can hardly be the name of any bird of this sort from southeastern Brazil because at the time of its first use almost no small birds from that country had reached Europe. Pallas (1769) had seen a specimen of *Todus platyrhynchos* in the cabinet of the Prince of Orange, where he went sometimes during his stay at The Hague. He did not describe the olive-headed bird of southeastern Brazil, but his description clearly indicated a bird with leaden gray upperpart of the head: "Capitis vertex plumbei coloris, macula in medio oblonga alba . . . Dorsum fuscolutescens. Subtus tota avicula lutea, gula albicante. Remiges atque rectrices aequales fuscae . . ." No comparison with the length of the Nightingale is added beyond.

The plumbeous-headed group of flat-bills is not represented in southeastern Brazil, nor do we know of any black-headed species at all. The fact that Pallas saw the bird in the Prince of Orange's cabinet suggests Surinam as the locality for this bird. There, indeed, we find a single representative of the plumbeous-headed, white-crested group. Up to now this form was called *Platyrinchus senex griseiceps* Salvin 1897.

When Gmelin (1788) copied the description of the bird as given by Pallas and made it the only basis for his *Todus platyrhynchos*, he did not add any locality. Without repeating the full synonymy quoted by Hellmayr (1927) I propose the following changes, after having given the new citations for *P. platyrhynchos*:

Todus platyrhynchos Gmelin, Syst. Nat., 1, pt. 1, 1788: 446, based on Pallas (1769) which is without locality: Surinam is suggested as type locality.

Todus rostratus Latham, Index Ornith. I., 1790: 268—new name for *T. platyrhynchos* Gmelin.

Todus atricapillus A. Lichtenstein, Cat. Rer. rariss., 1793: 17—without locality: Surinam is suggested as type locality (see below).

Platyrinchus griseiceps Salvin, Bull. Brit. Ornith. Cl., 7, 1897: XV—"Aunai" = Ourumee, British Guiana.

Therefore, *Platyrinchus senex griseiceps* Salvin 1897 becomes *Platyrinchus p. platyrhynchos* (Gmelin) 1788.

Platyrinchus platyrhynchos auct. nec Gmelin, 1788, becomes *P. fuscus* Vieillot, Galerie Ois., 1, pt. 2, 1824: 201, pl. 126—Senegal: *errore*.

P. fuscus seems to be the oldest name for the species inhabiting southeastern Brazil. At the time of its description in 1824, the collections of Ferreira were worked up, and therefore many bird specimens from Brazil were studied for the first time, though they had been sent to Portugal long before (Stresemann, 1948).

WHAT IS *Todus atricapillus* A. LICHTENSTEIN 1793?

There are two interesting species of *Todus* among the many rarities of the cabinet of Holthuizen, described by A. A. H. Lichtenstein (1793).

"*Todus platyrhynchos*; Gm. spec. 14. Pallas spicil. p. 19 t.3 C. Habitat in Sibiria." This locality was added, I suppose, because Lichtenstein knew Pallas only as a famous explorer of Siberia. "Obs. Noster magnitudinem Lusciniae haud aequat. Der breitschnäblichte Todier aus Sibirien, mit plattem halbeyrunden schwarzem Schnabel. N. B. Viel kleiner als eine Nachtigall."

"*Todus atricapillus*; nobis. Antecedenti simillimus, nisi quod rostrum & mentum magis exalbidium; & venter dilutius flavus. Probabiliter antecedentis femina. Der schwarzköpfige Todier; dem Vorigen sehr ähnlich, nur dass der Schnabel und die Kehle weisslicher, auch der Unterleib hellgelber ist. Es ist wohl ohne Zweifel das Weibchen des Vorigen."

From this quotation it seems clear that *T. atricapillus* Lichtenstein was a *P. platyrhynchos*, the alleged differences from this species being due to some variation in age, since the black bill of Lichtenstein's "*T. platyrhynchos*" seems to indicate a bird not fully grown. The locality of both, then, would be in Dutch, French, or British Guiana, whence the 'Catalogus' records so many birds. I suggest Surinam as type-locality for *T. atricapillus* Lichtenstein.

THE THREE WHITE-CROWNED SPECIES OF *Platyrinchus*

The range of the blackish-gray headed *Platyrinchus platyrhynchos* (Gmel.) is almost completely encircled by those of the brown-headed species, *P. flavigularis* Sclater and the large olive-headed *P. fuscus* Vieillot. (One specimen of this species was kindly sent on loan by

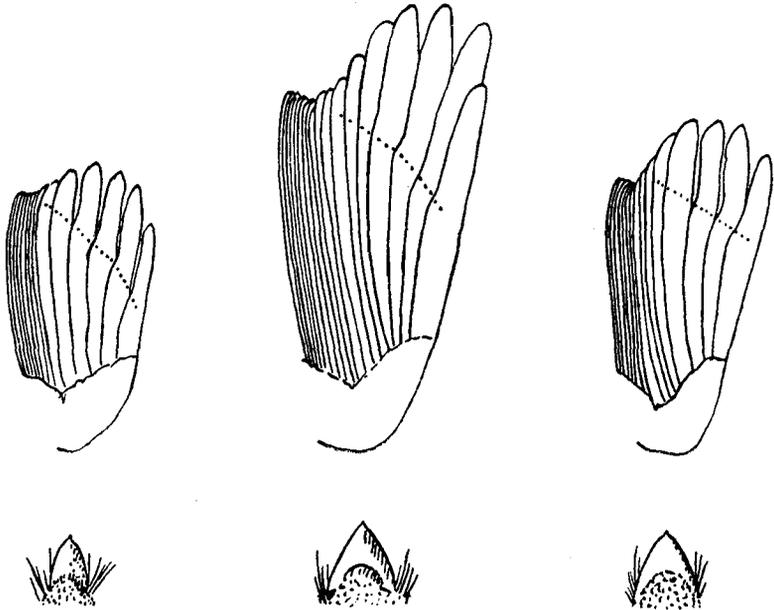


FIGURE 1. Wing from below and bill from below, of (left) *Platyrrinchus m. mystaceus* Vieillot, specimen from Parana, March 4, Berlin Museum; (center) *P. fuscus* Vieillot, specimen without locality, British Museum, 58.3.5:2; and (right) *P. flavigularis* Sclater, specimen from Ramos Urcu, NE. Ecuador, September 7, Berlin Museum. For explanation, see text. The dotted line joins the points of attenuation of the inner webs, to show the propulsive part of the wing.

the authorities of the British Museum [Nat. Hist.].) Apparently they do not meet in eastern Brazil, but in Ecuador (Sarayacu in the extreme east) the ranges of *P. platyrhynchos senex* Sclater and Salvin and of *P. flavigularis* nearly touch. One specimen of the latter from Ramos Urcu (Río Napo) in the extreme north, female, 17 September 1932, is in the Zoological Museum, Berlin (Stresemann, 1937, *sub nom. P. s. senex*).

These three white-crested species of *Platyrrinchus* differ from all the other species by their broader bills. Their wings are more pointed than all except those of *P. coronatus* (see figure 1).

SPECIATION OF THE FLAT-BILLS

The genus *Platyrrinchus* comprises the following six species:

1. The Golden-crowned Flat-bill: *P. coronatus*.
2. The Yellow- and Cinnamon-crowned Flat-bills: *P. mystaceus* (including *cancrominus*, see Zimmer, 1939) and *saturatus*.

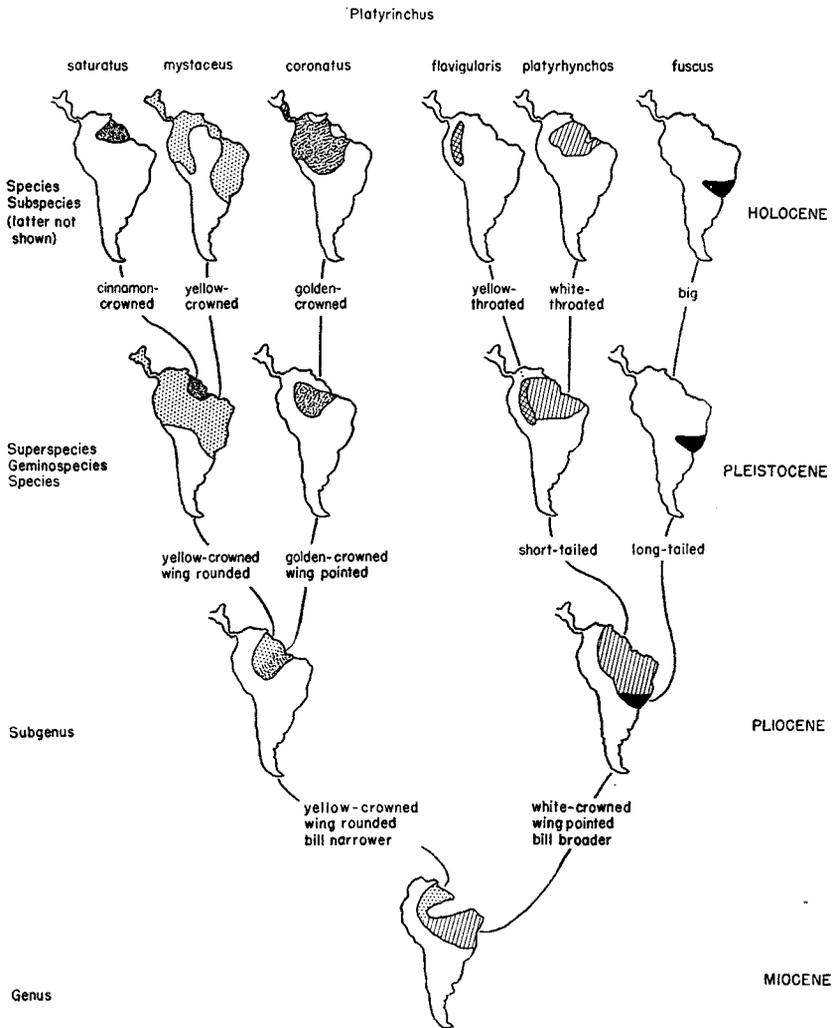


FIGURE 2. Speciation in *Platyrinchus* (for explanation, see text).

3. The White-crowned Flat-bills: *P. platyrhynchos*, *flavigularis*, and *fuscus*.

All four crown-colors can be found in the countries north of the lower Amazon River., e.g. in British Guiana.

Allopatric evolution, however, must not and cannot be excluded as shown in the rough maps—(figure 2).

The golden-crowned *P. coronatus*, which is widely distributed from southern Mexico to southern Brazil, seems to have arisen from a

stock near *P. mystaceus* and *P. saturatus*, retaining the narrow bill, short tail, and other characters of this group; but the wing is much more pointed, the ninth primary reaching beyond the fourth and the wing tip being 23 per cent of wing-length, more than in *fuscus*.

Within the white-crowned group, the three species must have originated in three different districts of tropical South America, the species *P. platyrhynchos* being nearer the original stock than *flavigularis* and *fuscus*, the two species of the outer circle of the group-area. *P. flavigularis* differs from all other members of the genus in having a yellow throat; *fuscus* by the relatively long tail (tail length multiplied by 100 and divided by wing-length = 60, as against 43 to 51 in the other species).

I think this group is farthest distant from the original stock of the genus because of its white crown, the very broad bill, and the pointed wing, which is not so pointed in *fuscus*, however, as it is in the other two (*fuscus*: primary 7 = 6 - 8 - 5 - 4 - 9 - 3; *platyrhynchos* and *flavigularis*: primary 8 - 7 - 6 - 5 - 9 - 4 - 3 - 2 - 1, i.e. the outermost falls between the fourth and third in *fuscus*, between the fifth and fourth in the two other species).

A survey of the characters of the six species may show their respective affinities:

	<i>saturatus</i>	<i>mystaceus</i>	<i>coronatus</i>	<i>flavigularis</i>	<i>platyrhynchos</i>	<i>fuscus</i>
Bill	narrow	narrow	narrow	broad	broad	broad
Crown	cinnamon	yellow	golden	white	white	white
Head	olive	brown olive	olive	brown	plumbeous	olive
Throat	white	whitish fulvous	yellowish olive	yellow	white	white
Tail/wing index	44	51	43	50	49	60
Ninth primary	<1	<1	4-5	4-5	4-5	3-4
Length of wing-tip in millimeters	18	19	23	27	25	19
Wing length in millimeters	57	53	56	59	67	76
Longest primary	6	6	7	8	8	6 = 7

My ideas on speciation in this group are presented with aid of maps showing the phylogenetic tree of the genus in time and space).

a) Tertiary (Miocene). Northern South America might have been inhabited by the first *Platyrinchus*, perhaps originating in the Guianas, where today most of the six species of this genus occur. The first geographical forms of this species were separated for a longer time by the Amazon Basin, at those times a relatively broad sea. Whether, in northwestern regions, the Llanos—sea in those days—formed the limit or not, I do not know.

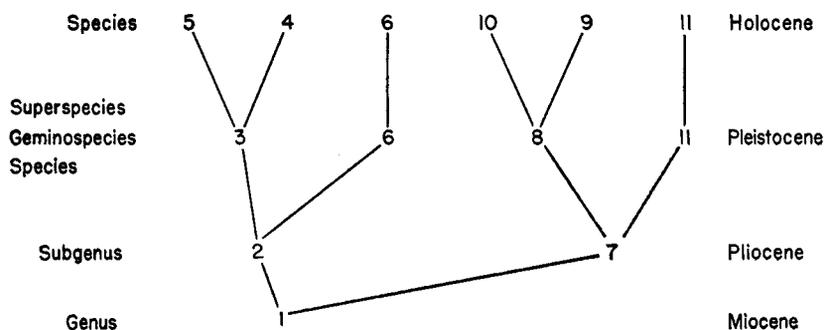
b) In Pliocene South America the southern form, approaching the white crown character and acquiring a broader bill and more pointed

wing moved northward, across the Amazon Valley which had become narrower. This form did not hybridize with the northern form, which became a species (I) and later retained the primitive yellow crown for a longer period, round wings, and narrow bill. This species, in its turn, went to the south. Thereby we had two sympatric species in these parts of South America. The last-named yellow-crowned species developed into two subspecies and later species (by allopatry becoming later sympatric). In Guiana and neighboring districts, the northern, yellow-crowned, round-winged species (I A), which did not become very different from the original genetic stock, moved into Central America (perhaps during Pliocene time, Arldt, 1928). The southern subspecies—later species—(I B), Brazilian, developed a golden-crown and pointed wings. The southern form of the original species, however, divided into two subspecies (later species) of which one kept the short tail of the whole group (II A) and the other, a more specialized form inhabiting southeastern Brazil, acquired a long tail (II B). Later, this stock did not gain much area and has become our large *Platyrinchus fuscus*.

c) During the Pleistocene two more species may have originated, one (IA1) in the Guianas as a cinnamon-crowned subspecies of the widely spread yellow-crowned precursor of *P. mystaceus* (IA2), whereas the golden-crowned *coronatus* spread into Central America. During this period the white-crowned, short-tailed group (IIA) divided into a western yellow-throated (II A 1) and an eastern white-throated subspecies (II A 2).

d) During the Holocene period, during the last 10,000 years, the six species became established. I A 1 (the tropical life-zone *P. saturatus*) is relatively near to the subtropical life-zone *P. mystaceus* (I A 2) which in Central America has become the very different *P. m. cancrminus*-group of subspecies. The golden-crowned *P. coronatus* (I B) is a bird of the tropical life-zone. The white-crowned flat-bills (II) with short tails are now sharply divided into the yellow-throated *P. flavigularis* (II A 1) and the white-throated *P. platyrhynchos* (II A 2), whereas, as we said above, the large *P. fuscus* was split no more. (Perhaps *P. saturatus* in Guiana and *P. flavigularis* in the west of the Llanos Sea originated in the Pliocene period, the two stocks I and II thus being divided into three forms, each within this time).

The species which now stands nearest to the original stock of *Platyrinchus* (I/II) seems to be *P. mystaceus* (I A 2); the following scheme shows the branching of the *Platyrinchus* tree in a more simple manner, the numbers give the sequence of morphological similarities of all "leaves" on this twig of the avian tree.

BRANCHING OF THE GENUS PLATYRINCHUS

(The sequence of 1-11 gives an idea of the approximate morphological similarity of the forms that figure in the maps of figure 2. The degree of deviation, according to Hennig (1950) is shown by putting 1 nearly vertically beneath 4.)

SUMMARY

1. The white-crowned, plumbeous-headed species of flat-bills (*Platyrinchus senex griseiceps* Salvin 1897) should be known as *P. p. platyrhynchos* (Gmelin) 1788 (with *Todus rostratus* Latham 1790 and *T. atricapillus* A. Lichtenstein 1793 as synonyms), if not, under the new rules, *griseiceps* is applicable.

2. The large white-crowned flat-bill inhabiting southeastern Brazil should be known as *P. fuscus* Vieillot 1825.

3. *Platyrinchus flavigularis* has been collected in the Rio Napo district of Ecuador, this being the first record for that country.

The evolution of the six species of *Platyrinchus* in time and space is tentatively shown, based on characters and distribution. The ranges of the original stocks, of course, are very doubtful, but are based on the idea of an allopatric evolution of new forms and their consequently becoming sympatric.

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