

## THE BLACK-WINGED PALM TANAGER.

BY AUSTIN H. CLARK.

THROUGH the kindness of Mr. Outram Bangs, I have been enabled to examine the large series of *Tanagra palmarum melanoptera* (Sclater) in his collection, as well as those in the collection of the Museum of Comparative Zoölogy at Cambridge.

The localities represented in the series, with the number of specimens from each, are as follows: Panama, 19; Santa Marta, 1; Margarita Island, 3; Trinidad, 2; "Venezuela," 1; Yacura, Venezuela, 1; Lake Titicaca, Peru, 2. In addition to these examples, I have, in my tabulation, made use of the measurements given by Mr. Ridgway<sup>1</sup> for skins from the following localities: Costa Rica, 6; Panama, 2; Trinidad, 2; British Guiana, 1; Lower Amazons, 5; Rio Huallaga (Peru), 2. This brings the whole number under discussion up to forty-seven.

For comparison, specimens of *T. palmarum palmarum*, were studied from Santarem (1), Bahia (1), and "Brazil" (3).

The object in view was to observe the variations of this subspecies with regard to its geographical distribution, and to determine whether the northern bird, occurring about Panama, is separable as a valid form, which Ridgway considers may prove to be the case.

Dr. Sclater<sup>2</sup> gives the distribution of *Tanagra palmarum* as "southern Brazil and Bolivia northward to Trinidad, Venezuela, Colombia, Panama, and Costa Rica." The subspecies *melanoptera* is given<sup>3</sup> as occurring in the western part of South America, from Nicaragua south to eastern Peru (type locality), and east to Trinidad, including Colombia, Ecuador, Venezuela, and the Amazons valley. This restricts *T. palmarum palmarum* to eastern and southeastern Brazil, north to British Guiana. Ridgway says that in the same locality in the lower Amazons district, examples occur, representing as to coloration, at least, both forms;

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<sup>1</sup> Birds of North and Middle America, Part II, p. 59.

<sup>2</sup> Catalogue of the Birds in the British Museum, Vol. XI, p. 160.

<sup>3</sup> Ridgway, *loc. cit.*

while Sclater states that in Guiana (Demerara and the Mt. Roraima region), Surinam (Dutch Guiana), and on the island of Mexicana (Lower Amazons), intermediate grades occur, the olive-green edgings to the wing feathers in these specimens being only slightly manifest. In the absence of material from these localities, I cannot make any remarks on this point, but I merely wish to call attention to the fact that, while Sclater regards *melanoptera* as a good subspecies of *Tanagra palmarum*, Ridgway is inclined to consider them as entitled to full specific rank.

In the accompanying table are given the averages for all the male specimens from the various points.

From the figures it will be seen at once that, as regards the wing, the largest specimens are from Peru, while the smallest are from Panama; starting at Panama, the average rises west into Costa Rica, and east, through Santa Marta, Yacura, and Margarita Island, to Trinidad. The lower Amazons specimens are the same size as those from Costa Rica, and are smaller than those from Guiana and Trinidad.

MEASUREMENTS OF *Tanagra palmarum melanoptera* SCL.

Localities	Wing	Tail	Ratio of Wing and tail	Culmen	Tarsus
Peru . . . . .	98.8	76.9	1.28	13.5	21.4
Panama . . . . .	90.8	68.2	1.36	13.2	20.6
Costa Rica . . . . .	94.2	71.1	1.32	13	20.8
Santa Marta (1) Colombia . . . . .	93	72	1.29	11	20
Yacura, Venezuela . . . . .	94	73	1.28	14	20
Margarita Island . . . . .	96.3	73.3	1.31	14	20.6
"Venezuela" (1) . . . . .	100	73	1.37	13	20
Trinidad . . . . .	97.2	70.8	1.37	14	21
British Guiana . . . . .	97.5	72.9	1.33	13	20.6
Lower Amazons . . . . .	94.7	71.4	1.32	13.2	20.8

*Tanagra palmarum palmarum* Max.

Brazil . . . . .	99	72.2	1.37	14.5	22.2
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The tail measurements, however, do not vary in the same way. Although the birds with the shortest tails are from Panama, those

with the next shortest come from Trinidad, while Margaritan birds have the longest of any, with the exception of Peruvian examples. Costa Rican birds are close to those from the lower Amazons.

By dividing length of wing by length of tail, we obtain a ratio between the two. An examination of these figures shows that Peruvian birds have the longest tails proportionately, while those from Trinidad have the shortest. Specimens from middle northern Venezuela (Santa Marta, Yacura, and Margarita) and from Costa Rica are intermediate. Those from Panama resemble most closely Trinidad examples, while the lower Amazonian form agrees with the Costa Rican.

In regard to the length of the chord of the culmen, birds from Yacura, Margarita, and Trinidad exceed all others. Guianan and Costa Rican specimens agree in having very short beaks, while those from Peru, Panama, and the lower Amazons are intermediate.

Tarsal measurements show that Costa Rican and lower Amazonian birds are identical in this character; while Trinidad and Peruvian birds are pretty close, having the longest tarsi. Panama specimens have shorter tarsi, agreeing with those from Guiana; Santa Marta and Yacura ones have the least of all, while the Margaritan form is intermediate between them and the bird of Trinidad.

In measurements the true *T. palmarum palmarum* from south-eastern Brazil is larger than the average of the subspecies *melanoptera* examined in respect to length of wing, culmen, and tarsus; but in tail measurements it is near the Santa Martan bird. The ratio between length of wing and length of tail is that of Trinidadian *melanoptera*.

In short, then, the specimens of *T. palmarum melanoptera* from Costa Rica show a striking similarity in all dimensions to those from the lower Amazons. Peruvian birds are largest, except for the beak, while Trinidad birds are near them in all respects save in length of tail. Guianan birds are also close, having longer tails than those from Trinidad. There seems to be a regular gradation from Panama along the coast to Trinidad. The most striking fact is the small size of the Panama birds as compared with those from Costa Rica on the west and Santa Marta and Yacura on the east.

There seems to be no constant variation in color; but this character is uncertain in these birds, and differences are to be met with in specimens from the same locality. The violet gloss is the most noticeable feature. This gloss is, however, mainly confined to the distal portion of the feather, and seems to undergo considerable diminution, often a month before the feathers are renewed again. Even in fresh specimens from the same place the difference is considerable, some, apparently adult, having almost none, while others have it very strongly marked.

From the data just given, it appears that, as would be expected, the largest specimen come from the high mountains of Peru. Here doubtless food is comparatively scarce, and a bird must cover a considerable area in order to obtain a sufficient supply. Size, therefore, is a distinct advantage. The lower Amazons supports a small race. Food here is abundant, and so natural selection is not called upon so urgently to weed out the smaller and weaker individuals. The race is small at Panama for the same reason; while mountainous Costa Rica, Santa Marta, Yacura, and Margarita are inhabited by larger birds. Very likely the birds on Trinidad are stragglers from the rough and barren Venezuelan shore, where the small ones have been eliminated.

The series examined contains two interesting specimens. One has a peculiarly long and narrow bill, but is otherwise apparently normal. This bird, a male, was taken on Margarita Island, and was noticed in 'The Auk' for July, 1902, p. 266.

The other is a partial albino. It is a young male<sup>1</sup>, and was taken at Loma del Leon, Panama, on March 3, 1900. The left wing has the proximal secondary attenuated, short, and with its basal and central portions white. The next secondary is normal; but the third has a large white distal patch, extending inwards 15 mm. from the tip of the feather. The patch is central in position, and does not reach the border on either side. From the appearance of both these feathers the condition may be pathological.

The Black-winged Palm Tanager is very common on the island of Trinidad, where it can be seen at almost any time about the

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<sup>1</sup> Collection of E. A. and O. Bangs, No. 7467.

gardens in Port-of-Spain. It is very active and restless. The song of this bird is unlike that of any of ours, being a quick ascending succession of notes, pitched very high. There is a suggestion of panting and of effort in the song, and its high key, which makes it somewhat squeaky, is rather disagreeable.

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## NOTES ON THE ANATOMY OF *GEOSPIZA*, *COCORNIS*, AND *CERTHIDIA*.

BY ROBERT E. SNODGRASS.

Plates XVII-XX.

*Geospiza* and *Certhidia* are the two distinctively peculiar avian genera of the Galapagos Islands. The former consists of a large number of species and varieties, and has always been regarded as belonging to the family Fringillidæ. *Certhidia*, consisting of eight varieties comprised in two species, was formerly placed in the Cærebidæ, but both Lucas and Ridgway now regard it as belonging to the Mniotiltidæ. *Cocornis* is known only from the small island of Cocos, lying off the Gulf of Panama and northeast of the Galapagos Islands about four degrees north of the equator. It consists of one known species, and has always been assigned to the Fringillidæ. But it has probably been so classified more on account of its general resemblance to *Geospiza* than from a consideration of its own characters.

In all structural points *Cocornis* really resembles *Certhidia* more than it resembles *Geospiza*. To be sure, the adult males of *Cocornis* and of most of the *Geospiza* species are almost plain black, while the adults of *Certhidia* are gray with admixtures of olive and brownish. Yet, in the shape of the bill and in the structure of the skull *Certhidia* and *Cocornis* are almost identical. On the other hand, the structural differences between *Cocornis* and *Geospiza* are slight—the slender-billed *Geospizæ* differ from *Cocornis* in the characters of the skull and skeleton of the bill,