

A LIST OF BIRDS OBSERVED AT SANTAREM, BRAZIL.

BY CLARENCE B. RIKER.

With Annotations by Frank M. Chapman.

IN JULY, 1884, I visited Santarem, a town of 5000 inhabitants, situated on the Amazon at the mouth of the Tapajos River, 500 miles from the ocean. I made a second trip in June, 1887, and remained until the end of July. At this season the easterly trade winds blow constantly, tempering to a remarkable degree the intense heat of the tropical sun. The two seasons, the wet and the dry, are well defined; the dry period lasting from the middle of May until the middle of November with but occasional showers. The remainder of the year is characterized by almost constant rain.

During the dry season many forest trees shed their leaves, and the grass and small shrubs wither, while the palms and the majority of other trees bear their fruit; a noticeable exception, however, is the mango, the fruit of which matures in February. The physical conditions of the location are peculiarly adapted to a much diversified fauna. The city is located on a sandy bluff, back of which, and extending about five miles, is a sandy campos dotted here and there with clumps of bushes or small groves of stunted trees. Back of this again lies a belt of dense forest extending about three miles further to the edge of a table-land rising abruptly three hundred feet. This plateau extends to the southeast for thirty miles without a stream to give variety to the dense forest of giant trees. There are but few small ponds within this forest region, so far as it has been explored, and during the dry season these mud-holes swarm with an abundance of game. About these ponds, feeding upon the fruit of a palm found growing only there, is the only place where I have ever seen the great Blue Macaw (*Ara hyacinthina*). The plateau extends about 150 miles parallel with the Tapajos, and lying between it and the river is the campos district, which is alternated with palm swamps and a description of forest I have termed semi-palm, being a mingling of the hard wood trees and the palms. At various points spurs of the table-land rise abruptly from the river.

Diamantina, the settlement at which I was located, is eight miles from Santarem, and four miles from the Amazon. At the foot of the plateau, or 'mountain' as locally termed, an arm of the Amazon, called the Igarapi Mahica, runs within two miles of the settlement, and during the rainy season, expands into a vast lake embracing many square miles of palm forest.

Devoting most of my efforts to the mountain and semi-palm forest, spending but few days near the water, and but three days collecting on the campos, I can account for the absence in my collection of many species recorded by others as very common at Santarem; the bulk of most collections having been made about the campos and adjacent forest. The very striking contrast between the fauna of these belts is at once noticeable; the great number of birds which one would meet in a morning's outing showed that they were each inhabited by a characteristic group. The same contrast is manifest in the distribution of the lepidoptera, of which I also collected a series.

There are sugar-cane fields and clearings on the 'mountain' corresponding to those of the low lands, and offering all the attractions for the congregation of small birds, Flycatchers, Hawks, etc., yet the altitude of 300 feet and distance of less than a mile, seem a barrier over which many species never cross. Many species of Toucans and Parrots, and both *Cassicus* and *Ostinops*, are found commonly in both localities.

The abundance or scarcity of a large number of species I found subject to daily fluctuation, dependent upon the presence of the army ant or some fruit suddenly ripening, there being scarcely two consecutive days when birds could be found plentifully on the same feeding ground.

Tanagra palmarum, *Tanagra episcopus*, *Cassicus persicus*, *Ostinops decumanus*, and some species of Doves and Parrots, migrate morning and night to and from feeding grounds, in flocks, varying from a dozen of Parrots to thousands of *Cassicus*.

With but few exceptions birds were remarkably unsuspecting and easy of approach, but the density of the vegetation affords them excellent opportunities for concealment, and leads the collector too close for the successful use of the gun, it being a difficult matter to retreat to fair shooting distance without losing sight of the bird. I have seen a score of Parrots alight in a tree and, after searching in vain, have in despair risked a shot at a moving bough

There appeared to be very little difference in the comparative abundance of birds on my two visits; on either occasion one could take the field and in a very short time secure sufficient specimens to keep him busily employed in skinning for the rest of the day.

The abundance of stinging ants, each kind of tree seeming to be inhabited by a species of its own, lends to the efforts of an oölogist a spirit of vituperation not tending toward enthusiastic and careful research. Until an effectual protection has been discovered, against the fiery stings of these tree ants, it will require more to induce a lazy Brazilian Indian to climb a tree than an enthusiastic oölogist can provide. The only species found breeding were: *Arundinicola leucocephala*, *Brotogerys virescens*, *Busarellus nigricollis*, *Leptoptila erythrothorax*, two species of *Crypturus*, and several species of Flycatchers.

My collections, amounting in all to about four hundred specimens, I forwarded to Mr. Robert Ridgway for determination, the resulting new genera and species being described by him in the 'Proceedings of the United States National Museum' (Vol. IX, 1886, p. 523, and Vol. X, 1887, pp. 493-494, 516-528, and 545). Certain additional specimens were identified by Mr. J. A. Allen, and I have now to thank my friend Mr. Frank M. Chapman for arranging my notes and for adding such remarks to this paper as a further study of my specimens renders necessary.

[In order to make the list of Santarem birds as complete as possible I have included certain species not met with by Mr. Riker, but found by other collectors who have worked in the same field, giving in every case the authority on which these records are based. The sources from which these additional data have been procured are as follows: (1) 'A List of Birds collected by Charles Linden, near Santarem, Brazil,'* by J. A. Allen; (2) a small collection of birds made by Mr. Williams, who collected at Santarem from May to October, 1883. Mr. Williams is not now living, and it is to be regretted that his collections have become dispersed. A portion of them were purchased by Mr. J. M. Southwick of Providence, Rhode Island, from whom Mr. Riker secured a number of specimens, and a small mounted collection was presented by Mr. Williams's parents to the Museum

*Bulletin Essex Inst. VIII, 3, 1876, pp. 78-83.

of Brown University. Through the courtesy of Prof. J. W. P. Jenks, the curator in charge, I have been enabled to examine these specimens at the college, and I have also to thank Mr. Southwick for permission to make use of the specimens remaining in his private cabinet. The number of Mr. Williams's specimens which I have examined, therefore, is about one hundred and fifty. (3) A collection of some eight hundred birds, made from January to April, 1889, by Mr. William Smith, who was sent to Santarem to collect by Mr. Southwick. A representative series of two hundred specimens from this collection was purchased by the American Museum of Natural History, and I am permitted by the authorities of the Museum to include here the species contained in this collection which were not found at Santarem by Mr. Riker. It will thus be seen that the collections formed at Santarem represent the presence in the field of one collector for about twelve months covering the period from January to October. In making these additions I have endeavored to preserve the strictly local character of this list, admitting no species which have not been found in the immediate vicinity of Santarem. This will, I think, give to the paper a peculiar value as indicating the avifauna of one limited locality, a character wanting in the majority of South American lists which, as a rule, present the results of observations over a more or less extended area.

Mr. Riker's experience is in the highest degree instructive; on his first trip, having little or no knowledge of South American birds or their ways, he collected without definite object and with only moderate success, securing one specimen of a species new to science. Possessed now of some experience and a knowledge of what were desirable birds and the most likely to prove new or interesting, he returned to Santarem and, collecting at practically the same season, procured fifteen species new to science of which two were the types of new genera. This comparison of results is suggestive, and illustrates the difference between indiscriminate collecting and well directed effort; how many other localities which we now suppose to have been more or less thoroughly explored, will prove on more careful and skilful investigation to be as fertile in novelties as Santarem has been, it is, of course, impossible to say.

Influenced by more recent discoveries, or additional material, I have in a number of instances revised the determination of the

species herein included, and should, therefore, be held responsible for the nomenclature as it now appears. For convenience the arrangement of Sclater and Salvin's 'Nomenclator' is followed, and with certain exceptions the nomenclature there employed is adopted.—F. M. C.]

1. *Merula fumigata* (Licht.).—Common in semi-palm growths; frequently observed flying low along the forest paths; making short flights and re-alighting before you.

[Three specimens are apparently typical of this species and agree closely with Maximilian's types of *Turdus ferrugineus*. Two individuals show a marked variation in size. A male taken June 25, 1887, measuring, wing, 4.29; tail, 3.48; tarsus, 1.21; exposed culmen, .78; while a female, taken July 1, 1887, measures, wing, 4.72; tail, 3.80; tarsus, 1.20; exposed culmen, .82 inch.—F. M. C.]

2. *Mimus saturninus* (Licht.).—A female, captured August 11, 1887, in a semi-palm thicket was the only one observed.

[This specimen measures (skin), length, 9.00; wing, 3.96; tail, 4.18; tarsus, 1.22; gonys, .41 inch; (mandible broken). It is evidently similar to the bird from Para on which Lichtenstein based his description of *Turdus saturninus*. Specimens from Bahia, to which the name *saturninus* has generally, but I believe wrongly, been given, differ greatly from the Santarem bird both in size and coloration. An example from Dr. Lacerda measures (skin), length, 11.00; wing, 4.38; tail, 5.10; tarsus, 1.40; exposed culmen, .82; gonys, .51 inch. It is much browner above and more buffy below than the Santarem bird. Lichtenstein gives the length of his Para bird as 9 inches, and says, "Cauda brevior quam in *T. polyglottos*." His description of "*T. polyglottos* Lin.," number 445 on the same page of the 'Verzeichniss' as the original description of *saturninus*, with the habitat given as "Am. sept.," enables us to recognize the bird with which he made his comparison as undoubtedly the *Mimus polyglottos* of recent authors. In this species the tail averages about 5 inches; longer, therefore, than in the Santarem bird, which thus agrees with Lichtenstein's type, but shorter than in the bird from Bahia. Aside from geographical reasons it is evident, therefore, that the name *saturninus* belongs to the Lower Amazonian bird and is not applicable to the bird from Bahia, which, being thus left without a name and being evidently worthy of recognition as a distinct species, may be called

***Mimus arenaceus*, sp. nov.**

SP. CHARS.—Similar to *Mimus saturninus* (Licht.) but larger and much browner above, the feathers of the rump sandy brownish without darker centres, the underparts with a suffusion of buffy which is heavier posteriorly.

Description.—Type, No. 39,274, Am. Mus. Nat. Hist., Bahia, Brazil.

Lacerda, in fresh and unworn plumage. Above grayish brown, the feathers of the head with distinct, those of the back with obscure, darker centres; rump sandy brownish, the feathers without darker centres; wings fuscous-brown, the primaries and outer secondaries with their greater coverts edged with whitish, the inner secondaries and tertiaries terminated with whitish and edged with the color of the rump; lesser coverts with brownish white borders which are whiter terminally; tail somewhat darker than the wings, all but the outer pair of feathers margined externally with grayish brown, the outer feathers externally margined from near their bases with whitish and terminated by a white band which measures on their shafts 1.25 inches and decreases in width on the succeeding feathers until it appears merely as a slight apical tip on the pair next the median feathers on which it is entirely wanting; there are faint blackish moustachial streaks, and a blackish line from the corner of the mouth passes through the eye, includes the upper half of the auriculars, and is bordered above by a buffy white loreal line which widens posteriorly into a broader, slightly whiter postocular stripe; the underparts are buffy whitish, slightly grayer on the breast, the buffy suffusion growing heavier posteriorly and appearing as fulvous on the crissum; under wing coverts pale, clear, creamy buff; flanks buffy brown, heavily streaked with blackish; bill black, the maxilla lighter basally; feet black, the soles yellowish.

In southeastern Brazil and south to the Argentine Republic, *Mimus arenaceus* is evidently replaced by *modulator* of Gould, with which it may intergrade. So far, as my material goes, however, the two birds are distinct.

From true *saturninus*, *arenaceus* may be distinguished (1) by its larger size, (2) by the browner coloration of the upper surface, the feathers here having less distinct blackish centres, (3) by the presence of a buffy suffusion occupying to a greater or less extent all the white areas, and (4) by the yellow instead of plumbeous color of the soles of the feet.

Although Mr. Allen, in his 'List of Birds collected at Santarem by Charles Linder,' records *saturninus* as "common," Mr. Riker met with only a single specimen and it was not taken by Mr. Smith. Mr. Layard, in his list of birds observed at Para, † does not mention it, nor does Dr. Sclater give it in his list of the birds collected by Wallace on the Lower Amazon.‡ It is apparently not common in collections and I append therefore, a description of Mr. Riker's specimen.

Mimus saturninus (Licht.).

Coll. C. B. Riker, ♀, August 11, 1884, Santarem (Diamantina.)

†Ibis, 1873, p. 374.

‡P. Z. S., 1867, p. 566.

Brazil. Plumage slightly worn. Above blackish brown, the feathers of the head with brownish, those of the back with grayish, margins; rump grayish brown, the feathers with darker centres; wings brownish black, the primaries edged with pure white, the first three with slight terminal white margins; outer secondaries with a narrower whitish margin, inner secondaries and tertiaries edged with brownish and tipped with whitish; exposed portion of the primary coverts with a broad margin of pure white, the lesser and greater coverts tipped with brownish white which is whiter terminally; tail somewhat browner than the wings, all but the outer feathers with slightly lighter external margins, the outer feathers from near their bases margined externally with white and terminated by a white band which measures 1.00 inch on their shafts, and is about the same width on the inner web of the next two feathers; on the fourth it is of less extent, on the fifth appears as a brownish white border, and is wanting entirely on the median pair of feathers; a moustachial streak is barely evident and a blackish line passing through the eye includes the upper half of the auriculars and is bordered above by a buffy loreal and grayish postocular stripe; the underparts are grayish white, deeper on the breast; crissum fulvous; underwing-coverts whitish with a slight buffy tint, the flanks buffy brownish, lighter than in *arenaceus*, and heavily streaked with blackish; bill black, the maxilla lighter basally; feet blackish, the soles dull plumbeous.—F. M. C.]

3. *Donacobius atricapillus* (Linn.).—July 7, 1887, male; June 27, 1887, female.

[4. *Campylorhynchus hypostictus* Gould.—Two specimens (Smith) February 6, and March 11, 1889, agree very closely with a specimen of *hypostictus* from Bogota, but are somewhat more heavily marked below, being, therefore, easily distinguishable from *variegatus* from Bahia.—F. M. C.]

5. *Cyphorinus griseolateralis* Ridgw.

Cyphorinus griseolateralis RIDGW., Proc., U. S. Nat. Mus., X, 1887, p. 518.

Two specimens taken July 10, 1887, amongst the debris of a fallen tree on the 'mountain,' and there were apparently several others. Their notes are more flute-like than those of any bird I have ever heard, varying from a high to a low note in a beautiful rippling song. Called by my guides, when first we heard it, the 'flute-bird,' and to it they attach a superstitious legend.

[The discovery of this species extends the range of the genus from the Upper to the Lower Amazon, where it evidently represents the Ecuadorian *Cyphorinus salvini* Sharpe.—F. M. C.]

(To be continued.)