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### NOTES ON PARAGUAYAN BIRDS

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ABSTRACT.—Storer, Robert W. 1989. Notes on Paraguayan Birds. Occ. Pap. Mus. Zool., Univ. Michigan, 719:1–21. First Paraguayan records for seven species of birds (Bubulcus ibis, Otis atricapillus, Caprimulgus longirostris, Phaethornis pretrei, Automolus rectirostris, Amaurospiza moesta, and Emberizoides ypiranganus) are discussed. New distributional records for 19 species rarely reported from Paraguay are presented, and information on the biology or systematics of several other species are noted. Weights of 273 species of Paraguayan birds are appended.

Key words: birds, distribution, Paraguay, South America, systematics, weights.

### INTRODUCTION

Between 1931 and 1942, the University of Michigan Museum of Zoology received 4942 Paraguayan birds collected by Alberto Schulze and his assistants. Most of these specimens were donated by the late William G. Fargo, and some of this material was discussed by Brodkorb in a series of short papers (1935; 1937a, b, and c; 1938a, b, and c; 1939a, b, and c; 1941a and b). In 1935, 105 bird skins from the collection of F. Shade at Villarrica came to this Museum as part of a large collection purchased from Charles D. Klotz. An additional 1167 Paraguayan birds (1053 preserved as skeletons) were added to the collection through the work of field parties led by Philip Myers in the years 1976 through 1979. It was my pleasure to spend two periods, I July to 8 August, 1978, and 25 June to 6 August, 1979, with this group.

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A major objective was to obtain the skeletal material mentioned above, but working with a team of mammalogists lent a bias to the collecting, which differs from that associated with collecting by ornithologists. The use of mammal traps, especially in marshes, and of mist nets set at night for bats, plus night hunting, yielded specimens of species represented poorly or not at all in the earlier collections. Finally, approximately 350 birds (about two-thirds preserved in fluid, one-third as skeletons, and six as study skins) were received from Steven M. Goodman and Michael W. Nachman in late 1988. These were collected between 10 September and 15 October 1988 on a round trip on the Río Paraguay between Asunción and near Bahía Negra. Several species new to Paraguay taken on this trip in the Dpto. Alto Paraguay will be the subject of a separate report (Hayes and Goodman, in prep.).

The specimens taken since 1975, plus a few specimens from the earlier collections, form the basis for this report. The rails of the genus *Laterallus* taken in the course of Myers' expeditions have already been reported (Myers and Hansen, 1980; Storer, 1981). Collecting localities for the 1978 and 1979 trips can be found in Myers and Carleton (1981) or Myers and Wetzel (1983); most other localities, including those of Goodman and Nachman, are listed by Paynter (1989).

This report includes the first Paraguayan records for seven species, distributional data on 19 species rarely reported from the country, and information on the biology or systematics of several other species. Information for species in the annotated list includes localities, dates, sex and condition of the gonads, and weights. The Appendix contains weights of 273 species not included in the annotated list.

The acronyms used for museums mentioned in the text are: MNHNP, Museo Nacional de Historia Natural de Paraguay; UMMZ, University of Michigan Museum of Zoology; USNM, National Museum of Natural History, Smithsonian Institution.

### ANNOTATED LIST

Rhea americana, Greater Rhea

Groups of up to eight rheas were seen several times in the course of our stay at Ea. San Ignacio, 24 km NNW of Carayaó, Dpto. Caaguazú. Here, they frequented the relatively little grazed palm savanna. The soil in this area is light gray, without the red color characteristic of much of eastern Paraguay, and these rheas were not

tinged with reddish, a feature used by Brodkorb (1939b) to characterize the rheas of eastern Paraguay as *R. a. nobilis*. This reddish coloration may be adventitious and is not characteristic of all the specimens in Brodkorb's series (Storer, 1988).

Crypturellus tataupa, Tataupa Tinamou

Males (184, 208, 214 g); female (240 g).

Specimens of this tinamou collected both in the Chaco and in eastern Paraguay had coral-red bills. The description in Meyer de Schauensee (1970:6) is ambiguous on this point.

Podiceps major, Great Grebe

Dpto. Presidente Hayes, Riacho [Río] Negro, 235 km W, 24 June and 7 September 1939. Two males, adult and large young (growing remiges, wing 120 mm, tarsus 57.6 mm).

First recorded for Paraguay by Schlegel (1867:38). The only other records that are alleged to apply to this country are two specimens in the USNM, no. 59,896, an unsexed adult (probably a female) and no. 59,894, a partly grown downy young (tarsus 41.3 mm). Both are from "Paraguay, Santa Fe, Río Salado." The young was taken in July 1855; the adult is undated. The Río Salado of Paraguay runs between the departments of Central and La Cordillera, emptying into the Río Paraguay a few miles upstream from Asunción. I can find no town of Santa Fe along it. These birds probably came from the much larger Río Salado of Argentina, which empties into the Río Paraná at the city of Santa Fe, where the Great Grebe was reported as common by Burmeister (1860:267).

The adult from west of Riacho Negro agrees with birds of the nominate race (Manghi, 1984) in measurements and in the absence of a well-defined collar.

Bubulcus ibis, Cattle Egret

We did not see this species in 1978 but found it common in 1979. On July 1, we observed between 300 and 400 in four or five groups between Asunción and Coronel Oviedo. Other flocks were seen in the valley of the Arroyo Hondo, ca. 15 km NNE of Carayaó. Small groups of up to 20 or 30 were observed near Juan de Zalazar and at Ea. La Golondrina, 24 km E of Villa Hayes, in the Chaco. The species now appears to be well established in cattle country in Paraguay.

Ixobrychus exilis, Least Bittern

In 1979, a female of this species was brought alive to Mrs. Philip Myers, Sr., in Asunción, where it was kept alive for some time. After it died, it was frozen, and I skinned it on June 26. According to Mrs.

Myers, the bird was found in Paraguay, but the exact locality is not known. The bird is typical of the South American subspecies, *I. e. erythromelas* (Vieillot), which was based on Azara's description of a bird from Paraguay. Laubmann (1939:98) says that museum specimens from Paraguay are evidently lacking.

There is an immature female of this form in the collection of the USNM, taken in Paraguay (precise locality not recorded) in February, 1939, by H. S. Bender (no. 390,678). I have not examined this specimen.

Theristicus caerulescens, Plumbeous Ibis

Dpto. Presidente Hayes, Juan de Zalazar, 8 km NE, 29 July 1979. Male (1760 g).

This species was fairly common in the Chaco. The bird collected had the remains of crabs in the stomach. Laubmann (1939:100) reported the remains of fish, snails, and mussels in stomachs of these birds.

Falco deiroleucus, Orange-breasted Falcon

A male in immature plumage was received from Alberto Schulze and was catalogued as a Peregrine Falcon, *Falco peregrinus*. It was later correctly identified, but the entry in the catalogue was not changed. It and a Peregrine Falcon from Paraguay were stolen from the UMMZ. The Orange-breasted Falcon was subsequently recovered, but the label had been removed. Data from the catalogue show that the Orange-breasted Falcon was either UMMZ no. 75,316 or 93,185. Fortunately, Clayton White had examined the Peregrine, and his records show that it was no. 93,185. Thus, by the process of elimination, the Orange-breasted Falcon is UMMZ no. 75,316, taken 46 km E of the Paraguay River, near Horqueta, Dpto. Concepción, on 24 February 1934, by Alberto Schulze, original no. 670.

This rare species has previously been recorded in Paraguay from Puerto Bertoni, Dpto. Alto Paraná (Bertoni, 1901:168) and Orloff, Dpto. Boquerón (Hellmayr and Conover, 1949:303).

Falco peregrinus, Peregrine Falcon

Dpto. Boquerón or Alto Paraguay, 195–200 km W of Puerto Casado, 20 March 1937. Adult female.

Dpto. Boquerón or Nueva Asunción, 240 km W of Puerto Casado, 29 April 1939. First-year female.

These birds were taken by Alberto Schulze and his coworkers, who collected near the railroad line which runs west from Puerto Casado along the northern border of Dpto. Boquerón and the southern border border of Dpto.

der of Dptos. Alto Paraguay and Nueva Asunción. A male Peregrine was taken at the same locality and on the same date as the adult female, but it was stolen from the UMMZ.

The two remaining specimens, which were catalogued as F. p. anatum, are here referred to the race cassini, as were two Paraguayan specimens reported by Steinbacher (1962:45). The wing length (arc) of the adult is approximately 347 mm, that of the immature, 346. They are thus within the size range of both cassini and tundrius. Unlike birds characterized by White (1968) as tundrius, they have very broad moustachial stripes, and the immature bird has very narrow light edgings to the dark crown feathers. The adult (UMMZ 93,186) is in a late stage of wing molt; primary 9 is between 50 and 60 mm short of full growth and primary 10 is very short. Assuming that the wing molt of adult females starts during incubation (Cade, 1960) and lasts 128-188 days (Cramp and Simmons, 1980:377), this bird's molt schedule would be in agreement with the October-December breeding season for Peregrines in southern Argentina (Ellis and Garat, 1983, table 1). The plumage of the immature bird (UMMZ 105,276) is worn, but no molt is evident. The underparts of this bird are not heavily streaked on a rufous background like those of two immature cassini from the Falkland Islands in the UMMZ. Instead, it resembles the "more heavily marked nestling" shown by Ellis and Garat (1983, frontispiece, upper right). However, the back, and especially the head and tail, are dark, without the light markings shown in the lower left figure of the same plate. It is evident that Peregrine Falcons nesting in southern South America vary in color far more than is generally recognized (Clayton M. White, pers. comm.).

Larus maculipennis, Brown-headed Gull

Dpto. Paraguarí, Sapucay, 17 August 1907. First-year female, collected by W. Foster.

Gulls are evidently rare in Paraguay. Bertoni (1919:256) listed a specimen of this species taken at Puerto Bertoni in July of 1916. We saw none in the course of our field work and received none from Schulze.

According to Dwight (1925:272) the Gray-headed Gull, Larus cirrocephalus, nests in Paraguay, but Dwight did not document this statement. Short (1975:219) wrote that this species "breeds... inland along the Paraguay-Paraná river" but offered no documentation. The only published record I can find of specimens of this species taken in Paraguay is by Schlegel (1863:36), who listed three specimens taken in 1863. One is an adult in breeding plumage with a brown head and

the second an adult in breeding plumage with a light gray head. The first is presumably *maculipennis*, which Schlegel placed in the synonymy of *cirrocephalus* (*loc. cit.*), and the second, *cirrocephalus*. The third specimen is a young bird beginning to acquire nuptial plumage and could not be identified to species based on Schlegel's information. G. F. Mees (*in litt.*) informed me, however, that the three specimens are still in the Rijksmuseum van Natuurlijke Historie in Leiden, that the two adults are indeed *L. maculipennis* and *L. cirrocephalus*, and that the immature is *maculipennis*.

There are skins of two females of *cirrocephalus* in the USNM (nos. 57l,351 and 571,352). They were taken by H. S. Bender on 1 September 1940, 120 km southeast of Orloff. On the label of the first is a note in German stating that the birds were taken in an area of large salt lakes, where many water birds live. Bender found no evidence that the gulls were breeding.

Orloff is in the Dpto. Boquerón, but a locality 120 km to the southeast would be in the Dpto. Presidente Hayes. Laguna Salada, a large salt lake, lies 90 km by air southeast of Orloff. By road, it would be approximately 120 km from Orloff. This is probably where the gulls were taken.

López (1985:12) reported seeing 10 *L. cirrocephalus* on the Río Paraguay in the department of Alto Paraguay between 18 October and 4 November, 1984.

Guira guira, Guira Cuckoo

Dpto. Caaguazú, Carayaó, 24 km NNW, 3 July 1979. Three males (181, 182, and 172 g; testes 9 X 4.5, 12 X 5.5; 11.5 X 5.5; 12 X 6.3, ca. 12 X 6 mm).

Dpto. La Cordillera, Tobatí, 1.6 km S, 31 August 1978. Female (107 g; ovary 8 X 5 mm, largest follicle less than 1 mm).

Dpto. Alto Paraguay, Estancia Inmaculada Concepción, Bahía Negra, 17 km N, 25 September 1988. Female (128 g).

Near Carayaó, these cuckoos were observed sunbathing as described by Durrell (1956:28). The mechanism for heat absorption resembles that of the smaller grebes (Storer et al., 1976), in that the white feathers of the lower back have black bases and there is black skin under these feathers, both of which presumably absorb solar energy. A somewhat similar mechanism has been reported for the Greater Roadrunner (Geococcyx californianus) by Ohmart and Lasiewski (1971).

Strix hylophila, Rusty-barred Owl

Dpto. Itapúa, San Raphael, 8 km N, 23 July 1978. Female (450 g, very fat; ovary 13 x 6 mm, 2 mm follicles).

This bird was collected by R. S. Voss while he was night hunting. According to Laubmann (1939:228), this rarely-taken owl was previously recorded from Paraguay by Bertoni.

Otus atricapillus, Black-capped Screech Owl

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 11 July 1979. Male (138 g; testes, left, 7 x 4, right, 5 x 4 mm; extent of wings with feathers, 625 mm).

Although this rare owl is often listed as occurring in Paraguay, this appears to be the first valid record. Laubmann (1939:227) could find no Paraguayan record and suggested that the basis for listing, the bird from that country was Bertoni's (1914:44) record of the species from the Argentine side of the Río Paraná. The above specimen was caught in a mist net, which it had entered, apparently to take an already-captured bat (Artibeus sp.). This owl resembles the smaller Tropical Screech Owl (Otus choliba) in plumage, but is recognizable by its dark orange-brown, not yellow, eyes and nearly solid black crown.

M. S. Foster took one on 5 September 1980 (USNM 576,981) and another on 6 September 1980 (USNM 555,942) at the Parque Nacional Cerro Corá, Dpto. Amambay. The first was saved as a skin, the second as a skeleton. There is also a skin in the MNHNP taken at the Parque Nacional Cerro Corá, Dpto. Amambay, on 6 September 1980, by G. D. Kraus.

Aegolius harrisii iheringi, Buff-fronted Owl

Dpto. Presidente Hayes, Campo Esperanza, 11 September 1936. Male.

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 15 July 1979. Male (147 g; testes, left, 7 x 5, right, 7 x 4.5 mm; expanse 519 mm).

The few earlier Paraguayan records for this infrequently collected owl are listed by Laubmann (1939:299). The specimen from near Curuguaty was taken in a mist net set at the edge of the cañadón over a growth of fruiting terrestrial bromeliads. A small rice rat (Oryzomys fornesi) was trapped among these fruits. The stomach of the owl contained the remains of the same species of Oryzomys.

Nyctiphrynus ocellatus ocellatus, Ocellated Poor-will

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 21 August 1978. Female (38 g).

Previously recorded from Paraguay only from Puerto Bertoni and

Iguazú by Bertoni (1914:46). This bird was taken in a mist net set for bats across a track in the forest. It is in the red phase.

Caprimulgus longirostris longirostris, Band-winged Nightjar

Dpto. Presidente Hayes, Juan de Zalazar, 8 km NE, 30 July - 1 August 1979. Four males (44.5, 45, 49, 50 g), three females (42, 44.5, 48 g), all very fat.

Although previously unreported from Paraguay, this nightjar was fairly common at this locality. Three were taken near an artificial lake and four in heavily grazed grassland with a few scattered shrubs. All were collected on the ground at night. None had enlarged gonads or was heard to call. It is likely that they were wintering birds from farther south.

There are three additional specimens in the NMHNP taken in the Parque Nacional Teniente Enciso, Dpto. Nueva Asunción, on 30 August 1982, by N. López.

Caprimulgus sericocaudatus, Silky-tailed Nightjar

Dpto. Itapúa, San Raphael, 8 km N, 22 July 1978. Male (83 g, very fat; testes, left, 6.5 X 4, right, 8.5 X 5.5 mm).

The only previous records are Bertoni's (1919:256) from Puerto Bertoni and Iguazú, and Partridge's (1956:170) from Capitán Meza (Río Alto Paraná). Myers collected this bird at night on a stub 6–9 m high in the forest. On several nights we heard calls that we attributed to this species. According to K. C. Parkes (pers. comm.), W. H. Partridge only collected this species on the ground in Misiones, Argentina.

Phaethornis eurynome, Scale-throated Hermit

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 19 and 24 August 1978. Male (4 g), sex?

Dpto. Itapúa, San Raphael, 3.5 km E and 8 km N, 3, 26, and 30 July 1978. Three males (4.0, 4.7, and 5.1 g).

Dpto. Paraguarí, Parque Nacional Ybycui, 16 June 1979. Sex? (4 g). The only previous Paraguayan record appears to be that of Bertoni

(1901:54) from Alto Paraná. All of our specimens were taken in mist nets, in two instances set across streams. The lower mandible of this species is yellow.

There is also a specimen in the MNHNP taken 10 km from Katueté, Dpto. Canendiyú, on 18 February 1984, by N. López.

Near Curuguaty, I watched a hermit (species?) investigating a line of bright pink trap markers. The color of these ribbons closely matched that of the bracts of a winter-blooming bromeliad (Billbergia

nutans Regel), which was one of the principal sources of nectar for several species of hummingbirds at this season. Subsequently, we netted several hummingbirds by luring them into a net with pieces of trap marker tied approximately 1 to 1.5 m from the net on each side.

Phaethornis pretrei, Planalto Hermit

Dpto. Amambay, Cerro Amambay, Capitán Bado, 725 m, 26 August and 24 September 1938. Five males.

Dpto. La Cordillera, Tobatí, 1.6 km by road S, 8 and 13 July 1978. Two males (? and 5 g).

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 23 August 1978, 18 July 1979, two males (4 and 5.3 g); 13 July 1979, female (5.0 g).

Schulze's specimens from Cerro Amambay appear to constitute the first Paraguayan record for this species. Short (1975:239) wrote that this species "may occur in Western Paraguay, although there are no records for that country." We found both hermits in forested areas in eastern Paraguay but did not encounter either in the Chaco. The presence of this species at Tobatí suggests that it is less dependent on heavy forest than is *eurynome*. We found no evidence of breeding in our specimens; the males' testes measured 2 to 3 mm, the female's ovary 3.5 X 3 mm. The lower mandible in this species is coral red.

There are two additional specimens in the MNHNP taken at the Parque Nacional Cerro Corá, Dpto. Amambay, 18 September 1980, by G. D. Kraus and 12 July 1984, by N. López; another specimen recorded from near Paraguarí, Dpto. Paraguarí, is cited by Contreras (1986).

Stephanoxis lalandi, Black-breasted Plovercrest

Dpto. Alto Paraná, Puerto Gibaja, 19 August to 15 September 1940. Three males, one taken 9 September, had testes very enlarged.

Dpto. Itapúa, San Rafael, 8 km N, 24 and 27 July 1978. Male (3.4 g; testes 3.5 X 3, 2.5 X 2 mm), ?female (3.2 g).

Like the next two species, this hummingbird appears only to be known from Bertoni's records (Alto Paraná, 1901:55, 194). We found them not uncommon near San Rafael, where they visited the winter-blooming bromeliad, *Billbergia nutans*.

Thalurania glaucopis, Violet-capped Woodnymph

Dpto. Alto Paraná, Puerto Gibaja, 20 August 1940. Male.

Dpto. Itapúa, San Rafael, 3.5 km E, 3 August 1978. Female (3.5 g, ovary 2.5 X 2.5 mm).

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 19 August 1978, 7 to 18 July 1979, six males (4.0 to 4.7 g, testes 1.5 to 2.5 mm); 12 and

20 July 1979, two females (3.5 and 4.0 g, ovaries 2.5 to 3.5 mm); 17 August 1978, ?female (4 g).

Reported by Bertoni from Alto Paraná and Puerto Bertoni (1901:62, 194). This species was common near Curuguaty, where it visited *Billbergia*.

Leucochloris albicollis, White-throated Hummingbird

Dpto. Itapúa, San Rafael, 8 km N and 5 km E, 27 and 31 July 1978. Male (5.6 g, testes 2.5 mm). Female (5.2 g, ovary 4 X 3 mm).

Reported by Bertoni from Alto Paraná (1901:64, 194) and by Laubmann (1940:15) from several localities. There is also a specimen in the MNHNP taken at the Parque Nacional Defensores del Chaco, Agua Dulce, Dpto. Chaco, 6 August 1980, by G. D. Kraus.

Andigena bailloni, Saffron Toucanet

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 16 August 1978. Male (140 g, testes 4 X 3 mm).

G. K. Creighton took this bird in forest, where it was seen with another individual. This rare toucan apparently has not been taken in Paraguay since Bertoni's (1919:256) record from Puerto Bertoni.

Dryocopus galeatus, Helmeted Woodpecker

Dpto. Amambay, Cerro Amambay, Capitán Bado, 725 m, 27 August 1938. Male.

Dpto. Amambay, Cerro Amambay, Capitán Bado, 40 km WSW, 500 m, 28 October 1938. Female.

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 9 July 1979. Female (124 g, ovary 6 X 5 mm).

This uncommon species has been recorded from Alto Paraná (Bertoni, 1901:191) and Sapucay (Chubb, 1910:284).

Automolus (Hylocryptus) rectirostris, Chestnut-capped Foliage-Gleaner Dpto. San Pedro, Concepción, 11 km S, 16 September 1988. Female (46.5 g).

S. M. Goodman collected this bird on a bank 10 m directly above the Río Paraguay and 15 m from the edge of the bank. The vegetation in the immediate area was thorn scrub with some trees ca. 20 m tall. This bird and a second of the same species were foraging in the leaf litter.

This is apparently the first Paraguayan record for this species.

Chamaeza campanisona, Short-tailed Antthrush

Dpto. Itapúa, San Rafael, 3.5 km E, 2 August 1978. Male (90 g; testes 4 X 2.5, 2.5 X 2 mm).

This bird was caught in a mist net set across a stream. The pectoral muscles were very pale, like those of most galliform birds. Convergence toward the galliform condition is also seen in the narrow sternum with deep notches. Presumably, the bird is adapted for short, rapid flights.

Hirundinea ferruginea, Cliff Flycatcher

Dpto. Alto Paraná, Puerto Gibaja, 4 October 1940. Male.

Dpto. La Cordillera, 1.6 km by road S of Tobatí, 13 July 1978. Sex? (30 g, very fat).

There are also two specimens in the MNHNP taken at Tobatí, 3 August 1986, by N. López.

According to F. E. Hayes (in litt.), this species is "apparently common along the cliffs just south of Tobatí," where we found a single bird in 1978.

The few previous records for Paraguay are summarized by Laubmann (1940:101).

Anthus chacoensis, Chaco Pipit

Dpto. Guairá, Villarrica, May 1924. Male, collected by F. Schade.

This appears to be the second Paraguayan record for this little-known bird. The other locality, Puerto Pinasco (Zimmer, 1952:34), is ecologically pantanal, a wet subunit of the Chaco (Short, 1975:174). Villarrica is in south-central eastern Paraguay and still farther from the Chaco. The English name is thus inappropriate because the bird is only known to nest in the Province of Córdoba, Argentina, and is by no means confined to the Chaco in winter.

Short's statement (1975:293) to the effect that should *chacoensis* prove specifically different from *lutescens*, "it would form a superspecies with it" is negated by his finding that the two are sympatric (1976:13). Pipits are notoriously difficult to identify, but the length and shape of the hind claw, by which *chacoensis* and *lutescens* differ markedly, is considered "one of the most reliable aids to specific identification" in *Anthus* (Hall, 1961:249).

Amaurospiza moesta, Blackish-blue Seedeater

Dpto. Alto Paraná, Puerto Gibaja, 3 August to 6 September 1940. Two males, two females.

Dpto. Itapúa, San Rafael, 8 km W, 29 July 1978. Female (12.5 g, ovary 4 X 2 mm).

This species has previously been reported from Capitan Meza, Dpto. Alto Paraguay, by Partridge (1953:87–88).

Haplospiza unicolor, Uniform Finch

Dpto. Itapúa, San Rafael, 8 km N and 3.5 km E, 25 July to 4 August 1978. Three males (13, 16, and 16 g; left testis 4.5 X 4 to 7.5 X 5.5 mm), two females (15 and 15 g, follicles to 2.5 mm).

Dpto. Paraguarí, Parque Nacional Ybycui, 18 June 1979. Male? (13 g).

This finch was previously reported from Puerto Bertoni (Bertoni, 1907:2) and Sapucay (Chubb, 1910:639). There are five additional specimens in the MNHNP, four taken at the Parque Nacional Ybycui (one 18 March 1981 by R. T. White, two 24 March 1981 by M. R. Rolón, and one in 1983 by C. Bogado), and one at Capitán Miranda, Dpto. Itapúa, 25 September 1982 by N. López.

Our specimens were mist-netted very close to the ground in dense undergrowths of bamboo, where we also found *Picumnus temminckii*, *Synallaxis albescens*, *Syndactyla rufosuperciliata*, *Drymophila malura*, *Pyriglena leucoptera*, and *Pyrrhocoma ruficeps*.

Emberizoides ypiranganus, Lesser Grass-Finch

Dpto. Canendiyú, Curuguaty, 13.3 km by road N, 19 July 1979. Male (22.5 g, little fat; wing (arc) 67, tail (worn) 90 mm; testes 2.5 X 2 mm).

I can find no published records for this species in Paraguay.

In the course of our two-week stay, 7 to 22 July 1979, near Curuguaty, we occasionally flushed birds that were probably this species in the drier parts of the cañadón. The birds would fly a short distance and dive into the thick grass. None was observed perched or singing. In contrast, Wedge-tailed Grass-Finches (*E. herbicola*) were found singing 24 km NNW of Carayaó on 2 and 3 July; and a male (28.5 g; wing 77 mm; left testis 4 X 2.5 mm) and a female (27 g; wing 73, tail 99.5 mm; ovary 5 X 3.5 mm) were taken. This suggests that the onset of breeding in *herbicola* may precede that of *ypiranganus*.

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## APPENDIX WEIGHTS OF PARAGUAYAN BIRDS

All but a few weights are in grams. Weights of small birds were sometimes taken with balances weighing to 0.1 g and sometimes with balances weighing to the nearest gram. A few large birds were weighed in pounds and ounces. For these reasons, variances were not calculated. In the following list, M = male, M? = probable male, F = female, F? = probable female, and ? = unsexed bird. The sequence of families follows that in Meyer de Schauensee (1970). Weights of birds included in the annotated list are not listed here.

Tinamus solitarius, Solitary Tinamou. M 1200.

Crypturellus obsoletus, Brown Tinamou. F 470, 550.

Syrigma sibilatrix, Whistling Heron. F 425.

Ardea cocoi, White-necked Heron. M 2.2 kg, F 4 lb 6 oz.

Ardea alba, Great Egret. M 1150.

Butorides striatus, Striated Heron. M 186.

Tigrisoma lineatum, Rufescent Tiger-Heron. M 1010, 2 lb 2 oz; F 815; ? 2 lb 6 oz.

Ciconia maguari, Maguari Stork. M 5.7 kg.

Theristicus caudatus, Buff-necked Ibis. M 3 lb 1 oz; F 1350, 2 lb; ? 1410.

Mesembrinibis cayennensis, Green Ibis. F 825.

Phimosus infuscatus, Bare-faced Ibis. F 435.

Plegadis chihi, White-faced Ibis. F 410.

Coragyps atratus, Black Vulture. ? 3 lb 2 oz.

Cathartes aura, Turkey Vulture. M 2 lb 4 oz.

Cathartes burrovianus, Lesser Yellow-headed Vulture. M 2 lb 5 oz, F 2 lb 7 oz.

Rostrhamus sociabilis, Snail Kite. M 305, 315; F 325.

Buteo magnirostris, Roadside Hawk. M 289, M? 238.

Buteogallus meridionalis, Savanna Hawk, M 825, F 730.

Buteogallus urubitinga, Great Black Hawk. F 5 lb 6 oz, F? 1350.

Geranospiza caerulescens, Crane Hawk. M 405, 425.

Micrastur ruficollis, Barred Forest-Falcon. M 150, F 175.

Milvago chimachima, Yellow-headed Caracara. M 255, F 315.

Polyborus plancus, Crested Caracara. M 4 lb 2 oz, ? 2 lb 6 oz.

Falco rufigularis, Bat Falcon. F 194.

Falco femoralis, Aplomado Falcon. M 238.

Falco sparverius, American Kestrel. F 102, 111.

Ortalis canicollis, Chaco Chachalaca. M 485, 510, 590; F 460, 500, 505.

Penelope obscura, Dusky-legged Guan. M 960.

Pipile jacutinga, Black-fronted Piping-Guan. F 1.7 kg, ? 2.0 kg.

Aramus guarauna, Limpkin. M 3 lb 2 oz, ? 1.0 kg.

Aramides cajanea, Gray-necked Wood-Rail. F 330.

Aramides ypecaha, Giant Wood-Rail. M 860, F 765.

Porzana albicollis, Ash-throated Crake. M 104, 116, 130; F 98, 103.

Laterallus melanophaius, Rufous-sided Crake. M 56.5, F 46.

Laterallus exilis, Grav-breasted Crake. F 27.

Laterallus leucopyrrhus, Red-and-white Crake. M 36, 47, 49, 51, 52; F 34, 45.5, 46.

Laterallus xenopterus, Rufous-faced Crake. F 51, 52.

Jacana jacana, Wattled Jacana. M 73, 87, 91; M? 95; F 118, 131, 140.

Vanellus chilensis, Southern Lapwing. M 242, 263, 275; F 232, 236, 251.

Pluvialis dominica, American Golden Plover. M 123; F 111, 119.

Charadrius collaris, Collared Plover. M 29.5, F 33.5.

Tringa solitaria, Solitary Sandpiper. M 45, F 39.

Tringa flavipes, Lesser Yellowlegs. F 75; ? 67, 71, 81, 88.

Actitis macularia, Spotted Sandpiper. F 40.5.

Gallinago paraguayiae, Paraguayan Snipe. ? 116.

Sterna simplex, Large-billed Tern. M 246, 255.

Sterna superciliaris, Yellow-billed Tern. M 53, 59; F 54, 56, 59.

Rynchops nigra, Black Skimmer. M 410.

Columba picazuro, Picazuro Pigeon. M 345.

Columbina talpacoti, Ruddy Ground-Dove. M 44, ? 48.

Columbina picui, Picui Ground-Dove. M 45; F 40, 40, 40.5, 42, 51.5; ? 42, 44.

Claravis pretiosa, Blue Ground-Dove. F 60.

Leptotila verreauxi, White-tipped Dove. M 168, 171, 172, 173, 178, 185, 192, 200; F 141, 152, 173, 184, 188, 195.

Leptotila rufaxilla, Gray-fronted Dove. M 109 (emaciated), 170, 178, 190; F 190.

Geotrygon montana, Ruddy Quail-Dove. M 140.

Geotrygon violacea, Violaceous Quail-Dove. M 109, F 101.

Ara maracana, Blue-winged Macaw. M 266, F 246.

Aratinga leucophthalmus, White-eyed Parakeet. M 179.

Nandayus nenday, Black-hooded Parakeet. M 125; F 120, 125, 141.

Pyrrhura frontalis, Reddish-bellied Parakeet. M 73.5, 82, 83, 83; F 71, 72, 73, 77, 82.

Myiopsitta monacha, Monk Parakeet. M 83, 100; F 78, 87, 104.

Forpus xanthopterygius, Blue-winged Parrotlet. M 26.

Piaya cayana, Squirrel Cuckoo. ? 137.

Crotophaga ani, Smooth-billed Ani. F 99.

Tyto alba, Barn Owl. F 500.

Otus choliba, Tropical Screech-Owl. M 108, 112, 121, 127, 130; F 116, 117, 124, 125, 129, 137, 142.

Glaucidium brasilianum, Ferruginous Pygmy-Owl. M 52, 52, 59, 59, 60, 60, 65, 65, 65.5, 74; F 61, 69, 70, 73, 76, 78.5.

Ciccaba virgata, Mottled Owl. F 350.

Nyctiprogne leucopyga, Band-tailed Nighthawk. M 40.0.

Podager nacunda, Nacunda Nighthawk. F 147.

Nyctidromus albicollis, Pauraque. M 68, 71, 72, 88, 96; F 72, 73, 74, 79, 84, 94.

Caprimulgus rufus, Rufous Nightjar. M 94.

Caprimulgus parvulus, Little Nightjar. M 34; F 37.5, 41, 41.5, 45.

Hydropsalis brasiliana, Scissor-tailed Nightjar. M 50, 55, 57, 58, 66; F 45, 56, 56, 62, 64, 66, 66.5.

Chlorostilbon aureoventris, Glittering-bellied Emerald. M 2.9, 3.5, 3.6; M? 3.0, 3.7, 4.0; F 2.9.

Hylocharis chrysura, Gilded Hummingbird. M 3.8, 4.0, 4.0, 4.0, 4.2, 4.4, 4.5, 4.6, 4.7, 4.7, 4.8, 4.9, 4.9; F 3.6, 4.0, 4.0, 4.2, 4.4, 4.6.

Amazilia versicolor, Versicolored Hummingbird. M 3.0, 3.9, 3.9, 4.1; F 3.4, 3.7; ? 3.0.

Heliomaster furcifer, Blue-tufted Starthroat. M 5.2.

Trogon rufus, Black-throated Trogon. M 55, F 56.

Trogon surrucura, Surucua Trogon. M 66; F 62, 64.

Trogon curucui, Blue-crowned Trogon. M 39, 57, 57, 59; M? 58, 61, 63.

Ceryle torquata, Ringed Kingfisher. M 278, 292.

Chloroceryle amazona, Amazon Kingfisher. M 111, 145, 150; M? 113.

Chloroceryle americana, Green Kingfisher. M 32, 33, 35; M? 25.5; F 29, 35, 36, 37.

Chloroceryle aenea, Pygmy Kingfisher. M 14.0.

Baryphthengus ruficapillus, Rufous Motmot. M 120, 137; F 125.

Notharchus macrorhynchus, White-necked Puffbird. M 91.

Nonnula rubecula, Rusty-breasted Nunlet. F 17.

Pteroglossus castanotis, Chestnut-eared Acacari. M 220, F 239.

Ramphastos dicolorus, Red-breasted Toucan. M 355.

Picumnus temminckii, Ochre-collared Piculet. M 10.5, 11; F 11, 11, 11.

Picumnus cirrhatus, White-barred Piculet. M 7, 8.6, 8.8, 9, 9; M? 7.2; F 8.0, 8.2, 9.2, 9.5, 9.6, 10.0, 10.5; F? 7.4, 7.8; ? 6.8.

Colaptes campestris, Campo Flicker. F 155.

Colaptes campestroides, Field Flicker. F 172.

Colaptes melanochloros, Green-barred Woodpecker. M 123, F 110.

Colaptes melanolaimus, Golden-breasted Woodpecker. M 129; F 104, 116, 120.

Piculus chrysochloros, Golden-green Woodpecker. M 62; F? 65, 69.

Celeus flavescens, Blond-crested Woodpecker. M 114, 120.

Celeus lugubris, Pale-crested Woodpecker. M 134, 138, 157; M? 97.

Dryocopus lineatus, Lineated Woodpecker. M 182, 194.

Melanerpes flavifrons, Yellow-fronted Woodpecker. M 53, 60; F 49, 49.5.

Melanerpes candidus, White Woodpecker. M 107, 123.

Melanerpes cactorum, White-fronted Woodpecker. F 31, 33, 35.5.

Veniliornis spilogaster, White-spotted Woodpecker. M 36, 41; F 33, 35, 36.5.

Veniliornis passerinus, Little Woodpecker. M 34, 37; F 33.

Picoides mixtus, Checkered Woodpecker. F 30.5.

Phloeoceastes leucopogon, Cream-backed Woodpecker. M 205, F 237.

Phloeoceastes robustus, Robust Woodpecker. M 294, F 249.

Dendrocincla fuliginosa, Plain-brown Woodcreeper. F 29.

Sittasomus griseicapillus, Olivaceous Woodcreeper. M 12, 12, 12.5, 12.5, 12.5, 13.5, 13.5, 13.5, 14, 14, 14; F 10, 11, 11.5, 12, 12, 12, 12, 13; ? 11, 12.

Xiphocolaptes albicollis, White-throated Woodcreeper. M 120, F 130.

Xiphocolaptes major, Great Rufous Woodcreeper. M 147; F 155, 162.

Dendrocolaptes platyrostris, Planalto Woodcreeper. M 56.5, 58, 58.5, 59.5; F 58.5, 61, 62, 66; ? 59.

Lepidocolaptes angustirostris, Narrow-billed Woodcreeper. M 23, 26, 27.0, 27, 29.5, 30, 30, 30.5, 31.5; F 21.5, 23, 24.0, 27, 27.5, 28, 28.5, 30, 31.5, 32, 33.5, 39.5.

Lepidocolaptes fuscus, Lesser Woodcreeper. M 17, 18, 19.

Campyloramphus trochilirostris, Red-billed Scythebill. M 37, 43, 51; F 46.0.

Furnarius rufus, Rufous Hornero. M 41.5, 43, 43.3, 44, 44, 45; F 37.0, 39.5, 40.5, 40.5, 41.5, 41.5, 42.0, 42.2, 43, 44, 46.0, 47, 48.5; ? 47.

Furnarius cristatus, Crested Hornero, M 25.5, 26, 26.5, 26.5.

Schoeniophylax phryganophila, Chotoy Spinetail. M 13.5, 16.5.

Synallaxis ruficapilla, Rufous-capped Spinetail. M 12, 13, 13.5, 14, 14; F 12.5, 14.

Synallaxis frontalis, Sooty-fronted Spinetail. M 14, 15, 19.5.

Synallaxis spixi, Chicli Spinetail. F 15.5.

Synallaxis albescens, Pale-breasted Spinetail. M 13; F 12.5, 13.

Synallaxis gujanensis, Plain-crowned Spinetail. M 12.0, F 16.0.

Synallaxis cinerascens, Gray-bellied Spinetail. M 12.5; F 11.5, 12, 12.5, 13.

Certhiaxis cinnamomea, Yellow-throated Spinetail. M 12.0, 12.0, 12.5, 14.5 14.5; F 11.5, 13.5, 14, 16.5; ? 15.

Cranioleuca obsoleta, Olive Spinetail. F 11.5; ? 8, 10.

Phacellodomus sibilatrix, Little Thornbird. M 14.

Phacellodomus rufifrons, Rufous-fronted Thornbird. F 24.5.

Phacellodomus ruber, Greater Thornbird. M 32.0, 33.0, 33.5, 36.0, 36; F 23.5, 28, 29.5, 31, 33, 33, 33.5, 33.5, 36; ? 32.5.

Annumbius annumbi, Firewood-Gatherer. F 37.

Syndactyla rufosuperciliata, Buff-browed Foliage-Gleaner. M 24, 24, 25, 26, 26, 27; F 21.5, 22, 24.

Philydor atricapillus, Black-capped Foliage-Gleaner. M 18, F 19, ? 19.

Philydor lichtensteini, Ochre-breasted Foliage-Gleaner. M 21; F 18, 19.5, 19.5.

Philydor rufus, Buff-fronted Foliage-Gleaner. F 28.

Automolus leucophthalmus, White-eyed Foliage-Gleaner. M 34, 34; F 27; ? 30.

Xenops minutus, Plain Xenops. M 7, F 6.

Lochmias nematura, Sharp-tailed Streamcreeper. M 19, 19.5, 20, 20, 20, 21, 22, 22.5, 22.5; F 20, 21.5.

Hypoaedaleus guttatus, Spot-backed Antshrike. F 36, 41.5.

Taraba major, Great Antshrike. M 47, 48.5, 50, 50.5; F 44, 49, 52, 56.

Thamnophilus doliatus, Barred Antshrike. M 20, 23, 25.0, 25.5, 26.5, 28, 30, 31, 35; M? 20.5, 23.5, 28.0; F 21, 26.5, 28.5.

Thamnophilus caerulescens, Variable Antshrike. M 18, 18, 18.5, 18.5, 19, 19, 20; F 17, 17, 18.5, 18.5, 19, 19.5, 20, 20, 21.

Dysithamnus mentalis, Plain Antvireo. M 11, 12, 13, 13; F 10, 13, 13.

Myrmorchilus strigilatus, Stripe-backed Antbird. ? 20.

Herpsilochmus rufomarginatus, Rufous-winged Antwren. F 12, ? 19.

Formicivora rufa, Rusty-backed Antwren. M 13.

Drymophila malura, Dusky-tailed Antwren. M 10.5, 12; F 10.

Cercomacra melanaria, Mato Grosso Antbird. M 18.5, M? 19.5.

Pyriglena leucoptera, White-shouldered Fire-Eye. M 28, 28, 28, 5, 29; F 24, 24.5, 26, 27.5, 29.

Conopophaga lineata, Rufous Gnateater. M 20, 21.5, 22; F 20, 20.

Camptostoma obsoletum, Southern Beardless Tyrannulet. M 7.8, 8.0, 8.1.

Suiriri suiriri, Suiriri Flycatcher. M 16.0; F 12, 14, 16.5.

Elaenia flavogaster, Yellow-bellied Elaenia. M 20, 24, 27; F 23.5, 24, 27.

Elaenia parvirostris, Small-billed Elaenia. M 17.

Elaenia obscura, Highland Elaenia. M 32.5, 33; F 23, 27.5, 31.

Serpophaga subcristata, White-crested Tyrannulet. M 7.4, F 5.

Pseudocolopteryx sclateri, Crested Doradito. M 6.4.

Pseudocolopteryx flaviventris, Warbling Doradito. F 9.3.

Mionectes rufiventris, Gray-hooded Flycatcher. M 14.5, 15; F 12, 12.

Leptopogon amaurocephalus, Sepia-capped Flycatcher. M 12, 12, 13, 13, 15; F 10, 11, 11, 13; ? 11.

Phylloscartes eximius, Southern Bristle-tyrant. M 7.7.

Phylloscartes flaveolus, Yellow Tyrannulet. M 6.4, 7.2, 7.2, 7.6.

Phylloscartes ventralis, Mottle-cheeked Tyrannulet. M 7.9, 9.0; F 7.3, 7.6.

Corythopis delalandii, Southern Antpipit. M 14.5, 14.5, 14.5, 15, 16; F 13, 14, 15.

Hemitriccus diops, Drab-breasted Pygmy-Tyrant. M 9.8, F 8.1.

Hemitriccus margaritaceiventer, Pearly-vented Tody-Tyrant. M 6.6, 8, 8.0, 8.1, 8.1, 8.2, 8.4, 8.7, 8.8, 8.9, 9.1, 9.4, 9.4, 11.5; F 7.6, 8.1, 8.3, 8.3, 8.6, 9.0, 9; ? 7, 7.

Todirostrum plumbeiceps, Ochre-faced Tody-Flycatcher. F 5.2, 5.8.

Todirostrum cinereum, Common Tody-Flycatcher. M 7.0, F 7.8.

Tolmomyias sulphurescens, Yellow-olive Flycatcher. M 13.5, 14, 15, 17.0, 17.5; F 15.5.

Platyrinchus mystaceus, White-throated Spadebill. M 8.5, 8.8, 8.8, 9, 9.0, 9.3; F 8; ? 10.

Platyrinchus leucoryphus, Russet-winged Spadebill. M 15, 15, 15.

Myiophobus fasciatus, Bran-colored Flycatcher. M 11, ? 12.

Cnemotriccus euleri, Euler's Flycatcher. M 9, 11.

Cnemotriccus fuscatus, Fuscous Flycatcher. M 14, F 10.5(im).

Pyrocephalus rubinus, Vermillion Flycatcher. M 11.0, 11.5, 12.5; F 14.5; ? 15.0.

Xolmis irupero, White Monjita. M 26.0; F 24.5, 25.5, 25.5.

Fluvicola pica, Pied Water-Tyrant. M 11.0, 14; F 11.5, 11.5; F? 13.0; ? 13.5.

Fluvicola leucocephala, White-headed Marsh-Tyrant. F 14.5.

Colonia colonus, Long-tailed Tyrant. F 15.5, 18.5.

Gubernetes yetapa, Streamer-tailed Tyrant. M 69; F 60, 62.

Satrapa icterophrys, Yellow-browed Tyrant. M 15; F 19.5, 20.5.

Machetornis rixosus, Cattle Tyrant. M 28.5, 29.5, 31.0, 33; F 28.5, 30, 37.5.

Casiornis rufus, Rufous Casiornis. M 22; F 21.5, 22.

Sirystes sibilator, Sirystes. M 29.5, 35.2; F 28, 28.5, 28.5, 30.

Myiarchus ferox, Short-crested Flycatcher. M 24.5, 29.0, 29, 30; F 23.5, 25.5, 28.

Myiarchus tyrannulus, Brown-crested Flycatcher. M 26.0, 27.0, 27.5, 27.5, 27.5, 27.5, 28, 28, 29; F 22, 28.

Pitangus sulphuratus, Great Kiskadee. M 51, 57, 6l, 61, 62, 62, 69, 70; F 53, 56, 57, 59, 59, 59, 59, 64, 78 (very fat).

Myiozetetes similis, Social Flycatcher. M 31.

Empidonomus aurantioatrocristatus, Crowned Slaty-Flycatcher. M 22.5, 23.5, 24.5.

Tyrannus melancholicus, Tropical Kingbird. M 43, F 44.5.

Tyrannus savana, Fork-tailed Flycatcher. F 37.5, F? 30.5.

Pachyramphus viridis, Green-backed Becard. M 20.5, 21.

Tityra cayana, Black-tailed Tityra. M 77.5.

Procnias nudicollis, Bare-throated Bellbird. F 164.

Schiffornis virescens, Greenish Manakin. M 22, 23; F 21.5, 22.5, 23.5, 24.

Chiroxiphia caudata, Swallow-tailed Manakin. M 22.5, 23, 23, 23.5, 23.5, 24, 24, 25.5, 26, 26; F 21.5, 22, 22.5, 22.5, 23.5, 24, 24, 24, 24.5, 25.

Pipra fasciicauda, Band-tailed Manakin. M 15, 15, 15.5, 16, 16.5, 16.5, 16.5, 16.5, 18.5, 18.5; F 15, 16, 16, 16, 16, 16, 16, 17, 17.5; ? 14, 15, 16.

Phytotoma rutila, White-tipped Plantcutter. F 39, 41.

Tachycineta albiventer, White-winged Swallow. M 20.5, F 18.5.

Progne tapera, Brown-chested Martin. M 33.5, 38.5; F 35.0, 36.0, 37.0, 37.5; F? 36.5.

Progne chalybea, Gray-breasted Martin. M 49.5.

Stelgidopteryx ruficollis, Rough-winged Swallow. M 18.5.

Cyanocorax cyanomelas, Purplish Jay. M 177, 177, 188, 217; F 180, 181, 185, 193.

Cyanocorax chrysops, Plush-crested Jay. M 141, 156, 160; F 112, 127, 128, 152, 157; ? 147.

Donacobius atricapillus, Black-capped Donacobius. M 38, 39, 39, 42.5; F 27.5, 29.5, 34.5.

Campylorhynchus turdinus, Thrush-like Wren. M 27.5, 30.5, 35.5; F 29.5, 29.5.

Troglodytes aedon, House Wren. M 7.5, 8.5, 11, 12, 12, 12.5, 12.5, 13.5; F 11.

Mimus saturninus, Chalk-browed Mockingbird. M 58.

Mimus triurus, White-banded Mockingbird. M 45.5, F 42.

Turdus rufiventris, Rufous-bellied Thrush. M 64, 65, 66, 67, 70, 73, 74, 82; F 64, 70, 71, 73, 75, 76.

Turdus leucomelas, Pale-breasted Thrush. M 51, 61, 62, 63, 66, 67, 68, 69, 69, 70, 70, 70, 70, 74, 75, 75, 81; F 64, 65, 66, 68, 73, 73, 74, 76, 82, 99; ? 65.

Turdus amaurochalinus, Creamy-bellied Thrush. M 47.5, 51, 52, 53, 58, 58, 73, 74, 88; F 53, 56, 57, 57, 59, 59, 60.0, 63, 64, 66, 68, 69, 74; ? 57, 63, 78.

Turdus albicollis, White-necked Thrush. M 58.

Polioptila dumicola, Masked Gnatcatcher. M 7.1, 7.5; F 7.1.

Passer domesticus, House Sparrow. M 22.5, 24, 25, 26, 26, 26, 27, 27, 30; F 25, 25, 25.5, 26, 26.

Carduelis magellanica, Hooded Siskin. F 11, 12.

Anthus lutescens, Yellowish Pipit. M 13, 14, 15.0.

Cyclarhis gujanensis, Rufous-browed Peppershrike. M 25, 28, 28, 30.0; F 30, 33.5.

Vireo olivaceus, Red-eyed Vireo. M 18.5.

Hylophilus poicilotis, Rufous-crowned Greenlet. F 9.2, ? 9.2.

Cacicus haemorrhous, Red-rumped Cacique. M 85, 89; F 60, 65, 66.

Cacicus chrysopterus, Golden-winged Cacique. M 35, 40, 41, 43.5; F 24.5, 29.

Cacicus solitarius, Solitary Black Cacique. M 77, 78.5, 87; F 65.5, 69, 71.

Molothrus bonariensis, Shiny Cowbird. M 53; F 32.5, 43.5.

Molothrus rufoaxillaris, Screaming Cowbird. M 56.

Molothrus badius, Bay-winged Cowbird. M 32, 41; F 36, 37.

Icterus cayanensis, Epaulet Oriole. M 24, 24.5, 27.5, 31, 34, 34.5, 35; F 23.5, 24.5, 25.5, 29, 29.5, 31.5, 33.

Agelaius cyanopus, Unicolored Blackbird. M 32.0, 32.0, 33.0, 33.5, 33.5, 35, 35, 36; F 24.5, 27.5, 31, 33.

Amblyramphus holosericeus, Scarlet-headed Blackbird, F 56.

Gnorimopsar chopi, Chopi Blackbird. M 65, 80; F 6l, 64, 78.

Pseudoleistes guirahuro, Yellow-rumped Marshbird. M 74, 82, 84, 85, 93; F 75.

Sturnella superciliaris, White-browed Blackbird. M 38.5, 49.5.

Parula pitiayumi, Tropical Parula. M 7.7, 7.9; ? 7.

Geothlypis aequinoctialis, Masked Yellowthroat. M 11, 11.5, 12, 12; M? 17.

Basileuterus culicivorus, Golden-crowned Warbler. M 8, 8.8, 9, 9, 9, 9, 9, 9.2, 9.5; F 7.7, 8.3, 8.4, 8.8, 9, 9.0; ? 9, 10, 11.

Basileuterus leucoblepharus, White-browed Warbler. M 13.5, 13.5, 14, 14.5, 15, 15, 15, 15, 15, 15, 16; F 13, 13, 13.5, 14; ? 14.

Phaeothlypis rivularis, River Warbler. M 15, 15, 15; F 12.5, 12.5, 12.5, 13; ? 14.

Conirostrum speciosum, Chestnut-vented Conebill. M 9.4, 10; F 8.3.

Dacnis cayana, Blue Dacnis. M 16, 16, 16; F 15.5, 15.5.

Euphonia pectoralis, Chestnut-bellied Euphonia. M 13.

Tangara seledon, Green-headed Tanager. F 19.

Tangara cayana, Burnished-buff Tanager. M 19, 29; F 22.

Thraupis sayaca, Sayaca Tanager. M 25.5, 28.0, 30, 30.5, 30.5, 31, 33, 36, 38, 39; F 30.5, 32, 33, 34, 37, 37, 41.5, 42.0.

Habia rubica, Red-crowned Ant-Tanager. M 34, 35, 35; F 30, 32, 34.

Trichothraupis melanops, Black-goggled Tanager. M 20, 21, 21, 22, 22, 22, 23, 23, 24, 24, 24; F 19, 20, 21, 21, 21, 21.5, 21.5, 22, 22, 22.5, 23, 24; ? 22.

Tachyphonus coronatus, Ruby-crowned Tanager. M 20, 20, 23, 24, 26, 26, 26, 26, 27, 27, 28.5, 29, 29.5, 30; F 23, 24, 25, 25.5, 26, 26, 26.5, 28, 28, 28.

Tachyphonus rufus, White-lined Tanager. M 28.5, 29, 29, 29.5, 30, 31, 32, 34.5; F 29, 33, 34

Pyrrhocoma ruficeps, Chestnut-headed Tanager. M 14, 14, 14.5, 14.5, 15, 15; F 15.

Hemithraupis guira, Guira Tanager. M 12.

Cissopis leveriana, Magpie Tanager. F 70, 74.

Saltator similis, Green-winged Saltator. M 49.

Saltator coerulescens, Grayish Saltator. M 49, 52, 57, 58.5, 60, 61, 61, 62; F 45.5, 53, 55, 55, 56, 57, 57, 58, 62, 63.

Saltator aurantiirostris, Golden-billed Saltator. M 41, 44.5; F 45.5.

Cyanocompsa cyanea, Ultramarine Grosbeak. M 19.5, 21.5, 24.

Cyanoloxia glaucocaerulea, Indigo Grosbeak. M 16, F 18.

Paroaria coronata, Red-crested Cardinal. M 31.5, 40.5; F 29.5, 34, 37.5.

Paroaria capitata, Yellow-billed Cardinal. M 19.5, 20, 21.5, 23.5; F 17.0, 23.5; ? 20.5, 24.5.

Oryzoborus angolensis, Chestnut-bellied Seed-Finch. M 12, 14; F 12.5, 13, 13.5, 13.5, 14, 14.

Sporophila collaris, Rusty-collared Seedeater. M 7.5, 10.5, 11.0, 13.

Sporophila caerulescens, Double-collared Seedeater. M? 12.5; F 7.5, 10; ? 10, 10, 11.

Sporophila leucoptera, White-bellied Seedeater. M 15.0, 15.5, 16.

Volatinia jacarina, Blue-black Grassquit. M 10.5, F 7.8.

Sicalis flaveola, Saffron Finch. M 12, 16, 16, 17; F 15.

Poospiza cinerea, Black-capped Warbling-Finch. M 8.4, 9, 11.5, 12, 12.2, 13; F 11, 13; ? 11. Poospiza torquata, Ringed Warbling-Finch. F 10.

Saltatricula multicolor, Many-colored Chaco-Finch. M 22.

Corpphospingus cucullatus, Red-crested Finch. M 13, 14, 15.0, 15, 15, 16, 16, 16.5, 17, 17, 18; M? 11.5, 16.5; F 11, 13, 13, 14.5, 15.0, 16, 16; ? 16.

Embernagra platensis, Great Pampa-Finch. M 45, F 47.

Donacospiza albifrons, Long-tailed Reed-Finch. F 15.

Arremon flavirostris, Saffron-billed Sparrow. M 25, 26, 27, 28, 29.

Myiospiza humeralis, Grassland Sparrow. M 17.

Zonotrichia capensis, Rufous-collared Sparrow. M 19, 20, 21.5; F 19, 20, 20.



