

NEW AND RECONFIRMED BIRD RECORDS FOR MARAJÓ ISLAND, AMAZON RIVER ESTUARY, BRAZIL

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RESUMO — Noventa e quatro espécies de aves são registradas pela primeira vez ou reconfirmadas para a ilha de Marajó, na foz do rio Amazonas, Brasil, dez através de observações e o restante através de espécimes depositados no Museu Paraense Emílio Goeldi, Belém, Brasil e no Museu do Condado de Los Angeles, EUA. A maioria das espécies é de taxa silvícolas encontrados no oeste da ilha, antes desconhecido em termos ornitológicos. Além da data e localidade da coleta, as informações dos espécimes incluem dados sobre habitat e as condições das gônadas.

PALAVRAS-CHAVE: Aves; Zoogeografia; Amazônia brasileira; Ilha de Marajó; Distribuição geográfica.

ABSTRACT — Ninety-four bird species are newly recorded or reconfirmed for Marajó Island at the mouth of the Amazon River, Brazil, ten by observation records and the remainder based on specimens deposited at the Museu Paraense Emílio Goeldi, Belém, Brazil and the Los Angeles County Museum, USA. Most of the new records are of forest taxa from the western half of the island, previously unstudied by ornithologists. In addition to date and locality, specimen information includes data on habitat and on gonad condition.

KEY WORDS: Birds; Zoogeography; Brazilian Amazon; Marajó Island; Geographic distribution.

INTRODUCTION

Marajó Island at the mouth of the Amazon River occupies approximately 50,000 km², making it the largest estuarine island in the world. Located just south of the Equator, the island's eastern and western halves support very different vegetation types. The east is covered in seasonally flooded grasslands, dry scrub on slightly elevated terraces known as *tesos*, gallery forests, and marine influenced habitats, including extensive mangroves, along the coast. Terra firme and flooded (*várzea*)

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forests dominate the western half, with the flooding typically occurring twice daily as tidal influence backs up the fresh waters of the Amazon. Although readily accessible for almost two centuries, well-populated, and near Amazonian Brazil's largest urban center, Belém, surprisingly little ornithological work has been concentrated on Marajó. Here we report 94 bird species newly recorded or reconfirmed for Marajó, based primarily on our own studies. Nearly all historic studies were carried out in the eastern half of the island, dominated by open vegetation. Our studies represent the first large-scale effort to document the avifauna of the forested western half.

The pioneer of ornithology in the Amazon estuary was Alfred Russel Wallace (1853), who visited both Marajó and Mexiana Islands in 1849. His collections, deposited at the British Museum (Natural History) were studied by Sclater and Salvin (1867).

In 1909 and 1910, Lorenz Müller collected birds on Marajó and Mexiana Islands for the Munich Museum; these were then studied by Hellmayr (1912).

Emilie Snethlage (1914) included most of the specimens that she and her Goeldi Museum (Belém, Pará, Brazil) associates collected on Marajó in her landmark catalogue of Amazonian birds. She cites the collections made by O. Bertram in 1911 on Marajó in her introduction on ornithological activities of the Goeldi Museum, but she does not report these specimens in the catalogue. When this material represents new taxa for Marajó, it is reported below. Snethlage does report material collected by G. Haggmann at Rio Macujubim, western Marajó, in 1901. Paynter and Traylor (1991) questioned whether this site is part of Marajó, placing it "perhaps on Ilha Macujubim to the W of Ilha de Marajó" (p.356). The mouth of the Rio Mucujubim-sinho, the name today of the river where Haggmann collected, is located just east of the town of Antônio Lemos, at 1°31'S, 50°23'W. Because doubt has been placed on whether these specimens really came from Marajó, and several represent the only previous records for a number of species, they are repeated below when reconfirmed by new specimens we have collected.

Brodkorb (1937) reported on the birds of Marajó and Caviana Islands collected by J. B. Steere in 1871 and deposited in the collections of the University of Michigan (Ann Arbor, USA).

Collections which have not been reported in the literature, but to which we have had access, include those made by: Emílio Dente at Genipapo (0°42'S, 49°10'W) along the Rio Arari in 1960 and sold to the Los Angeles County Museum (USA); Pedro Pinto Peixoto Vello, who collected birds on Marajó for the National Museum, Rio de Janeiro (Brazil) in 1923; and M. Moreira who collected for the Goeldi Museum at Cachoeira do Arari (1°01'S, 48°58'W) in 1964, 1965, 1966 and 1976, and Ponta de Pedras (1°23'S, 48°52'W) in 1978, 1979 and 1980.

As part of a major project of zoological surveys of the Brazilian Amazon Basin financed by the John D. and Catherine T. MacArthur Foundation of Chicago, USA, and coordinated at the Goeldi Museum in Belém, Brazil, three ornithological

expeditions were organized to the forested sections of Marajó from 1987 to 1989: 1) Munic. Breves, Breves-Anajás road, km 18 (1°35'S, 50°15'W), Nov-Dec 1987; 2) Munic. Breves, sítio Castanhal, Rio Caruaca (1°30'S, 50°11'W), Feb-Mar 1988; and 3) Munic. Cachoeira do Arari, povoação Pedras, Rio Caracará (1°09'S, 48°45'W), Jun 1989. These expeditions resulted in 643 new avian specimens, which are deposited in the ornithological collections of the Museu Paraense Emílio Goeldi, Belém. To save space, when these specimens are cited below we have not included the names of the collectors, who were researchers and technicians on the staff of the museum.

From 1979 to 1994, one of us (DCO) made approximately 40 trips on passenger ships specializing in ecotourism through the major shipping route between Belém and Manaus. Part of this route follows the Breves and Macaco Channels (approximately 1°00'S, 50°50'W to 1°50'S, 50°20'W) in western Marajó, traversing *várzea* forest habitat. Several bird observations representing first records for the region were made during these trips in the months of Jan, Feb, Sep, Oct, and Nov of diverse years.

The emphasis of the work performed under the aegis of the MacArthur Foundation project was on birds of terra firme forests. Although the data presented here augment the number of species known from the island by over one-third, many resident and migratory bird species on Marajó remain to be catalogued. The habitat that will doubtlessly prove most fruitful for new discoveries is that of the *várzea* forests, flooded twice a day with fresh water by tidal action. These forests are extremely difficult to work in and remain undersampled.

Information on the specimens collected by us includes data on habitat and on gonad size. For females we have indicated whether the ovary was granulated (gran.), or smooth. All gonad measurements are in mm. Catalogue numbers preceded by MPEG refer to specimens deposited at the Museu Paraense Emílio Goeldi, Brazil; LACM refers to the Los Angeles County Museum, USA.

SPECIES LIST

GREEN IBIS *Mesembrinibis cayennensis*

Single individuals and groups of up to 4 of this forest ibis were seen by DCO along the Breves Channel during approximately 50% of the trips on this route.

KING VULTURE *Sarcorampus papa*

Single individuals were recorded soaring on approximately 30% of the trips through the Breves Channel. On 26 Feb 1985 a group of 4 adults and 2 immatures was seen feeding at an unidentified (water buffalo?) carcass near the northern end of the Breves Channel.

BLACK VULTURE *Coragyps atratus*

Abundant at towns and small settlements along all the Breves Channel.

PLUMBEOUS KITE *Ictinia plumbea*

The most common accipitrid along the Breves Channel, 30-200 seen singly perched or soaring on each of the trips.

SLATE-COLORED HAWK *Leucopternis schistaceus*

This hawk was observed by DCO on approximately 50% of the traverses through the Breves Channel. LMPH collected the species in 1992 on neighboring Caviana Island.

BARRED FOREST-FALCON *Micrastur gilvicollis*

1 ♂, MPEG 41601. Breves, Rio Caruaca, sítio Castanhal, 29 Feb 1988, terra firme forest, gonads 6x4.

BLACK CARACARA *Daptrius ater*

Single individuals and pairs observed by DCO on almost every trip through the Breves Channel.

SPOTTED RAIL *Rallus maculatus*

1 ♂, MPEG 22602. Cachoeira do Arari, Fazenda Maria Pena, 10 Apr 1964, col. J. C. Cardoso.

ASH-THROATED CRAKE *Porzana albicollis*

2 ♂s, MPEG 22607-08, Cachoeira do Arari, Fazenda Maria Pena, 10 May, 9 Jul 1964, col. M. Moreira.

GRAY-BREASTED CRAKE *Laterallus exilis*

1 ♀, MPEG 40729, Marajó, Feb 1945, col. M. Laurent.

RUSSET-CROWNED CRAKE *Laterallus viridis*

1 ♀, MPEG 43924, Cachoeira do Arari, Rio Caracará, povoação Pedras, 2 Jun 1989, second growth ("capoeira"), gonads 6x3 (smooth).

PURPLE GALLINULE *Porphyryla martinica*

1 ♀, MPEG 1632, Marajó, 29 Mar 1908, col. Meerwarth. Sneath (1914), in a probable simple oversight, does not make reference to this specimen in her *Catálogo das aves amazônicas*.

UPLAND SANDPIPER *Bartramia longicauda*

1 ♀, LACM 43970, 1 Dec 1960, Genipapo, Rio Arari, col. E. Dente.

COMMON TERN *Sterna hirundo*

1 ♂, MPEG 27407, Marajó, 13 Dec 1956, col. R. Benício Silva.

1 ♀, MPEG 31935, Ponta de Pedras, 7 Nov 1977.

1 ♀, MPEG 34893, Boca do Rio Soure, 6 Jun 1983, col. D. S. Barbosa.

YELLOW-BILLED TERN *Sterna supercilialis*

2 ♂s, 1 ♀, MPEG 22613-5, Cachoeira do Arari, Fazenda Taperebá, 7 Aug 1964, col. M. Moreira.

ROCK DOVE *Columba livia*

1 unsexed, MPEG 5581, Chaves, Dec 1907, col. O. Martins.

COMMON GROUND-DOVE *Columbina passerina griseola*

1 ♂, MPEG 32918, Ponta de Pedras, Fazenda Cedro, 31 Jul 1978, col. M. Moreira, gonads 10x7.

1 ♀, MPEG 32919, Ponta de Pedras, Fazenda Tucumã, 5 Aug 1978, col. M. Moreira, gonads 7x7 (gran.).

1 ♀, MPEG 41602, Breves, Rio Caruaca, sítio Castanhal, 26 Feb 1988, second growth ("capoeira"), gonads 3x2 (smooth).

RUDDY QUAIL-DOVE *Geotrygon montana montana*

3 ♂s, 1 ♀, 1 imm. ♂, MPEG 41603-7, Breves, Rio Caruaca, sítio Castanhal, 24, 29 Feb, 2, 4 Mar, 23 Feb 1988, terra firme forest, gonads 15x7, 15x7, 13x8, 6x6 (gran.), 5x1.

1 ♀, MPEG 41749, Estrada Breves-Anajás km 18, 7 Dec 1989, terra firme forest, gonads 6x8 (gran.).

CHESTNUT-FRONTED MACAW *Ara severa*

Common and conspicuous on every trip along the Breves Channel, where seen in pairs and small flocks of up to 7 individuals.

BLUE-HEADED PARROT *Pionus menstruus*

One of the commonest parrots along the Breves Channel, where they appeared primarily in noisy flocks of 5 to 100 or more. Also seen as single individuals and pairs.

GREAT HORNED OWL *Bubo virginianus*

1 ♂, MPEG 22649, Cachoeira do Arari, Fazenda Taperebá, 8 Sep 1964, col. M. Moreira.

1 ♀, MPEG 31567, Ponta de Pedras, Fazenda São Joaquim, 11 Jun 1976, col. M. Moreira and L. Videira, gonads 35x30.

SPECTACLED OWL *Pulsatrix perspicillata*

1 ♀, MPEG 32986, Ponta de Pedras, Fazenda Cedro, 24 Jul 1978, col. M. Moreira.

NACUNDA NIGHTHAWK *Podager nacunda*

1 ♂, MPEG 9023, Fazenda Teso São José, 17 Nov 1911, col. O. Bertram.

1 ♂, MPEG 25395, Cachoeira do Arari, 15 Dec 1965, M. Moreira.

1 ♂, 2 ♀s, MPEG 27362-4, Cachoeira do Arari, Baixa do Alccrim, 2 Feb 1966, col. M. Moreira, gonads 2x2, 2x3 (gran.), 2x3 (gran.).

RUFIOUS-BREASTED HERMIT *Glaucis hirsuta hirsuta*

1 ♀, MPEG 43939, Cachoeira do Arari, Rio Caracará, Pedras, 12 Jun 1989, várzea forest, gonads 5x3 (gran.).

LONG-TAILED HERMIT *Phaethornis superciliosus muelleri*

3 ♂s, 2 unsexed, MPEG 41753-7, Estrada Breves-Anajás km 18, 30, 30 Nov, 9, 2, 3 Dec 1987, terra firme forest, gonads 1x1, 3x2, 2x2.

1 ♂, 1 ♀, MPEG 41614-5, Breves, Rio Caruaca, sítio Castanhal, 27 Feb 1988, terra firme forest, gonads 1x1.

REDDISH HERMIT *Phaethornis ruber ruber*

1 ♂, MPEG 43940, Cachoeira do Arari, Rio Caracará, povoação Pedras, 24 Jun 1989, terra firme forest, gonads 1x1.

GOULD'S JEWELFRONT *Polyplancha aurescens*

2 ♂s, MPEG 41765-6, Estrada Breves-Anajás km 18, 7, 11 Dec 1987, terra firme forest, gonads 2x2, 1x1.

1 ♂, MPEG 41617, Breves, Rio Caruaca, sítio Castanhal, 7 Mar 1988, terra firme forest, gonads 2x2.

This hummingbird was previously known only from the upper Amazon, from the Rio Madeira west. In addition to these new records from Marajó, Graves and Zusi (1990) recently recorded this species from the lower Rio Xingu.

CRIMSON TOPAZ *Topaza pella microrhynchus*

1 ♂, MPEG 41767, Estrada Breves-Anajás km 18, 9 Dec 1987, terra firme forest, gonads 2x2.

BLACK-EARED FAIRY *Heliothryx aurita phainolaema*

1 ♂, MPEG 41768, Estrada Breves-Anajás km 18, 3 Dec 1987, terra firme forest, gonads 3x3.

BLUE-CHEEKED JACAMAR *Galbula cyanicollis*

2 ♂s, MPEG 43976-7, Cachoeira do Arari, Rio Caracará, povoação Pedras, 1, 5 Jun 1989, terra firme forest, gonads 2x2, 3x2.

PARADISE JACAMAR *Galbula dea dea*

1 ♂, 2 ♀s, MPEG 41771-3, Estrada Breves-Anajás km 18, 30, 30 Nov, 5 Dec 1987, terra firme forest, gonads 1x1, 3x3 (gran.), 3x3 (smooth).

SPOTTED PUFFBIRD *Bucco tamatia hypnaleus*

1 ♂, MPEG 32930, Ponta de Pedras, Fazenda Cedro, 24 Jul 1978, gonads 4x4, col. M. Moreira.

1 ♀, MPEG 41621, Breves, Rio Caruaca, sítio Castanhal, 26 Feb 1988, second growth ("capoeira"), gonads 3x2 (smooth).

COLLARED PUFFBIRD *Bucco capensis*

1 ♂, MPEG 41774, Estrada Breves-Anajás km 18, 3 Dec 1987, terra firme forest, gonads 4x2.

RUFIOUS-NECKED PUFFBIRD *Malacoptila rufa brunnescens*

1 ♂, 1 ♀, MPEG 41775-6, Estrada Breves-Anajás km 18, 11, 9 Dec 1987, terra firme forest, gonads 6x3, 3x2 (gran.).

2 ♂s, 1 ♀, MPEG 41662-4, Breves, Rio Caruaca, sítio Castanhal, 23, 27, 23 Feb 1988, terra firme forest, gonads 5x3, 4x2, 2x2 (gran.).

WHITE-FRONTED NUNBIRD *Monasa morphoeus morphoeus*

1 ♂, MPEG 41777, Estrada Breves-Anajás km 18, 3 Dec 1987, terra firme forest, gonads 4x3.

RED-NECKED ARAÇARI *Pteroglossus bitorquatus reichenowi*

1 ♀, MPEG 41785, Estrada Breves-Anajás km 18, 2 Dec 1987, terra firme forest, gonads 3x3 (smooth)

1 ♂, 2 ♀s, MPEG 43982-4, Cachoeira do Arari, Rio Caracará, povoação Pedras, 2, 1, 5 Jun 1989, terra firme forest, gonads 5x3, 8x4 (gran.), 12x6 (gran.).

Griscom and Greenway (1941:198) mention a specimen of this toucan deposited at the Museum of Comparative Zoology (Cambridge, Massachusetts, USA) "labelled 'Marajó Island,' a locality which cannot possibly be correct, as the genus is unknown on the open campos of this island." Haffer (in lit.) examined this specimen and concluded that the label information was correct, since western Marajó supports extensive forests. He therefore included Marajó as part of the range of *P. bitorquatus* on the

distribution map of this superspecies group (Haffer 1974:220). Our new records here confirm Haffer's decision and reinforce the veracity of the label information on the MCZ specimen.

CHESTNUT WOODPECKER *Celeus junana junana*

1 ♂, MPEG 32933. Ponta de Pedras. Aug 1978. col. M. Moreira, gonads 4x3.

1 ♂, MPEG 41627. Breves. Rio Caruaca. sítio Castanhal. 21 Feb 1988, várzea forest, gonads 7x4.

1 unsexed = ♂. MPEG 43985. Cachoeira do Arari. Rio Caracará. povoação Pedras. 16 Jun 1989.

WAVED WOODPECKER *Celeus undatus multifasciatus*

1 ♂, MPEG 43986. Cachoeira do Arari. Rio Caracará. povoação Pedras. 7 Jun 1989. terra firme forest, gonads 4x2.

RINGED WOODPECKER *Celeus torquatus pieteroyensi*

1 ♀, MPEG 41779. Estrada Breves-Anajás km 18. 2 Dec 1987, terra firme forest, gonads 5x4 (gran.).

YELLOW-TUFTED WOODPECKER *Melanerpes cruentatus*

1 ♂, 1 ♀, MPEG 41781. Estrada Breves-Anajás km 18. 11 Dec 1987, terra firme forest, gonads 10x5, 7x5 (gran.).

3 ♂s, MPEG 41628-30. Breves. Rio Caruaca. sítio Castanhal. 26, 26 Feb, 5 Mar 1988, second growth ("capoeira") (2) and terra firme forest (1), gonads 8x4, 7x5, 6x4.

RED-NECKED WOODPECKER *Campephilus rubricollis olalae*

2 ♂s, 2 ♀s, MPEG 41631-4. Breves. Rio Caruaca. sítio Castanhal. 1, 8 Mar, 20 Feb, 1 Mar 1988. terra firme forest, gonads 7x4, 10x6, 3x4 (gran.).

PLAIN-BROWN WOODCREEPER *Dendrocincla fuliginosa rufolivacea*

1 ♂, 1 ♀, MPEG 8990, 8992. Fazenda Teso São José. 17, 23 Nov 1911. col. O. Martins and O. Bertram.

3 ♂s, 1 ♀, MPEG 41635-8. Breves. Rio Caruaca. sítio Castanhal. 22 Feb, 8, 7, 9 Mar 1988, terra firme forest, gonads 9x5, 9x5, 2x1, 6x5 (smooth).

8 ♂s, 4 ♀s, MPEG 43994-4005. Cachoeira do Arari. Rio Caracará. povoação Pedras. 1, 4, 5, 15, 16, 16, 21, 21, 3, 4, 5, 15 Jun 1989, terra firme forest, gonads 10x5, 9x5, 10x6, 7x4, 8x5, 2x1, 8x4, 2x1, 6x3 (gran.), 6x4 (gran.), 5x3 (gran.), 7x4 (gran.).

WEDGE-BILLED WOODCREEPER *Glyphorhynchus spirurus cuneatus*

9 ♂s, 2 ♀s, MPEG 41786-96. Estrada Breves-Anajás km 18. 26, 26, 27, 28, 30, 30 Nov, 3, 3, 3 Dec, 30, 26 Nov 1987, terra firme forest, gonads 3x2, 4x3, 2x1, 1x1, 2x1, 2x1, 4x2, 3x2, 3x2, 2x2 (smooth), 4x3 (gran.).

5 ♂s, 4 ♀s, 1 unsexed, MPEG 41645-54. Breves. Rio Caruaca. sítio Castanhal. 24, 25, 25, 29 Feb, 2 Mar, 25, 27 Feb, 7, 8 Mar, 20 Feb, 1988, terra firme forest, gonads 8x5, 9x5, 4x3, 3x2, 8x5, 6x6 (gran.), 7x5 (gran.), 4x3 (gran.), 4x3 (gran.).

8 ♂s, 5 ♀s, MPEG 44006-18. Cachoeira do Arari. Rio Caracará. povoação Pedras. 4, 9, 9, 15, 15, 16, 21, 23, 3, 4, 5, 9, 9 Jun 1989, terra firme forest, gonads 1x1, 7x4, 1x1, 2x1, 2x1, 2x1, 1x1, 3x2, 5x3 (gran.), 4x2 (gran.), 5x3 (gran.), 3x2 (smooth), 4x2 (smooth).

BARRED WOODCREEPER *Dendrocolaptes certhia ridgwayi*

1 unsexed, 1 ♂, MPEG 32961-2, Ponta de Pedras, 1, 3 Aug 1978, col. M. Moreira, gonads 2x2.
2 ♂s, MPEG 41797-8, Estrada Breves-Anajás km 18, 2, 5 Dec 1987, terra firme forest, gonads 11x6, 5x2.

1 ♂, 1 ♀, MPEG 41639-40, Breves, Rio Caruaca, sítio Castanhal, 23 Feb 1988, terra firme forest, gonads 11x6, 3x2 (gran.).

3 ♂s, 2 ♀s, MPEG 44019-23, Cachocira do Arari, Rio Caracará, povoação Pedras, 8, 10, 21, 4, 10 Jun 1989, terra firme forest, gonads 13x8, 7x4, 10x6, 10x5 (gran.), 6x3 (gran.).

SPIX'S WOODCREEPER *Xiphorhynchus spixii spixii*

5 ♂s, 2 ♀s, 1 unsexed, MPEG 41800-7, Estrada Breves-Anajás km 18, 28, 30 Nov, 2, 3, 7 Dec, 5, 5, 5 Dec 1987, terra firme forest, gonads 11x6, 13x8, 10x8, 6x4, 4x3 (gran.), 2x2 (smooth).

1 ♂, 1 ♀, MPEG 41643-4, Breves, Rio Caruaca, sítio Castanhal, 22, 27 Feb 1988, terra firme forest, gonads 10x7, 4x3 (gran.).

RUDDY SPINETAIL *Synallaxis rutilans rutilans*

1 ♂, MPEG 41808, Estrada Breves-Anajás km 18, 22 Nov 1987, terra firme forest, gonads 2x1.

1 ♂, 1 ♀, MPEG 41655-6, Breves, Rio Caruaca, sítio Castanhal, 20, 22 Feb 1988, terra firme forest, gonads 10x5, 5x4 (gran.).

OLIVE-BACKED FOLIAGE-GLEANER *Automolus infuscatus paraensis*

4 ♂s, 1 ♀, 1 unsexed, MPEG 41809-14, Estrada Breves-Anajás km 18, 30 Nov, 2, 4, 5 Dec, 30, 30 Nov 1987, terra firme forest, gonads 12x8, 10x5, 12x6, 10x5, 7x6 (gran.).

2 ♂s, MPEG 41657-8, Breves, Rio Caruaca, sítio Castanhal, 29 Feb, 8 Mar 1988, terra firme forest, gonads 10x6, 9x5.

SHORT-BILLED LEAFSCRAPER *Sclerurus rufifigularis rufifigularis*

1 ♂, MPEG 41818, Estrada Breves-Anajás km 18, 2 Dec 1987, terra firme forest, gonads 3x2.

BLACK-CAPPED ANTSHRIKE *Thamnophilus schistaceus inornatus*

2 ♂s, 3 ♀s, MPEG 41819-23, Estrada Breves-Anajás km 18, 3 Dec, 30, 30, 30 Nov, 9 Dec 1987, terra firme forest, gonads 3x2, 3x2, 5x6 (gran.), 4x4 (gran.), 4x4 (smooth).

2 ♀s, MPEG 41660-1, Breves, Rio Caruaca, sítio Castanhal, 1, 2 Mar 1988, terra firme forest, gonads 2x2 (smooth), 4x4 (smooth).

CINEREOUS ANTSHRIKE *Thamnomanes caesius hoffmannsi*

2 ♂s, 1 ♀, MPEG 41824-6, Estrada Breves-Anajás km 18, 30 Nov 1987, terra firme forest, gonads 1x1, 2x1, 8x6 (gran.).

PLAIN-THROATED ANTWREN *Myrmotherula huxwellii hellmayri*

3 ♂s, 1 imm. ♂, 1 unsexed, MPEG 41827-31, Estrada Breves-Anajás km 18, 26, 28 Nov, 9, 3, 7 Dec 1987, terra firme forest, gonads 1x1, 1x1, 2x1.

3 ♂s, 3 ♀s, MPEG 41662-7, Breves, Rio Caruaca, sítio Castanhal, 22, 23 Feb, 2 Mar, 23, 24, 25 Feb 1988, terra firme forest, gonads 2x1, 3x2, 2x1, 4x3 (smooth), 3x3 (gran.).

WHITE-EYED ANTWREN *Myrmotherula leucophthalma sordida*

1 ♂, MPEG 2031, Western Marajó, Rio Macujubim, 2 Sep 1901, col. G. Hagmann.

1 ♂, MPEG 41832, Estrada Breves-Anajás km 18, 28 Nov 1987, terra firme forest, gonads 3x2.

1 ♂, 1 ♀, MPEG 41668-9, Breves, Rio Caruaca, sítio Castanhal, 25 Feb 1988, terra firme forest, gonads 2x1, 4x4 (gran.).

WHITE-FLANKED ANTWREN *Myrmotherula axillaris axillaris*

1 ♂, 2 ♀s, 1 unsexed. MPEG 8993-96. Fazenda Teso São José. 20, 20, 21, 23 Dec 1911, col. O. Bertram.

2 ♂s, 3 ♀s. MPEG 32956-60. Ponta de Pedras, Fazenda Cedro. 24, 18, 24, 18, 18 Jul 1978, col. M. Moreira.

2 ♂s, 4 ♀s, 1 imm. ♂. MPEG 44057. Cachoeira do Arari, Rio Caracará, Povoação Pedras. 6, 21, 7, 8, 15, 19, 23 Jun 1989, terra firme forest, gonads 5x3, 4x2, 3x2 (gran.), 10x5 (gran.), 6x6 (gran.), 4x2, 5x2.

LONG-WINGED ANTWREN *Myrmotherula longipennis paraensis*

3 ♂s, 1 ♀, MPEG 41834-37. Estrada Breves-Anajás, km 18, 27, 30 Nov, 3 Dec, 27 Nov 1987, terra firme forest, gonads 4x2, 1x1, 1x1, 5x7 (gran.).

2 ♂s, 2 ♀s, MPEG 41670-73. Breves, Rio Caruaca, sítio Castanhal, 1, 2, 1, 2 Mar 1988, terra firme forest, gonads 5x3, 2x1, 5x4 (gran.), 5x5 (smooth), 1x1.

GRAY ANTWREN *Myrmotherula menetriesii omissa*

1 ♂, MPEG 41833, Estrada Breves-Anajás, km 18, 30 Nov 1987, terra firme forest, gonads 6x3.

1 ♂, 1 ♀, MPEG 41675. Breves, Rio Caruaca, sítio Castanhal, 7 Mar, 22 Feb 1988, terra firme forest, gonads 6x4 (gran.).

BLACK-FACED ANTBIRD *Myrnoborus myotherinus ochrolaemus*

4 ♂s, 1 ♀, MPEG 41838-41. Estrada Breves-Anajás km 18, 27, 28 Nov, 9, 7 Dec 1987, terra firme forest, gonads 3x1, 2x1, 2x1, 5x4 (smooth).

6 ♂s, 4 ♀s, MPEG 41676-85. Breves, Rio Caruaca, sítio Castanhal, 22, 24, 25, 27 Feb, 2, 7 Mar, 22 Feb, 3, 3, 7 Mar 1988, terra firme forest, gonads 3x1, 3x1, 4x2, 2x1, 2x1, 5x2, 3x3 (gran.), 5x3 (smooth), 5x4 (gran.), 5x4 (gran.).

WARBLING ANTBIRD *Hypocnemis cantator affinis*

1 ♀, MPEG 2032, Western Marajó, Rio Macujubim, 2 Sep 1901, col. G. Haggmann.

4 ♂s, 2 ♀s, 1 unsexed. MPEG 41842-8, Estrada Breves-Anajás km 18, 2, 2, 3, 3, 7 Dec, 30, 30 Nov 1987, terra firme forest, gonads 1x1, 1x1, 3x2, 1x1, 5x5 (gran.), 4x3 (smooth).

1 ♂, 1 ♀, MPEG 41686-7. Breves, Rio Caruaca, sítio Castanhal, 24, 25 Feb 1988, terra firme forest, gonads 2x1.

BLACK-CHINNED ANTBIRD *Hypocnemoides melanopogon*

One of the dominant voices recorded by DCO in riparian thickets along the Breves Channel during almost every trip in western Marajó.

SPOT-WINGED ANTBIRD *Percnostola leucostigma rufifacies*

2 ♂s, 1 ♀, MPEG 41849-51, Estrada Breves-Anajás, km 18, 30 Nov, 3, 4 Dec 1987, terra firme forest, gonads 1x1, 1x1, 5x4 (gran.).

BLACK-FACED ANTTHRUSH *Formicarius analis paraensis*

2 ♂s, 1 ♀s, MPEG 44077-9, Cachoeira do Arari, Rio Caracará, povoação Pedras, 16, 20, 16 Jun 1989, terra firme forest, gonads 6x4, 14x7, 5x3 (gran.).

SCALE-BACKED ANT BIRD *Hytophylax poecilonota vidua*

5 ♂s, 4 ♀s, MPEG 41853-60, Estrada Breves-Anajás km 18, 26, 26, 26 Nov, 7, 7 Dec, 26, 26 Nov, 5, 9 Dec 1987, terra firme forest, gonads 3x2, 3x2, 4x3, 1x1, 1x1, 5x7 (gran.), 4x6 (gran.), 3x2 (smooth), 4x4 (gran.).

8 ♂s, 4 ♀s, 3 imm. ♂s, MPEG 41688-702, Breves, Rio Caruaca, sítio Castanhal, 22, 24, 27 Feb, 1, 5, 8, 7, 9 Mar, 20, 22, 27 Feb, 7 Mar, 20, 20 Feb, 1 Mar 1988, terra firme forest, gonads 3x2, 2x1, 2x1, 1x1, 1x1, 1x1, 1x1, 4x3 (smooth), 4x3 (smooth), 4x3 (gran.), 3x3 (gran.), 1x1, 1x1, 1x1.

BLACK-SPOTTED BARE-EYE *Phlegopsis nigromaculata confinis*

2 ♀s, MPEG 41861-2, Estrada Breves-Anajás km 18, 30 Nov, 7 Dec 1987, terra firme forest, gonads 5x4 (gran.), 6x5 (gran.).

FOREST ELAENIA *Myiopagis gaimardii subcinereus*

1 ♀, MPEG 44171, Cachoeira do Arari, Rio Caracará, povoação Pedras, 16 Jun 1989, terra firme forest, gonads 6x4 (gran.).

PLAIN-CRESTED ELAENIA *Elaenia cristata cristata*

1 ♂, MPEG 33144, Ponta de Pedras, Fazenda Cedro, 31 Jul 1978, col. M. Moreira, gonads 12x7.

SHORT-TAILED PYGMY-TYRANT *Myiornis ecaudatus ecaudatus*

1 ♀, MPEG 8967, Fazenda Teso São José, 23 Nov 1911, col. O. Bertram.

SNETHLAGE'S TODY-TYRANT *Hemitriccus minor minor*

3 ♂s, MPEG 41909-11, Estrada Breves-Anajás km 18, 28 Nov, 2, 9 Dec 1987, terra firme forest, gonads 2x1, 3x2, 5x2.

2 ♂s, MPEG 41715-6, Breves, Rio Caruaca, sítio Castanhal, 27 Feb, 3 Mar 1988, terra firme forest, gonads 1x1.

GRAY-CROWNED FLYCATCHER *Tolmomyias poliocephalus sclateri*

1 ♀, PEG 32865, Ponta de Pedras, Fazenda Cedro, 24 Jul 1978, col. M. Moreira, ovary gran.

1 ♂, MPEG 44161, Cachoeira do Arari, Rio Caracará, povoação Pedras, 13 Jun 1989, terra firme forest, gonads 7x4.

CINNAMON-CRESTED SPADEBILL *Platyrinchus saturatus saturatus*

3 ♂s, MPEG 41709-11, Breves, Rio Caruaca, sítio Castanhal, 22 Feb, 5, 7 Mar 1988, terra firme forest, gonads 3x1, 2x1, 2x1.

WHITE-CRESTED SPADEBILL *Platyrinchus platyrhynchos amazonicus*

1 ♂, MPEG 41912, Estrada Breves-Anajás km 18, 11 Dec 1987, terra firme forest, 3x2.

2 ♂s, 1 ♀, MPEG 41712-3, Breves, Rio Caruaca, sítio Castanhal, 5, 8, 5 Mar 1988, terra firme forest, gonads 2x1, 2x1, 5x4 (smooth).

ROYAL FLYCATCHER *Onychorhynchus coronatus coronatus*

1 ♀, MPEG 41906, Estrada Breves-Anajás km 18, 9 Dec 1987, terra firme forest, gonads 3x4 (smooth).

1 ♂, MPEG 41708, Breves, Rio Caruaca, sítio Castanhal, 27 Feb 1988, terra firme forest, gonads 6x3.

SULPHUR-RUMPED FLYCATCHER *Myiobius barbatus barbatus*

1 ♂, MPEG 32864, Ponta de Pedras, 21 Jul 1978, col. M. Moreira, gonads 5x2.

1 ♂, 1 ♀, MPEG 41907-08, Estrada Breves-Anajás, km 18, 7 Dec 1987, terra firme forest, gonads 5x3, 7x5 (gran.).

15 ♂s, 1 ♀, 1 unsexed, MPEG 44144-60, Cachoeira do Arari, Rio Caracará, povoação Pedras, 2, 4, 4, 5, 7, 8, 8, 9, 10, 10, 15, 15, 15, 21, 21, 1, 4 Jun, 1989, terra firme forest, gonads 5x3, 1x1, 7x4, 6x4, 7x4, 5x3, 2x1, 4x2, 6x3, 6x4, 6x3, 5x3, 6x3, 6x4, 5x3, 4x2 (gran.).

CINEREOUS MOURNER *Laniocera hypopyrra*

1 ♂, MPEG 41905, Estrada Breves-Anajás km 18, 7 Dec 1987, terra firme forest, gonads 2x2.

BROWN-CRESTED FLYCATCHER *Myiarchus tyrannulus bahiae*

1 ♂, MPEG 44143, Cachoeira do Arari, Rio Caracará, povoação Pedras, 3 Jun 1989, terra firme forest, gonads 4x2.

VARIEGATED FLYCATCHER *Empidonomus varius rufinus*

1 ♀, MPEG 8960, Fazenda Teso São José, col. O. Martins, 20 Nov 1911.

THRUSH-LIKE MANAKIN *Schiffornis turdinus wallacii*

1 ♂, 1 ♀, 1 unsexed, MPEG 41867-9, Estrada Breves-Anajás km 18, 26, 28, 27 Nov 1987, terra firme forest, gonads 6x3, 6x5 (smooth).

DWARF TYRANT-MANAKIN *Tyrannetes stolzmanni*

1 ♂, MPEG 41903, Estrada Breves-Anajás km 18, 11 Dec 1987, terra firme forest, gonads 6x4.

WHITE-BEARDED MANAKIN *Manacus manacus longibarbatu*

1 imm. ♂, 1 ♂, 1 ♀, MPEG 8976-8, Fazenda Teso São José, 27, 27 Nov, 1 Dec 1911, col. O. Martins.

3 ♂s, MPEG 32895-7, Ponta de Pedras, Fazenda Cedro, 26 Jul 1978, col. M. Moreira, gonads 3x2, 4x3, 4x4.

1 ♀, MPEG 41902, Estrada Breves-Anajás km 18, 30 Nov 1987, terra firme forest, gonads 9x7 (gran.).

3 ♀s, MPEG 41738-40, Breves, Rio Caruaca, sítio Csatanhál, 25, 25 Feb, 3 Mar 1988, terra firme forest, gonads 6x6 (gran.), 4x4 (gran.).

7 ♂s, 8 ♀s, 5 imm. ♂s, MPEG 44115-34, Cachoeira do Arari, Rio Caracará, povoação Pedras, 1, 2, 3, 8, 9, 19, 24, 1, 1, 5, 8, 8, 9, 9, 16, 1, 1, 6, 6, 7 Jun 1989, terra firme forest, gonads 2x1, 2x1, 2x1, 1x1, 2x1, 1x1, 3x2, 6x4 (gran.), 6x3 (gran.), 6x3 (smooth), 6x3 (gran.), 6x3 (gran.), 5x3 (gran.), 5x2, 5x3 (gran.), 2x1, 2x1, 1x1, 1x1, 1x1.

1 ♂, MPEG 50795, Cachoeira do Arari, Rio Caracará, povoação Pedras, 4 Mar 1989, terra firme forest, gonads 6x3.

WHITE-CROWNED MANAKIN *Pipra pipra separabilis*

4 ♂s, 11 ♀s, 10 imm. ♂s, MPEG 41870-89, 41893-4, 41898-900, Estrada Breves-Anajás km 18, 26, 27, 27 Nov, 4 Dec, 27, 30, 30, 30, 30 Nov, 3, 7, 7 Dec, 27, 27, 30 Nov, 2, 3, 3, 5, 5 Dec, 30, 30 Nov, 7, 3, 4 Dec 1987, terra firme forest, gonads 5x3, 5x3, 5x2, 5x3, 5x4 (gran.), 7x5 (gran.), 5x5 (gran.), 3x4 (gran.), 4x4 (smooth), 4x4 (gran.), 5x4 (gran.), 5x5 (gran.), 3x4 (smooth), 6x4 (gran.), 4x4 (smooth), 4x2, 3x2, 4x2, 1x1, 5x3, 5x3, 5x3, 1x1, 2x1, 1x1.

3 ♂s, 11 ♀s, 2 imm. ♂s, MPEG 41722-37, Breves, Rio Caruaca, sítio Castanhál, 22, 23 Feb, 8 Mar, 22, 22, 22, 22, 25, 25, 26, 26, 22, 23, 25 Feb, 2 Mar 1988, terra firme forest, gonads 7x4, 6x4.

6x3, 2x2 (smooth), 5x4 (smooth), 4x4 (gran.), 4x3 (gran.), 4x3 (gran.), 9x7 (gran.), 5x5 (gran.), 1x1 (smooth), 3x2 (gran.), 1x1 (smooth), 6x5 (gran.), 1x1.

RED-HEADED MANAKIN *Pipra rubrocapilla*

2 ♂s, 4 ♀s, 1 unsexed, MPEG 41890-2, 41895-7, 41891, Estrada Breves-Anajás km 18, 7, 9 Dec, 27 Nov, 2, 2, 4, 2 Dec 1987, terra firme forest, gonads 6x4, 5x3, 6x8 (gran.), 6x4 (gran.), 5x6 (gran.), 6x5 (gran.).

1 imm. ♂, MPEG 41720, Breves, Rio Caruaca, sítio Castanhal, 23 Feb 1988, terra firme forest, gonads 1x1.

1 ♀, MPEG 41721, Breves, Rio Caruaca, sítio Marajoara, 2 Mar 1988, terra firme forest, gonads 5x4 (gran.).

1 ♂, 1 ♀, 1 imm. ♂, MPEG 44084-6, Cachoeira do Arari, Rio Caracará, povoação Pedras, 6, 8, 4 Jun 1989, terra firme forest, gonads 2x1, 5x3 (gran.), 2x1.

SCREAMING PIHA *Lipaugus vociferans*

1 ♀, MPEG 32963, Ponta de Pedras, Fazenda Cedro, col. M. Moreira, ovary gran.

1 ♂, MPEG 41866, Estrada Breves-Anajás km 18, 8 Dec 1987, terra firme forest, gonads 13x6.

2 ♂s, MPEG 41703-4, Breves, Rio Caruaca, sítio Castanhal, 20, 25 Feb 1988, terra firme forest, gonads 10x5, 7x4.

WHITE-TAILED COTINGA *Xipholena lamellipennis*

1 ♂, MPEG 44080, Cachoeira do Arari, Rio Caracará, povoação Pedras, 24 Jun 1989, terra firme forest, gonads 10x5.

SOUTHERN ROUGH-WINGED SWALLOW *Stelgidopteryx ruficollis*

The most common swallow along the Breves Channel, seen flying close over the water or perched alone or in small flocks.

NIGHTINGALE WREN *Microcerculus marginatus marginatus*

2 ♂s, 1 ♀, MPEG 41919-21, Estrada Breves-Anajás km 18, 27 Nov, 5, 11 Dec 1987, terra firme forest, gonads 5x3, 8x5, 6x4 (gran.).

WHITE-NECKED THRUSH *Turdus albicollis phaeopygus*

1 ♂, MPEG 41918, Estrada Breves-Anajás km 18, 3 Dec 1987, terra firme forest, gonads 2x1.

RUFIOUS-BROWED PEPPERSHRIKE *Cyclarhis gujanensis gujanensis*

1 unsexed, MPEG 32969, Ponta de Pedras, Fazenda Cedro, 31 Jul 1978, col. M. Moreira.

RIVER WARBLER *Basileuterus rivularis mesoleuca*

1 ♂, MPEG 41922, Estrada Breves-Anajás km 18, 27 Nov 1987, terra firme forest, gonads 1x1.

PECTORAL SPARROW *Arremon taciturnus taciturnus*

1 ♂, 1 ♀, MPEG 41942-3, Estrada Breves-Anajás km 18, 7, 9 Dec 1987, terra firme forest, gonads 8x5, 3x4 (smooth).

1 ♂, 1 ♀, MPEG 41746-7, Breves, Rio Caruaca, sítio Castanhal, 29 Feb, 1 Mar 1988, terra firme forest, gonads 8x5, 4x3 (gran.).

6 ♂s, 4 ♀s, 1 imm. ♂, MPEG 44203-13, Cachoeira do Arari, Rio Caracará, povoação Pedras, 1, 1, 5, 5, 6, 8, 5, 5, 7, 12, 17 Jun 1989, terra firme forest, gonads 4x2, 2x1, 1x1, 1x1, 1x1, 2x1, 5x3 (smooth), 6x4 (smooth), 7x4 (gran.), 2x1, 6x3 (smooth).

BLUE-BLACK GROSBEAK *Passerina cyanooides rothschildii*

2 ♂s, 2 ♀s, MPEG 41935-8, Estrada Breves-Anajás km 18, 5, 9, 4, 8 Dec 1987, terra firme forest, gonads 6x4, 4x3, 6x5 (gran.), 6x4 (gran.).

1 ♂s, 1 imm. ♂, 1 ♀, MPEG 41742-4, Breves, Rio Caruaca, sítio Castanhal, 2, 5, 2 Mar 1988, terra firme forest, gonads 10x7, 9x7, 6x5 (gran.).

FULVOUS-CRESTED TANAGER *Tachyphonus surinamus insignis*

1 ♂, 1 ♀, MPEG 2036-37, Western Marajó, Rio Macujubim, 6 Sep 1901, col. G. Hagmann.

2 ♂s, 5 ♀s, MPEG 41928, Estrada Breves-Anajás km 18, 9, 9, 2, 4, 4, 7, 10 Dec 1987, terra firme forest, gonads 9x5, 9x5, 7x6 (gran.), 7x5 (gran.), 6x5 (gran.), 5x4 (gran.), 5x4 (gran.).

1 imm. ♂, MPEG 41741, Breves, Rio Caruaca, sítio Castanhal, 3 Mar 1988, terra firme forest, gonads 1x1.

WHITE-LINED TANAGER *Tachyphonus rufus*

1 ♂, 1 ♀, MPEG 32880-1, Ponta de Pedras, Fazenda Tucumã, 8 Aug 1978, col M. Moreira, gonads 3x2, ovary gran.

GOLDEN-SIDED EUPHONIA *Euphonia cayennensis*

1 imm. ♂, MPEG 41927, Estrada Breves-Anajás km 18, 9 Dec 1987, terra firme forest, gonads 1x1.

GREEN HONEYCREEPER *Chlorophanes spiza spiza*

1 ♂, MPEG 41926, Estrada Breves-Anajás km 18, 5 Dec 1987, terra firme forest, gonads 8x6.

RED-LEGGED HONEYCREEPER *Cyanerpes cyaneus cyaneus*

1 ♀, 41925, Estrada Breves-Anajás km 18, 30 Nov 1987, road edge in terra firme forest, gonads 5x4 (smooth).

1 imm. ♂, MPEG 44191, Cachoeira do Arari, Rio Caracará, povoação Pedras, 23 Jun 1989, terra firme forest, gonads 2x1.

PURPLE HONEYCREEPER *Cyanerpes caeruleus caeruleus*

1 ♀, MPEG 41924, Estrada Breves-Anajás km 18, 9 Dec 1987, terra firme forest, gonads 6x6 (gran.).

ACKNOWLEDGEMENTS

We are grateful to the John D. and Catherine T. MacArthur Foundation (Chicago, USA), World Wildlife Fund-US, the Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq (Brasília, Brazil), and the Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renováveis-IBAMA (Brasília, Brazil), for support of our research on the birds of Marajó.

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