THE MACHRIS BRAZILIAN EXPEDITION
ORNITHOLOGY: NON-PASSERINES

By Kenneth E. Stager
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The MACHRIS BRAZILIAN EXPEDITION from the Los Angeles County Museum was sponsored by Mr. and Mrs. Maurice A. Machris and Mrs. Maybell Machris Low. It was conducted under the auspices of the Museu Nacional do Brasil. Botanical and zoological collections were made from April through June, 1956, in the region of the headwaters of the Rio Tocantins in the state of Goiás. General accounts and itineraries are given in papers 1 and 2 of this series. Technical type specimens of new entities are deposited in the Museu Nacional in Rio de Janeiro.

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The Machris Brazilian Expedition of 1956 to Central Goiás made possible the ornithological investigation of a portion of the Planalto Central of the Brazilian interior that has heretofore received relatively little attention from biologists (Fig. 1). This lack of attention has been due largely to the remoteness of the area and its difficulty of access. With the gradual extension of a road net from the sea coast northwestward toward the site of the new federal capital of Brasilia, accessibility to the vast regions of Central Goiás has been improved.

For a general account of the expedition’s itinerary and accomplishments see Delacour (1957). The vegetative aspects of the survey area are well covered by Dawson (1957). Information presented in the two above-mentioned papers will not be repeated here except when it bears specifically on avifaunal considerations.

Ornithological exploration of southern Goiás appears to have begun with the visit of Auguste de Saint Hilaire in 1816 (Pinto, 1936), followed by the work of Count Castlenua and Monsieur Deville in 1844 and 1845. In 1893, Natterer collected at Jaraguá, Boa Vista, and Inhumas (Pelzeln, 1868). The collections made in 1906 by Monsieur G. A. Baer have been reported on in detail by Hellmayr (1908). Extensive field work was conducted by Pinto and Garbe in the Rio das Almas and Inhumas area in 1934 and fully reported on by Pinto (1936). The activities of the above-mentioned persons were concentrated in the southern portion of the state and included very little of the more remote areas to the north that were investigated by our field party. Castlenua and Deville ventured as far north as Amaro Leite (see Fig. 2). J. Blaser apparently spent considerable time on the Rio São Domingo and on the Canna Brava of central Goiás, as shown by numerous specimens collected between December 1931 and June 1933 and listed by Pinto (1938) in his “Catalogo das Aves do Brasil.” Dr. Rudolf Pfrimer is known to have collected birds at Santa Maria de Taguatinga on the east central border of Goiás sometime prior to 1920, but I am not aware of the exact dates or his collecting itinerary.

On April 12, 1956, the Machris Brazilian Expedition crossed the Paraná-Amazonian divide and established its first base camp 20 kms. north of São João da Aliança at the headwaters of the Rio Tocantins (Fig. 2). This portion of the Planalto Central is known as the Chapada dos Veadeiros and consists of gently rolling hills covered with “cerrado” forest or open grassland, intersected by numerous small streams bordered with dense stands of gallery forest (Dawson, 1957). Extensive field work

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Fig. 1. Map of South America showing study area of Machris Brazilian Expedition.
Fig. 2. Detail map showing collecting localities of Machris Brazilian Expedition.
was conducted in this area until May 7, 1960, when operations were shifted to the second base camp located in the Serra Dourada area (Fig. 2), 20 kms. east-southeast of Formoso. In this latter area the terrain was found to be more hilly with some “cerrado” forest. Gallery forest occurred along many of the stream courses, but to the east of the base camp area the dense forest growth proved to be continuous between stream courses and of such magnitude and composition as to be designated as primary forest (Dawson, 1957). Field work was continued in the Serra Dourada area from May 12 to June 15, when activity ceased and preparations were made for the return to São Paulo and Los Angeles.

At both study areas on the Planalto Central the vegetative associations were well defined and each was characterized by an equally well differentiated avifauna. The following avian species have been selected as representative of the various plant associations investigated during our stay in central Goiás.

### Open Cerrado-Savannah

| Rhea americana | Eupetomena macroura |
| Rhynchotus rufescens | Colibri serrirostris |
| Nothura maculosa | Nystalus chacuru |
| Theristicus caudatus | Colaptes campestris |
| Buteo magnirostris | Lepidocolaptes angustirostris |
| Milvago chimachima | Geobates poecilopterus |
| Falco sparverius | Furnarius rufus |
| Cariama cristata | Xolmis velata |
| Belanopterus chilensis | Minus saturnius |
| Aratinga aurea | Neothraupis fasciata |
| Guira guira | Saltator atricollis |

### Dense Cerrado

| Crypturellus parvirostris | Glaucidium brasiliannum |
| Heterospizias meridionalis | Nyctidromus albicollis |
| Campsoponyx sweainsonii | Baryphthengus ruficapillus |
| Penelope superciliaris | Ramphastos toco |
| Ara nobilis | Leuconerpes candidus |
| Amazona xanthops | Icterus cayanensis |
| Piaya cayana | Cypsnagra hirundinacea |

### Gallery Forest

| Crypturellus undulatus | Dryocopus lineatus |
| Mesembrinibis cayennensis | Dendrocolaptes platyrostris |
| Aramides cajanea | Sclerurus scansor |
| Trogon surrucura | Thamnophilus caerulescens |
| Baryphthengus ruficapillus | Antilophia galeata |
| Columba plumbea | Cyanocorax cyanopogon |
| Ara ararauna | Tangara cayana |
| Veniliornis passerinus | Arremon flavirostris |
Primary Forest

Crypturellus soui
Sarcoramphus papa
Chondrohierax uncinatus
Spizaëtus ornatus
Crax fasciolata
Aratinga jandaya
Trogon curucui
Trogon strigulatus
Momotus momota
Monasa nigrifrons
Ramphastos vitellinus
Phloeoceastes rubricollis
Phloeoceastes melanoleucus
Xiphorynchus guttatus
Automolus leucophthalmus
Thamnophilus punctatus
Oxyruncus cristatus
Pipra fasciicauda
Thryothorus genibarbis
Xanthornus decumanus

A total of 40 collecting days in central Goiás resulted in a collection of 859 specimens of birds. A detailed study of this material, aided by the vast reference collections at the American Museum of Natural History in New York, has resulted in many new avian records for the state of Goiás, numerous range extensions, and the description of two new subspecies (Stager, 1960). The study area proved to be a zone of intergradation for a large number of polytypic species, and many confusing taxonomic problems have been clarified as a result of this field work. During the course of this cooperative project between the Los Angeles County Museum and the Museu Nacional do Brasil, I was aided throughout by the able assistance of Herbert F. Berla, ornithologist on the staff of this latter institution in Rio de Janeiro. I cannot speak too highly of the help I received from Mr. Berla, for it was his excellent knowledge of the avifauna of Brazil that made our ornithological efforts in Goiás a real success. Dr. Jean Delacour participated actively in the field work in the Chapada dos Veadeiros area and not only aided in the task of specimen preparation, but was also responsible for securing many of the more desirable species. Throughout the course of the work in Goiás, Mr. and Mrs. Maurice A. Machris served as untiring collectors, and a large portion of the collection is the result of their enthusiastic work.

All specimens mentioned are in the collection of the Los Angeles County Museum except for types, which are deposited in the Museu Nacional do Brasil.

The non-passerine birds of the Goiás collection are treated in this paper. An account of the passerines will appear in a second paper to follow shortly.

SPECIES ACCOUNT

Rhea americana americana (Linnaeus)  American Rhea

Rheas were frequently encountered in small bands of two to four birds throughout the Chapada dos Veadeiros. In this region they were found in fairly open cerrado forest and grassy savannah areas. Although generally quite wary, it was often possible to approach within close range of them.
An adult ♀ (LACM 32373) collected in open grassland, 20 kms. north of São João da Aliança, April 18, 1956, weighed 35 lbs. The tarsus measures 345 mm., and the culmen 76.5 mm.

*Crypturellus soui albigeraris* (Brabourne and Chubb) PILEATED TINAMOU

Although an abundant species in the forest area of the Serra Dourada, this tinamou was not encountered in the gallery forest of the Chapada dos Veadeiros. Comparison of Serra Dourada specimens with a large series in the American Museum of Natural History from various localities south of the Amazon discloses no appreciable variation. Measurements: 2 ♂ ♀, wing 126, 127 mm., culmen 20, 16.4 mm.

*Crypturellus undulatus vermiculatus* (Temminck) BANDED TINAMOU

Found abundantly in both study areas. Although noted most frequently in primary forest, it was also found to frequent the narrow gallery forest of small stream courses. Collections: 3 ♂ ♀, 20 kms. N. of São João da Aliança; 1 ♂, 48 kms. S. of Peixe; 1 ♀, 24 kms. S.E. of Formoso.

*Crypturellus parvirostris* (Wagler) SMALL-BILLED TINAMOU

These small tinamou were collected in the vicinity of base camp #1 where they were encountered in gallery forest along the small stream courses. The species was not met with in the Serra Dourada area, but may have been overlooked. Examination of a large series of skins of this species in the collections of AMNH indicates that the species *parvirostris* is badly in need of revision. The specimens taken by us tend towards the dark coloration of birds from the south in contrast to lighter colored birds from northeastern Brazil. On the other hand, they tend to be larger than specimens from the Rio Madeira area to the west.

1 ♂ and 1 ♀, 20 kms. N. of São João da Aliança.

*Rhynchotus rufigens rufigens* (Temminck) RUFIOUS TINAMOU

A common species in the cerrado and open grasslands of the Chapada dos Veadeiros. Less abundant in the cerrado areas of the Serra Dourada.

Specimens from the Chapada dos Veadeiros are large and light colored and resemble typical skins of *R. r. rufigens* from the São Paulo area, while the specimen from the Serra Dourada is smaller and darker and approximates *R. r. catinogae* of the Rio Madeira and Bahia areas. It would seem that a critical study of this species is badly needed.

1 ♀, 20 kms. N. of São João da Aliança; 1 ♂, 24 kms. S.E. of Formoso.

*Nothura maculosa major* (Spix) SPOTTED TINAMOU

Spotted Tinamou occur abundantly in the Chapada dos Veadeiros where they frequent open grassy savannahs and scattered cerrado. The species was not met with in the Serra Dourada area. All specimens taken agree with Conover’s (1942) differentiation of the races *maculosa* and *major*. All specimens are paler than *maculosa* and the neck markings are streaks rather than spots.
1 ♂ and 1 ♀, 20 kms. N. of São João da Aliança; 1 ♂, near Braslandia (west of Planaltina).

*Podiceps dominicus speciosus* (Arribalzaga)  
**Least Grebe**  
The least grebe was the only species of grebe encountered during the course of field work in Goiás and it was found on only one occasion. The scarcity of quiet ponds and lagoons in the study area readily explains the absence of birds of this type. However, a small pond situated among several acres of cleared land, approximately 28 kms. southeast of Formoso, supported a small number of grebes. On June 10, 1956, an adult ♂ (LACM 32289) was collected from this pond.

*Butorides striatus striatus* (Linné)  
**Striated Heron**  
Striated herons were generally to be found in and around any sizeable pond or marsh area. An adult ♀ was collected May 24, 1956 from the margin of the pond mentioned above.

*Theristicus caudatus caudatus* (Boddaert)  
**White-throated Ibis**  
A common species on open grassy savannahs and about clearings on the Chapada dos Veadeiros. In this area small flocks of ten to twenty birds were frequently found foraging for insects.

*Mesembrinibis cayennensis* (Gmelin)  
**Cayenne Ibis**  
Solitary individuals and single pairs of this large, dark colored ibis were often flushed from the deep shaded banks of stream courses in the gallery forests of the Chapada dos Veadeiros. The species was never noted as common in the above area. An adult ♂ and ♀ were collected April 21, 1956, 20 kms. N. of São João da Aliança.

*Neochen jubata* (Spix)  
**Orinoco Goose**  
The only Anserine collected during the course of our field work in Goiás was an adult ♂ of this species, taken by Maurice A. Machris, June 1, 1956 on the Rio Araguaia, near Ilha do Bananal. In this area Machris noted the species as common. Ducks and geese were scarce on the Chapada dos Veadeiros, and the only species observed was *Cairina moschata*, which was frequently encountered singly and in pairs along the forested stream courses but was not collected.

*Sarcoramphus papa* (Linné)  
**King Vulture**  
Although noted frequently in the gallery forests of the Chapada dos Veadeiros and the primary forest of the Serra Dourada, this large species was never found in large numbers. An adult ♂ was collected on June 20, 1956, 20 kms. N. of São João da Aliança. Two other species of vultures, *Coragyps atratus* and *Cathartes aura* were present in both areas in considerable numbers, but no specimens were collected of either species.

*Chondrohierax uncinatus uncinatus* (Temminck)  
**Hooked-billed Kite**  
On May 25, 1956, while collecting in heavy primary forest of the Serra Dourada, 28 kms. S.E. of Formoso, I attracted an adult ♂ of this
species while “squeaking” for birds. Five days later on May 30, 1956 at the same spot in the forest I lured a second bird into range with the same technique. The second specimen was an adult ♂ and possibly the mate of the former bird. In plumeage, both specimens are quite uniform for the species, which is one that frequently shows considerable individual variation.

*Harpagus diodon* (Temminck)  
**Rufous-thighed Hawk**

An adult ♂ (LACM 32320) of this species was collected on April 18, 1956, in heavy gallery forest, 20 kms. north of São João da Aliança. According to Delacour, the bird responded to “squeaking” at the edge of a road clearing. This specimen evidently constitutes the first record of the species for Goiás, for Pinto (1938) does not record it from Goiás, and Hellmayr (1908) does not list it among the species taken by Baer. Measurements are: wing 201, tail 143, culmen (from cere) 16.4 mm.

*Accipiter bicolor pileatus* (Temminck)  
**Pileated Accipiter**

A single specimen (LACM 32311) was collected on April 16, 1956, in heavy gallery forest, 20 kms. north of São João da Aliança. The bird is a juvenile ♂ with a few dorsal feathers of the back showing adult coloration.

*Accipiter erythronemius erythronemius* Kaup  
**Red-thighed Accipiter**

A fairly common species in both study areas. An adult ♂ was taken in gallery forest adjacent to our base camp north of São João da Aliança and two additional specimens (an adult ♀ and a juvenile ♂) were secured in the Serra Dourada, 24 kms. S.E. of Formoso. These specimens are apparently the first records for Goiás, although the species is to be expected there within its wide range from Central America to the Argentine. The above specimens compare favorably in size and coloration with a series of the nominate race in the American Museum of Natural History.

*Heterospizius meridionalis* (Latham)  
**Savannah Hawk**

A single specimen of this wide-spread species was collected at the margin of a large marsh in heavy cerrado, 48 kms. north of Porangatú, between the Serra Dourada and Peixe, on June 7, 1956. The specimen, an adult ♀ (LACM 32299), has a wing of 405 and tail of 200 mm.

*Buteo magnirostris nattereri* (Sclater and Salvin)  
**Large-billed Hawk**

Small buteos of this species were found to be exceedingly common in the cerrado of both study areas. They were frequently encountered on the margin of gallery forest and primary type forest, but never appeared to penetrate either of these latter forest types. The individuals encountered were not the least bit shy and could be approached quite closely. A total of six specimens was secured, and examination of this series shows them to be intermediate between subsp. *nattereri* and *magniplumis* of the south. All specimens have the short wing of *nattereri* as well as the variegated whitish throat of this race. The breasts of the Goiás series
are not as uniformly rufous as in nattereri, but are more striated as in magniplumis. In dorsal aspect all birds are intermediate between the two forms. In evaluating all differences, the series of specimens tends to resemble nattereri more closely than magniplumis.

**Buteo nitidus pallidus** (Todd)  
**GRAY HAWK**

The gray hawk may be more abundant in Goiás than our observations indicate, for the species was encountered but once during the course of our field work. On June 5, 1956, a juvenile *♂* (LACM 32301) was collected at the edge of a fazenda clearing, in heavy cerrado 40 kms. south of Peixe. In ventral aspect the specimen is very light with white rather than buff markings. There is some buff on the sides of the head as well as on the primary wing coverts. The wing measures 250, and the tail 168 mm.

**Busarellus nigricolis nigricollis** (Latham)  
**BLACK-COLLARED HAWK**

A common species in the cerrado, especially around the margins of swampy areas. A single adult *♂* (LACM 32300) was secured on June 7, 1956, 48 kms. north of Porangatá: wing 398, tail 187 mm.

**Spizaetus ornatus ornatus** (Daudin)  
**HAWK EAGLE**

Hawk eagles were encountered only in the Serra Dourada area. The species was not common, but individuals would occasionally be seen soaring over clearings in the heavy primary forest. The natives of the area were very familiar with the species, and on May 19, 1956 an adult *♂* was brought to us alive by a caboclo who stated that he had trapped it near its nesting site. A second specimen, also an adult *♂*, was secured on May 31, 1956, in heavy primary forest. Both specimens are in fresh plumage and are typical of this wide ranging species. Measurements: wing 350, 325, tail 243, 232, culmen (from cere) 28, 26.3 mm.

**Herpetotheres cachinnans cachinnans** (Linné)  
**LAUGHING HAWK**

Laughing hawks were frequently heard calling in the Serra Dourada area, but seldom seen. An adult *♂* was taken June 7, 1956, in heavy gallery forest, 18 kms. east of Formoso: wing 267, tail 202, culmen (from cere) 22.2 mm.

**Micrastur ruficollis ruficollis** (Vieillot)  
**RED-NECKED HARRIER-HAWK**

Although there appear to be very few previous records for the species’ occurrence in Goiás, it has been recorded from Matto Grosso to the southwest as well as to the east. A single adult *♂* was taken on April 21, 1956, in heavy gallery forest 20 kms. north of São João da Aliança. The specimen is in the “plumbeous phase” with but a faint wash of rufous on the throat and wings. The head is gray and the black striations of the ventral area are very narrow. Measurements: wing 168, tail 166, culmen (from cere) 14.2 mm.

**Daptphus americanus americanus** (Boddaert)  
**RED-THROATED CARACARA**

Noted as common in the Serra Dourada area. These strikingly-colored caracaras most generally were observed travelling in pairs and,
in contrast to the common _Caracara plancus_, were quite wary and difficult to approach. An adult ♀ in molt was taken on June 7, 1956, in the Serra Dourada: wing 365, tail 250, culmen (from cere) 25.5 mm.

_Milvago chimachima chimachima_ (Vieillot) **CHIMACHIMA CARACARA**

An exceedingly common species in both study areas, but most frequently noted in cerrado type associations.

_Caracara plancus plancus_ (Miller) **COMMON CARACARA**

Abundant on the Chapada dos Veadeiros and in the Serra Dourada. Caracaras were encountered most frequently in the cerrado and in the vicinity of cleared forest areas of the Serra Dourada.

_Gampsomyx swainsonii swainsonii_ Vigors **PEARL KITE**

The small pearl kite was not encountered in the vicinity of the base camp on the Chapada dos Veadeiros, but was fairly common in the Serra Dourada area and the cerrado region south of Peixe. Individuals were found to frequent the margins of forest clearings where they foraged from vantage spots atop isolated trees left standing in the fazenda clearings. Their behavior and flight is much like that of the white-tailed kite (_Elanus leucurus_). Measurements of specimens collected are as follows: ♂, Serra Dourada, wing 155, tail 95, culmen (from cere) 13.2 mm.; ♀, Serra Dourada, wing 157, tail 94, culmen (from cere) 13.1 mm.; ♂, 24 kms. south of Peixe, wing 149, tail 88, culmen (from cere) 13.2 mm.

_Falco sparverius ceareae_ (Cory) **SPARROW HAWK**

Exceedingly common on the Chapada dos Veadeiros in cerrado forest areas. Two ♂ ♀ taken 20 kms. north of São João da Aliança show five black bars on the inner web of the outermost rectrix. Both specimens also possess the grayish tail-tips of race _ceareae_.

_Crax fasciolata fasciolata_ Spix **CURASSOW**

Although seldom seen, this large curassow is apparently fairly common in the heavy primary forest of the Serra Dourada and is well known to the local caboclos who hunt them for food. This is accomplished by the hunter locating a fruiting tree where the curassows come to feed, secreting himself below and shooting the birds as they quietly fly into the tree for fruit. Two specimens, an adult ♂ and ♀, were secured in this manner by a local hunter and brought to us. The specimens compare favorably with a large series of the nominate race _fasciolata_ from the Rio Araguaia in the American Museum collection. Measurements: ♂ wing 393, tail 367; ♀ wing 350, tail 321 mm.

_Penelope superciliaris jacupemba_ Spix **SPIX’S GUAN**

A common and wide-spread species in central Goiás. Guans were noted in gallery forest and dense adjacent cerrado on the Chapada dos Veadeiros.

In the Serra Dourada area the species occurs commonly in heavy
primary forest, where it feeds in the tops of tall fruiting trees.

The four specimens secured by us in central Goiás agree with a large series of *jacupemba* in the American Museum. The superciliary stripe in all four specimens is grayish rather than ochraceous, and the frontal grayish band joining the superciliaries, which Neumann (1932) gives as the principal character for his race *argyromitra*, is present in three (Serra Dourada) of the four LACM specimens. As pointed out by Hellmayr (1942), however, this character is highly variable, and he synonymized *argyromitra* with *jacupemba*. The single LACM specimen from the Chapada dos Veadeiros area has the ochraceous margins of the wing feathers much narrower than as shown by the three specimens from the Serra Dourada. Measurements of the four specimens are as follows: ♂, 20 kms. N. of São João da Aliança, wing 251, tail 285 mm.; ♀, Serra Dourada, wing 253, tail 299 mm.; ♂, Serra Dourada, wing 241, tail 283 mm.; ♀, Serra Dourada, wing 235, tail 290 mm.

*Aramides cajanea cajanea* (P. L. S. Müller)

Wood Rail

Wood rails occur commonly in the gallery forests of the Chapada dos Veadeiros and in the primary forests of the Serra Dourada. A total of seven specimens were obtained (4 Chapada dos Veadeiros and 3 Serra Dourada). All specimens were purchased alive from local caboclos who trap them with great ease.

The LACM series from both areas in Goiás are remarkably uniform, indicating that a careful study of large series of South American specimens might enable someone to bring order out of the confused subspecies problem which surrounds this species in the South American portion of its range. Hellmayr and Conover (1942), after examining a series of 80 specimens from all parts of its range, concluded that there was too much individual variation among the South American specimens to warrant any decision other than lumping all of them under the nominate subspecies *cajanea*. This conclusion may be correct, but the problem may deserve re-examination. Wing measurements of the LACM Goiás series are 4 ♂♂ 195, 3 ♀ ♀ 185, 189, 190 mm.

*Cariama cristata* (Linné)

Seriemas or cariamas are very abundant in the cerrado forest of the Chapada dos Veadeiros and in cerrado areas of the Serra Dourada. The species was exceedingly abundant in the vicinity of our base camp, 20 kms. north of São João da Aliança, and the morning and evening chorus was of spectacular volume. Individuals continuously circled our camp areas and exhibited considerable curiosity, much as did the Rheas. An adult ♀ (LACM 32335) taken at the above locality on April 28, 1956, measures: wing 367, tail 317 mm.

*Belanopterus chilensis lampronotus* (Wagler)

Brazilian Lapwing

A very common species in suitable open areas on both the Chapada dos Veadeiros and in the Serra Dourada. An adult ♂ and ♀ were
collected on April 13, 1956, 20 kms. north of São João da Aliança.

*Hoploxypterus cayanus* (Latham)  **CAYENNE PLOVER**

A single specimen was taken on June 7, 1956, 99 kms. north of Porangâti, on the road to Peixe. At this locality the species was noted as common about the margins of a large lagoon.

*Columba speciosa* Gmelin  **SCALED PIGEON**

Scaled pigeons were not recorded from the Chapada dos Veadeiros, but the species was found to be common in the heavy primary forest areas of the Serra Dourada. Two specimens were collected at this latter locality.

*Columba cayennensis sylvestris* Vieillot  **RUFIOUS PIGEON**

A common species about fazenda clearings in close proximity to gallery forest areas on the Chapada dos Veadeiros and in primary forest in the Serra Dourada. Two specimens taken at the above localities have the bicolor rectrices characteristic of the subspecies *sylvestris*.

*Columba plumbea baeri* Hellmayr  **PLUMBEOUS PIGEON**

Although present in the Serra Dourada area, the species was encountered much more frequently in the Chapada dos Veadeiros. In this latter locality plumbeous pigeons were found abundantly about fazenda clearings in gallery forest. A ♂ taken on May 1, 1956, 20 kms. north of São João da Aliança, was compared with the type of subsp. *baeri* and found to agree very well in size and color. The pale gray coloration of *baeri* immediately separates central Goiás specimens from the much darker nominate race *plumbea*.

*Scardafella squamata squamata* (Lesson)  **SCALED DOVE**

An exceedingly common species in central Goiás, occurring in many types of habitat with the exception of heavy primary forest. Even within such forest, the species is abundant in fazenda clearings and along road margins which are used as avenues of penetration.

*Columbigallina talpaci talpaci* (Temminck)  **TALPACOTI DOVE**

An abundant species in the Serra Dourada area, but relatively scarce on the Chapada dos Veadeiros, at least in the area of our greatest activity, 20 kms. north of São João da Aliança. An adult ♂ and ♀ were collected May 17, 1956, 24 kms. S.E. of Formoso (Serra Dourada).

*Claravis pretiosa* (Ferrari-Perez)  **CINEREOUS DOVE**

Although it ranges widely over South America, this small gray dove was encountered only in the Serra Dourada area where it is fairly abundant in suitable habitat. In the Serra Dourada it was noted most frequently in areas of intergradation between cerrado and primary forest. In such situations this dove commonly feeds in clearings, on oxcart roads and foot trails. Two ♂♂ and one ♀ were secured 24 kms. S.E. of Formoso.
Leptotila verreauxi decipiens (Salvadori)  
White-fronted Dove

A common and wide-spread species in central Goiás. Specimens were taken in both study areas. Central Goiás birds appear to agree more closely with subsp. decipiens in coloration, but approach subsp. approximans in size. Measurements of three ♂ ♀ are as follows: wing 138, 140, 142, tail 107, 110, 110, culmen 14.5, 15.0, 15.5, mm.

Leptotila rufaxilla reichenbachii (Peltzeln)  
Gray-fronted Dove

Gray-fronted doves are common on the Chapada dos Veadeiros, but were not noted in the Serra Dourada area. Two specimens, taken on April 23, 1956, 20 kms. north of São João da Aliança, agree with a large series of subsp. reichenbachii in the American Museum. One specimen is slightly lighter ventrally, tending towards subsp. bahiae, but the second bird, collected at the same locality on the same date, is darker as in subsp. reichenbachii. Dorsally, both specimens are identical.

Anodorhynchus hyacinthinus (Latham)  
Hyacinthine Macaw

The large hyacinthine macaw was not met with on the Chapada dos Veadeiros nor in the Serra Dourada area. It was observed in small flocks of three to six individuals in the cerrado country lying between the Serra Dourada and Peixe. In this region there are stands of heavy cerrado intersected by stream courses bordered with gallery forest or stands of the large fan-leaved Burity Palm, and it was in the close proximity of these stream courses that all small flocks of this macaw were observed. On June 6, 1956, one ♂ and two ♀ were collected from a flock of four birds, 50 kms. south of Peixe. All specimens agree in color with a series of skins in the American Museum. The measurements are as follows: wing ♂ 434, ♀ ♀ 416, 395; tail ♂ 555, ♀ ♀ 522, 490; culmen ♂ 90.5, ♀ ♀ 89.9, 83.5 mm.

A careful watch was kept for individuals of the rare Anodorhynchus leari, whose habitat is yet to be discovered, but no trace of the species was found in central Goiás.

Ara ararauna (Linné)  
Blue and Yellow Macaw

Blue and yellow macaws are very abundant in the cerrado of the Chapada dos Veadeiros and the Serra Dourada.

These noisy macaws usually traveled in pairs and could generally be seen overhead at any time of day. They frequent stream courses lined with the tall Burity Palm, feeding upon the palm nuts and using the palm trunks for excavation of nest sites. Three specimens, a ♂ and two ♀, were collected on the Chapada dos Veadeiros.

Ara severa castaneifrons Lafresnaye  
Brazilian Macaw

A single ♂ specimen was collected by Maurice A. Machris, June 5, 1956, on the Ilha do Bananal, Río Araguaia. Machris reported the species as being common in that area, but it was not met with in the Serra Dourada, nor on the Chapada dos Veadeiros.
Ara nobilis longipennis (Neumann)  

These small macaws were not recorded from the area of our first base camp on the Chapada dos Veadeiros, but were found to be very common in the Serra Dourada area where they showed a decided preference for the cerrado areas and fazenda clearings at the edge of primary forest. These gregarious birds travel about in flocks of 15 to 25.

Neumann’s race longipennis is based on size of wing and tail, with no apparent color difference. Examination of a large series of Ara nobilis (AMNH) from Brazil shows the presence of a good size-cline from south to north as is to be expected, with size decreasing from south to north. Birds of the nominate race nobilis north of the Amazon are much smaller than the birds of Pará and Maranhão which are assignable to cumanensis. The difference in size between southern birds from Matto Grosso (longipennis) and typical cumanensis to the north is not as great. LACM birds from the Serra Dourada are intermediate in size between longipennis and cumanensis and could be assigned to either of these two races. Due to the close proximity of Neumann’s type locality on the Rio São Miguel to the Serra Dourada, assignment is made to longipennis.

Measurements are as follows: ♂, wing 182-196, tail 165-183 mm.; ♀, wing 175-186, tail 160-162 mm.

Aratinga jandaya (Gmelin)  

The distribution of this brilliantly colored parrot in Goiás is evidently rather spotty, as it seems to have been missed by most workers in that area. The only records other than those of the LACM are three specimens listed by Pinto (1937) as taken by Blaser on the Rio São Domingo and the Canna Brava in 1932. During the course of our field work in Goiás, the species was encountered only in the Serra Dourada area where two ♂ and two ♀ were taken. The species was not found to be common, but would occasionally be met with in small flocks of ten to fifteen birds, or as solitary pairs and individuals. In all instances, the species was found in primary forest areas at the margin of clearings.

Aratinga aurea aurea (Gmelin)  

A common cerrado species of both the Chapada dos Veadeiros and the Serra Dourada. Flocks of 30 to 50 birds were encountered daily throughout the area. LACM Goiás birds are slightly smaller and paler than specimens from São Paulo and Matto Grosso.

Specimens collected: 3, 20 kms. north of São João da Aliança; 1, 7 kms. south of Veadeiros; 1, Serra Dourada.

Brotogeris versicolorus chiriri (Vieillot)  

An abundant species on the Chapada dos Veadeiros in gallery forest association and in primary forest areas of the Serra Dourada. Generally noted in very large flocks, sometimes numbering hundreds of individuals. LACM Goiás birds and those from Piauí and Maranhão are slightly
smaller and paler than specimens from farther south, as is to be expected. Specimens collected: 3, 20 kms. north of São João da Aliança; 1, Serra Dourada.

*Pionus maximiliani maximiliani* (Kuhl)  
**Maximilian’s Parrot**

Pinto (1936) assigned birds from the Rio das Almas to the southern race siy on the basis of size. A study of all LACM Goiás birds, however, shows them to be intermediate in size between birds from Bolivia (LACM) and Matto Grosso (AMNH) in the south and Piauí and Bahia to the north and east. On the basis of smaller wing length and overall lighter coloring, I feel that all LACM Goiás birds should be assigned to the nominate race *maximiliani*.

Parrots of this species occur commonly in the Serra Dourada and were also found to be fairly plentiful in gallery forest areas of the Chapada dos Veadeiros. They are relatively quiet in flight, traveling in small groups of two or four. Specimens collected: 4, Serra Dourada; 2, 20 kms. north of São João da Aliança.

*Amazona aestiva aestiva* (Linné)  
**Blue-fronted Parrot**

Common throughout the Serra Dourada and Chapada dos Veadeiros areas. Small flocks were present at all fazenda clearings. This species is the common cage bird of the caboclos, and every family seems to have at least one in captivity.

*Amazona xanthops* (Spix)  
**Orange-faced Parrot**

A species of rather local distribution in central Goiás, the orange-faced parrot was noted only on the Chapada dos Veadeiros. A solitary ♂ was collected on April 16, 1956, 20 kms. north of São João da Aliança, atop a dead tree in a fazenda clearing in gallery forest. On April 30, 1956, four additional specimens were secured by Mr. and Mrs. Machris from a flock of approximately 35 birds found feeding in the fruit trees of an abandoned fazenda 7 kms. S.W. of Veadeiros. Two ♂ ♂ of this latter group are obviously old birds, showing considerable yellow and orange on the breast and abdomen as well as much more extensive yellow on the head.

*Piaya cayana cabanisi* J. A. Allen  
**Squirrel Cuckoo**

A common species of the gallery forests of the Chapada dos Veadeiros and the primary forest areas of the Serra Dourada. A series of 8 specimens (six from the Chapada dos Veadeiros and two from the Serra Dourada) resemble most closely the race *cabanisi* of central Matto Grosso, but show a tendency for intergradation with the race *hellmayri* to the north. Dorsally, the Goiás birds are closest to *hellmayri* but the throats are paler as in *cabanisi*.

*Crotophaga ani* Linné  
**Ani**

A common species in suitable habitat of both study areas, often in close association with the preceding species. Specimens collected: 1 ♂.
2♀♂, 24 kms. S.E. of Formoso, Serra Dourada; 1♂, 20 kms. N. of São João da Aliança.

Guira guira (Gmelin)  
Guira Cuckoo
An abundant and gregarious species throughout the cerrado areas of both the Chapada dos Veadeiros and the Serra Dourada. Although small flocks of from 5 to 10 birds were to be noted at almost any time of day, they nevertheless were always quite shy and would maintain considerable distance between themselves and the observer. An adult ♀ was collected on May 4, 1956, 20 kms. north of São João da Aliança.

Glaucidium minutissimum minutissimum (Wied)  
Minute Pygmy Owl
A search of the literature indicates that there are very few records of this small owl from Southern America. Whether this situation indicates that the species is rare in South America or has just been overlooked by ornithologists, is not known.

An adult ♂ in fresh plumage was secured in the Serra Dourada on June 1, 1956, 24 kms. southeast of Formoso. During mid-morning the bird was heard calling from the crown of first class forest, but Herbert Berla and I spent a full two hours in our efforts to collect the specimen. The owl responded readily to our decoying call and was repeatedly seen flying back and forth from the crown of one heavily leaved tree to another. It was only when it made the mistake of alighting in an area of bare branches that we were able to shoot successfully. The species was not seen nor heard by us on any other occasion.

This specimen apparently represents the first record of the species for Goiás, as both Baer (Hellmayr, 1908) and Pinto (1937) fail to record it for this state. Measurements: wing 85.0 mm.; tail 52.0 mm.

Glaucidium brasilianum brasilianum (Gmelin)  
Brazilian Pygmy Owl
An abundant and widespread species in both cerrado and second class forest of the Chapada dos Veadeiros and the Serra Dourada. Four specimens secured are as follows: 1♀, 18 kms. S.E. of Formoso, Serra Dourada—Brown phase; 1♂, 99 kms. N. of Porangatú, on road to Peixe—Brown phase; 1♀, 24 kms. S.E. of Formoso, Serra Dourada—Red phase; 1♀, 20 kms. N. of São João da Aliança—Red phase.

Speotyto cunicularia grallaria (Temminck)  
Burrowing Owl
A common species of the open grassland (campo limpo) areas of the Chapada dos Veadeiros. Burrowing owls were not encountered in the Serra Dourada region. One ♂ and two ♀♀ were secured 20 kms. N. of São João da Aliança, April 15, 1956.

Chordeiles pusillus pusillus Gould  
Least Nighthawk
Noted only on the Chapada dos Veadeiros where it was a common species in the air at dusk in the vicinity of base camp no. 1. Two male specimens were secured 20 kms. N. of São João da Aliança, April 29, 1956.
Nyctidromus albicollis derbyanus Gould  
White-throated Paraque

A common species in central Goiás. All individuals secured by our field party were eye-shined at night on the roads and trails: 2 ♂, 1 ♀, 20 kms. N. of São João Aliança; 4 ♂, 24 kms. S.E. of Formoso, Serra Dourada, May 15, 1956. Six of the seven specimens collected are in the gray phase, and one is decidedly red. The series agrees very well with a large series of the race derbyanus in the collections of the AMNH.

Hydropsalis brasiliana brasiliana (Gmelin)  
Forked-tailed Nighthawk

A single individual of this species was eye-shined and collected in the Serra Dourada on May 23, 1956. The specimen, an adult ♂ (LACM 32420), agrees in color and size with a series of the nominate race from the Matto Grosso: wing, 161 mm., tail 330 mm.

Glaucus hirsuta hirsuta (Gmelin)  
Hairy Hermit

Although a widespread species in Brazil, it was apparently missed in Goiás by Baer (Hellmayr, 1908) and by Pinto (1936). A single specimen taken by W. Garbe on the Rio das Almas in October of 1934, is listed for Goiás by Pinto (1937). An adult ♂ (LACM 32433) was taken at our study area in the Serra Dourada on May 23, 1956: wing 61.5 mm., tail 42.0 mm.

Phaethornis pretrei (Lesson and DeLattre)  
Pretre’s Hermit

Two male specimens of this large, solitary species were secured on the Chapada dos Veadeiros, April 26 and 27, 20 kms. N. of São João da Aliança, where they were found in the shady margins of gallery forest.

Phaethornis ruber ruber (Linne)  
Red-vented Hermit

A common species in the Serra Dourada, but not met with on the Chapada dos Veadeiros. A male taken on May 26, 1956, 24 kms. S.E. of Formoso, measures as follows: wing, 33.4 mm., tail 29.8 mm.

Eupetomena macroura macroura (Gmelin)  
Brazilian Swallow-tail

An exceedingly abundant and obvious species of the cerrado tracts of the Chapada dos Veadeiros. A series of five males collected 20 kms. N. of São João da Aliança between April 15, and May 4, 1956, have the following measurements: wing 68.6-75.8 mm. (71.9), tail 75.1-93.7 mm. (88.0).

Colibri serrirostris (Vieillot)  
Brazilian Violet-ear

Abundant throughout the cerrado areas of the Chapada dos Veadeiros. A series of five males and one female collected between April 14 and May 1, 1956, have the following measurements: 5 ♂, wing 67.3-72.5 mm. (70.9), tail 44.1-49.0 mm. (45.2); 1 ♀, wing 61.5 mm., tail 40.0 mm.

Anthracothorax nigricollis nigricollis (Vieillot)  
Black-throated Mango

A common species in the Serra Dourada area but less so on the Chapada dos Veadeiros. A series of 3 ♂, 3 ♀ were secured in the former area, where the species was encountered in the vicinity of
clearings in primary forest. On the Chapada dos Veadeiros 2 ♂ ♂ were collected along the periphery of gallery forests.

*Lophornis magnifica* (Vieillot)  
**Frilled Coquette**

Individuals of this minute and beautiful species were noted on several occasions in clearings of primary forest of the Serra Dourada area. On June 11, 1956, an adult ♂ was collected 24 kms. S.E. of Formoso.

*Thalurania furcata baeri* Hellmayr  
**Baer's Wood Nymph**

An exceedingly abundant species in both study areas. A series of 3 ♂ ♂ and 1 ♀ from the Chapada dos Veadeiros and 3 ♂ ♂ ♀ from the Serra Dourada area agree in size and coloration with the description of the race *baeri* as given by Hellmayr.

*Heliactin cornuta* (Wied)  
**Sun Gem**

A single adult ♂ was taken 20 kms. north of São João da Aliança, on April 30, 1956. Baer (Hellmayr, 1908) took several specimens of this species at various localities in Goiás.

*Calliphlox amethystina* (Boddaert)  
**Amethyst Hummingbird**

A common species in the Serra Dourada and on the Chapada dos Veadeiros. A series of 2 ♂ ♀ and 1 ♀ from 20 kms. north of São João da Aliança, and 1 ♀ from 24 kms. S.E. of Formoso, agree in size and coloration with the large series in the AMNH from numerous and widespread localities in South America.

*Trogon strigilatus strigilatus* Linné  
**Yellow-breasted Trogon**

Apparently not previously recorded from Goiás, as Pinto (1936) did not meet with the species in southern Goiás, and Baer (Hellmayr, 1908) did not encounter it during his travels in this state. The species was found to be common in the Serra Dourada area, but was not met with in the gallery forests of the Chapada dos Veadeiros. In the Serra Dourada area this trogon was frequently encountered in heavy primary forest and a series of 2 ♂ ♀ and 3 ♀ ♀ was secured.

The above mentioned series agrees with specimens of the nominate race rather than with *melanopterus* of Bahia, as all three females show greater amounts of white tipping in the rectrices.

*Trogon surrucura surrucura* (Vieillot)  
**Surrucura Trogon**

A single specimen of this species was collected on May 3, 1956, 20 kms. north of São João da Aliança. This adult ♂ was the only trogon secured by us on the Chapada dos Veadeiros, although continuous search was made for trogons in the gallery forests of the area. The species was not met with in the Serra Dourada area. The above specimen is in fresh plumage and possesses the bright red breast and abdomen of the nominate race. Measurements for this specimen (LACM 32470) are wing 132 mm., tail 138 mm.

*Trogon curucui curucui* Linné  
**Curucui Trogon**

A number of individuals of this species of small trogon were observed
in primary forest areas of the Serra Dourada, but only one specimen was secured. On May 19, 1956, an adult ♀ in fresh plumage (LACM 32469) was secured 24 kms. S.E. of Formoso.

Chloroceryle americana americana  LITTLE GREEN KINGFISHER

The zone of intergradation of the race americana with that of matheusii coincides roughly with the Serra Dourada and Chapada dos Veadeiros regions in Central Goiás. Consequently, the single specimen secured by us from 20 kms. north of São João da Aliança is difficult to assign as to race. Comparison with material of both subspecies in question indicates that this particular specimen is most closely allied to the northern form.

Chloroceryle amazona amazona (Latham)  AMAZON KINGFISHER

A single specimen was secured on May 24, 1956, 24 kms. S.E. of Formoso, in the Serra Dourada. Other individuals of the species were observed on numerous occasions in this area.

Baryphthengus ruficapillus berlai Stager  RUFIOUS-HEADED MOTMOT

As this species had not been previously recorded from Goiás, it proved of considerable interest to find it present in sizeable numbers in both collecting areas. On the Chapada dos Veadeiros it occurs abundantly in the heavy gallery forest bordering the stream courses. In the Serra Dourada area the species was noted as common throughout the tracts of primary type forest. It responded readily to "squeaking" and to an imitation of its call note.

The race berlai shows strong affinities with the nominate form of the coast rather than with B. r. martii to the northwest (Stager, 1959). Goiás birds are distinguished from the nominate race by the overall more pallid color-tone of the crown, nuchal area, throat, breast and abdomen. The rufous band of the lower breast is wider and paler. Specimens secured: 3 ♂ ♂ ♂, 2 ♀ ♀ ♀, 20 kms. N. of São João da Aliança; 4 ♀ ♀ ♀ ♀, 24 kms. S.E. of Formoso, Serra Dourada.

Momotus momota simplex (Chapman)  BLUE-CROWNED MOTMOT

Motmots of this species were not observed or collected on the Chapada dos Veadeiros. In the Serra Dourada area the species was relatively abundant in the primary type forest at lower elevations at the west base of the hill range. On May 27, 1956, I succeeded in decoying three specimens into collecting range by imitating their tremulous call note. These three specimens (2 ♂ ♂ ♂, 1 ♀ ♀ ♀, 18 kms. S.E. of Formoso, Serra Dourada) agree most closely with examples of the race simplex. The chestnut nape patch is only slightly evident rather than pronounced as in parensis. The back is grass green. The ventral surface is more rufescent as in simplex rather than green as in the race nattereri.

Brachygalba lugubris melanosterna Sclater  BLACK-BREASTED JACAMAR

Two specimens of this small jacamar were collected on June 6, 1956,
in gallery forest bordering a stream course in heavy cerrado, 67 kms. north of Porangatú, on the road to Peixe. The species was not encountered on the Chapada dos Veadeiros, nor in the Serra Dourada region.

**Galbula ruficauda rufoviridis** Cabanis — **Rufous-tailed Jacamar**

An abundant species on both the Chapada dos Veadeiros and in the Serra Dourada area where it occurs in gallery and primary type forest. The series of specimens collected in both of the above areas agree with examples of the wide-spread race *rufoviridis*.

**Nystatus chacuru chacuru** (Vieillot) — **White-eared Puff-bird**

A characteristic and abundant species throughout the cerrado areas of both the Chapada dos Veadeiros and the Serra Dourada area. A series of six specimens from the two collecting areas agree with a large comparative series in the AMNH selected from widespread localities south of the Amazon in Brazil.

**Nonnula rubecula rubecula** (Spix) — **Reddish-breasted Nonnula**

A single specimen of this species of small puff-bird was taken (LACM 32501) on April 13, 1956, in marginal area of cerrado and gallery forest area, 20 kms. N. of Sáo João da Aliança. Pinto (1936), records several specimens from near Jaraguá and Baer (Hellmayr, 1908), collected the species in the vicinity of the old city of Goyáz.

**Monasa nigrifrons nigrifrons** (Spix) — **Black-fronted Nunbird**

A dominant and widespread species in the primary type forest areas of the Serra Dourada. The species was not, however, encountered in the gallery forests of the Chapada dos Veadeiros. The species responds readily to “squeaking” and demonstrates considerable curiosity to unusual activity in its immediate area.

A large series of specimens collected in the Serra Dourada area shows no appreciable difference from specimens from other parts of the species’ range.

**Chelidoptera tenebrosa tenebrosa** (Pallas) — **Swallow-wing**

These small bucconids were fairly abundant in the Serra Dourada area, but were not noted or collected on the Chapada dos Veadeiros. In the former region the species was most frequently observed at the margins of fazenda clearings in primary type forest. They were gregarious and often seen in flocks of ten to thirty individuals perched in the tops of dead forest trees from which they would make soaring flights out over the clearings. On the wing they looked like tiny miniatures of the black vulture (*Coragyps*), which undoubtedly accounts for their Brazilian name of Urubuzinho or “little vulture.”

Three specimens from the Serra Dourada, agree in color and size to the nominate race rather than with the coastal form *brasiliensis*. Compared with a series of *tenebrosa* from Surinam in the Los Angeles County
Museum, the Goiás specimens appear to have a smaller and more delicately formed bill, but otherwise agree with the nominate race.

*Pteroglossus castanotis australis* Cassin \textbf{CHESTNUT-EARED ARACARI}

On the Chapada dos Veadeiros these small toucans were observed sparingly in heavy gallery forest, but none were collected. In the primary type forest of the Serra Dourada, however, the species was relatively common and several specimens were secured.

Examination of a large series (57 specimens) of skins of this species in the collections of the American Museum of Natural History from localities throughout its range, show the races of *castanotis* to be poorly differentiated. Cassin (1867) based his description of *australis* on the total length of dried study skins, plus the lighter coloring of the head. Measurements of the study series of 57 specimens from throughout the range of the species show no appreciable difference in size between the nominate race and individuals within the range of the supposedly smaller race *australis*. With regard to color, the series shows that the distribution of the chestnut markings of the head region is very unstable. There is great variation with regard to the width of the chestnut collar and the presence or absence of the chestnut crown patch. The crown patch is more noticeable in southern birds due to the lighter tone of the chestnut marks. The lighter tone of the chestnut markings in birds to the south and east of the range of the nominate form appears to be the only valid difference between these two races. Geographical series appear to show a break in color continuity at about the Rio Madeira rather than at the Rio Negro as stated by Peters (1948).

*Ramphastos vitellinus pintoi* Peters \textbf{SULPHUR AND WHITE-BREASTED TOUCAN}

Although apparently absent in the gallery forests of the Chapada dos Veadeiros, this species of toucan is abundant in the heavy primary type forests of the Serra Dourada area. In this latter region the species was frequently observed feeding and traveling through the forest crown in flocks of from four to twenty individuals. Pinto (1936) reported the species as common in the Rio das Almas area to the south of the Serra Dourada region, but Hellmayr (1908) indicates that Baer did not encounter the species during his travels through Goiás.

The presence of the white-throated race *pintoi* in central Goiás and northern São Paulo is one of the puzzling facets of the entire *vitellinus complex*. The Goiás population is separated from the other two white-throated races, *culminatus* and the nominate form *vitellinus*, by the very contrasting orange-throated race *ariel*. Examination of the extensive series of *ariel* in the American Museum of Natural History from the lower Amazonian region of Para, fails to show any intergrades tending toward the white-throat of *pintoi*. In the series of six skins of *pintoi* from the Serra Dourada area, there is a slight tinge of lemon yellow on the white throat
patch of two of the specimens, while a third (LACM 32529), shows a considerable wash of yellow. There is evidence, however, among other species of toucans to indicate that the yellow wash on the white-throated birds is a juvenile characteristic.

*Rhamphastos toco* P. L. S. Müller

Toco Toucan

In central Goiás this large toucan appears to be more a species of the heavy cerrado rather than of the more humid primary type forest. It was exceedingly common, both on the Chapada dos Veadeiros and the Serra Dourada. It was also noted as common in the vast tracts of cerrado forest lying between the Serra Dourada region and Peixe to the north. The species did not appear to be as gregarious as the preceding toucan and was usually observed as single individuals or small groups of two to four birds.

Cabanis (1862:344) described the race *albogularis* as being, "somewhat smaller, with a shorter bill and with a clear white throat, without the yellow tinge and without the fine reddish spots on the border of the throat." Examination of a very large series of specimens of this species in the collections of the American Museum and the Los Angeles Museum, however, fails to support the validity of this southern race. Three specimens from Metan, Province of Salta, Argentina, in the collection of the American Museum of Natural History (486737-39), have a heavy wash of yellow on the throat as does a specimen from western Bahia in the Los Angeles Museum collection (31532). Each of the above mentioned four specimens is a young individual, as shown by the development of the bill. The large lateral black spot at the distal end of the bill appears to be a useful character in determining adult from juvenile birds. In the adult the spot is in sharp contrast to the yellow of the bill, whereas in juvenile birds, the black gradually shades into the yellow. Numerous southern specimens also show considerable red at the lower border of the white throat, being especially pronounced in juvenile specimens with yellow-tinged throats. With regard to size, the above mentioned large series of birds studied in the two collections shows that specimens from the southern portion of the range are equally as large as northern specimens of the nominate form. Peters (1948) questions the identity of the populations of this species inhabiting Bahia and Piauhy, but specimens in the collections of the American Museum from these two areas appear to be quite similar to those from adjacent parts of the range. From this study it can only be concluded that the species is monotypic and that the race *albogularis* should be synonymized with the nominate form to the north.

*Picumnus guttifer* Sundevall

Spotted Piculet

Although noted as fairly common on the Chapada dos Veadeiros, the collection contains but one specimen of this small woodpecker. On April 21, 1956, an adult ♀ (LACM 32530) was secured in gallery forest, 20 kms. north of São João da Aliança. The specimen agrees with a large
series of guttifer in the collection of the American Museum of Natural History.

*Colaptes campestris campestris* (Vieillot)  
**PAMPAS FLECKER**  
A common species of the open cerrado areas of the Chapada dos Veadeiros. Three specimens, taken 20 kms. north of São João da Aliança agree with specimens of typical *campestris* and are larger and darker than the race *chrysosternus* which occurs to the northeast of this area.

*Chrysoptilus melanochloros nattereri* Malherbe  
**BLACK AND YELLOW WOODPECKER**  
Three specimens of this woodpecker were secured in secondary forest growth in the Serra Dourada area between May 19 and 27, 1956. All three specimens are males and agree with a large series of typical *nattereri* in the American Museum collection. Traylor (1951), in his excellent revision of the *melanochloros-melanolaimus* group of woodpeckers, has at last brought understanding to a heretofore perplexing problem.

*Celeus flavescentis intercedens* Hellmayr  
**YELLOW WOODPECKER**  
A common species in gallery forest of the Chapada dos Veadeiros and primary type forest of the Serra Dourada. A series of five specimens from the above two localities agree with the type of race *intercedens* taken by Baer at Fazenda Esperanca, some 100 kms. due south of the Serra Dourada area.

*Dryocopus lineatus lineatus* (Linné)  
**LINEATED WOODPECKER**  
An abundant and widespread forest species in central Goiás. The series of four specimens (1, Chapada dos Veadeiros; 3, Serra Dourada) agree well with a large series of the nominate race *lineatus* in the American Museum of Natural History.

*Melanerpes flavifrons* (Vieillot)  
**YELLOW-FRONTED WOODPECKER**  
Woodpeckers of this species were met with only in the Serra Dourada area, where they were relatively common. Peters (1948) recognizes two races of the yellow-fronted woodpecker based on the descriptions of Vieillot (1818:75 and 103). According to him the nominate race *flavifrons* is confined to the states of Goiás, Minas Gerais, Bahia, Espirito Santo and Rio de Janeiro, while *rubriventris* includes birds from southeastern Brazil, northeastern Argentina and Paraguay. An examination of a large series of specimens in the collections of the Los Angeles County Museum, however, indicates that the species is badly in need of critical examination before it can safely be divided into two valid races. Specimens from east central Minas Gerais are heavily suffused with red on the breast and abdomen while specimens supposedly assignable to *rubriventris* from São Paulo have the amount of red greatly restricted. Our birds from Goiás which, according to Peters, should agree with the specimens from Minas Gerais, lack the suffusion of red on the breast and agree with specimens from the south. It may well be that *flavifrons* is divisible into two
recognizable races, but it will require examination of large series of specimens before a proper delineation of racial boundaries can be established. Until such a study can be made it appears wise to recognize *Melanerpes flavifrons* as a monotypic species.

*Leuconerpes candidus* (Otto) **WHITE-BELLED WOODPECKER**

In the Serra Dourada area, woodpeckers of this species were noted fairly frequently in stands of heavy cerrado forest. Although not observed on the Chapada dos Veadeiros, *Leuconerpes* probably occurs there, for the species is a widespread campo bird of central Brazil. The three specimens collected in the Serra Dourada agree with the large series of skins in the American Museum of Natural History from widespread areas of Brazil.

*Ventilornis passerinus transfluvialis* Hellmayr **OLIVE WOODPECKER**

An extremely common species in Central Goiás, occurring abundantly on the Chapada dos Veadeiros and in the Serra Dourada area.

Central Goiás birds appear to be intermediate between races *transfluvialis* and *olivinus* of the south. They are closest to *transfluvialis*, however, in that they show the back and rump very narrowly barred and spotted with pale yellow. This character is not very stable, however, as Matto Grosso (Chapada) birds show this degree of barring when examined in large series. The throats of Goiás birds show the light coloring of *transfluvialis* and agree in size and with this northern race. Measurements of five specimens in mm.:

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<th>Females</th>
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**Phloeocæstes melanoleucos melanoleucos** (Gmelin) **BLACK AND WHITE WOODPECKER**

Large woodpeckers of this species were frequently observed in the dense gallery forests of the Chapada dos Veadeiros where two adult specimens were secured. Individuals from central Goiás are larger than specimens of race *cearae* to the east, but agree in size with a series from farther north in Pará. The two specimens secured are uniformly darker on the lower breast and abdomen than the series examined from Pará. It will be necessary to assemble a large series of specimens before a proper study of the subspecific relationships of this species can be worked out adequately. Measurements: 2♂♂♂♂, wing 82, 85, tail 97, 103, culmen 46, 48 mm.

**Phloeocæstes rubricollis olallae** (Gyldenstolpe) **RED-NECKED WOODPECKER**

The occurrence of this large Amazonian woodpecker has not been previously recorded for the state of Goiás. The species was noted on several occasions in heavy primary forest of the Serra Dourada region and four specimens were secured.

Gyldenstolpe (1945) separated the population of race *rubricollis*
south of the Amazon (Amazonas, Pará and Maranhão) into the race olallae. Gyldenstolpe states in his description that specimens from Pará have the outermost primary entirely black on both webs and a small rufous basal marking on the penultimate primary. This character does not hold for the series of Goiás specimens, nor for a series examined from Pará. In both series the rufous markings are well defined on all primaries. With regard to size, the Goiás birds agree with measurements given by Gyldenstolpe for olallae, which is smaller than the nominate race rubricollis and the western form trachelopyrus. Measurements for four specimens from central Goiás (Serra Dourada): 1 ♂, wing 182, tail 110, culmen 47; 3 ♀♀, wing 178-181, tail 105-107, culmen 44.5-46 mm.

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