

OBSERVATIONS ON THE DISTRIBUTION AND
ECOLOGY OF THE MAMMALS OF THE CERRADO
GRASSLANDS OF CENTRAL BRAZILMICHAEL A. MARES¹

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ABSTRACT

Preliminary distributional and ecological data on the mammal fauna of central Brazil are presented. Small mammals were intensively surveyed on adjacent ecological reserves near Brasília, Federal District, Brazil, between July 1983 and November 1984. We also report results of small mammal surveys in Minas Gerais, Goiás, Mato Grosso, and Mato Grosso do Sul. The vegetation of these five Brazilian states is dominated by cerrado (*sensu lato*), with an upland landscape of xeromorphic grasslands and woodlands, and marshes and lowland gallery forests occurring along the streams and rivers. Data are presented on the habitat preferences, molting patterns, reproduction, ectoparasites, and natural history of all species of cerrado mammals we saw or collected during our research in Brazil. The cerrado is an important and extensive habitat that interconnects many of South America's major phytogeographic areas, including the Amazon rain forest, the Atlantic rain forest, the caatinga, and the chacoan thorn scrub. As such, the cerrado and its mammals could play an important role in the conservation of South America's biota. Thus, further research on cerrado mammals is to be strongly encouraged.

INTRODUCTION

The Cerrado Province (Cabrera and Willink, 1973) is a major phytogeographic region of South America, associated with the Precambrian plateau in central Brazil (Fig. 1). This diagonal belt of xeromorphic "savannah-like" vegetation separates the Amazonian and Atlantic Coastal forest regions, as well as the semiarid Caatinga region of northeastern Brazil and the chacoan thorn scrub of Brazil, Paraguay, Bolivia, and Argentina. Most of the Cerrado Province is situated in Brazil (Sarmiento, 1983) and includes the states of Goiás, Mato Grosso do Sul, southern Mato Grosso, southern Maranhão, southern Piauí, western Bahia, western Minas Gerais, parts of São Paulo and Rondônia, and the Federal District.

The cerrado (*sensu lato*) flora is highly diverse and contains many endemics; Eiten (1978) has reported 230 species of vascular plants from 0.1 ha plots (and 320 species per ha) in the Federal District. Cerrado vegetation occurs primarily in the uplands on well-drained red or yellow latosols that are generally poor in nutrients, especially phosphorous. This xerophyllous savanna is distributed in a mosaic of different physiognomies (below), ranging from open grassland to closed woodlands; the dominant vegetation type is determined by a complex of climatic, edaphic and anthropogenic factors (Alho, 1982; Cole, 1986; Eiten, 1972). In general, the deeper and more well-drained the soil, the higher the density and

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Date submitted: 10 March 1988.

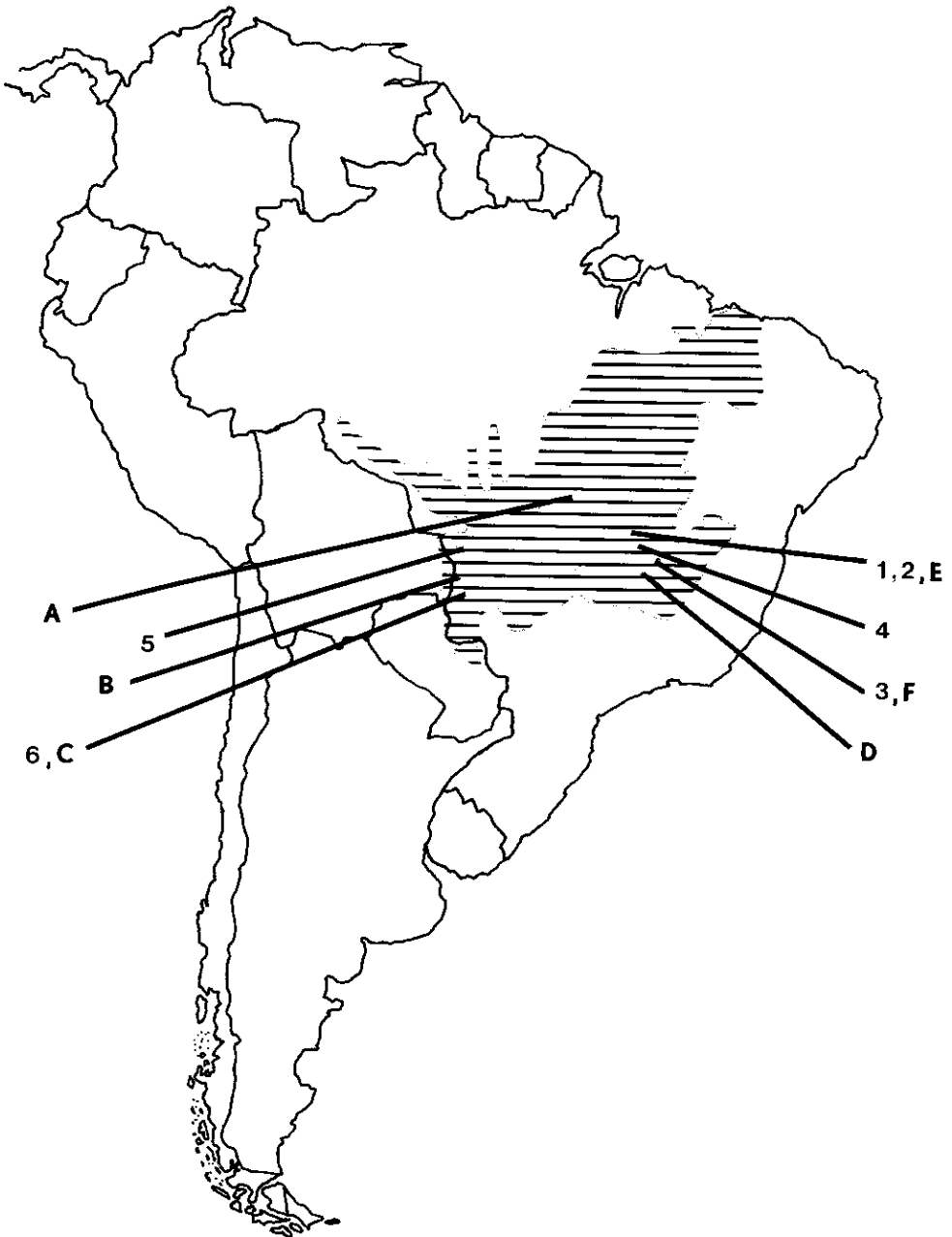


Fig. 1.—A map of the Cerrado Province of South America showing the collecting localities of the specimens reported in this paper. 1) Fazenda Água Limpa (FAL); 2) Reserva Ecológica do Instituto Brasileiro de Geografia e Estatística (IBGE); 3) Estação Ecológica de Pirapitinga, near Tres Marias, Minas Gerais; 4) Cristalina, Goiás; 5) near Poconé, Mato Grosso; 6) Fazenda Nhumirim, Mato Grosso do Sul; A) 264 km N Xavantina, Mato Grosso (Pinc et al., 1970; B) Acurizal Ranch, Mato Grosso do Sul (Schaller, 1983); C) Fazenda Nhumirim, Mato Grosso do Sul (Alho et al., 1987; Lacher et al., 1986); D) Serra da Canastra National Park, Minas Gerais (Dietz, 1983; Glass and Encarnação, 1982);

diversity of trees and general ground cover. All of the various physiognomic types of cerrado are related in species composition; for instance, a woody shrub species occurring in campo sujo can usually be found in cerradão, although it may be rare (Eiten, 1984).

The lowland watershed supports marshlands and a mesophytic evergreen forest (in many ways an ecotonal forest between the Amazon and Atlantic rain forests) (Cerqueira, 1982; Fonseca and Redford, 1984); there is often a distinct boundary between these habitats and the upland cerrado vegetation.

The climate of the cerrado is highly seasonal, with rain falling principally from January through July and a pronounced five-month dry season that lasts from August through December. Average yearly maximum temperature (near Brasília) is about 28°C, while the average minimum is about 12°C (Eiten, 1984). The northern portions of the cerrado, and the pantanal, are warmer (Nimer, 1972). Temperatures are warmest during the late dry season (September, October), with the maximum recorded temperature near Brasília being 34.5°C, and the lowest recorded temperature in the same area being 1.6°C (IBDF, 1979). Temperature extremes are greater in the pantanal, where a high temperature of 42°C and a low of 0°C have been recorded (Nimer, 1972; Valverde, 1972). Annual precipitation varies from about 1250 mm in the pantanal to almost 2000 mm in the ecotonal region of the northern cerrado where it grades into the Amazonian rain forest (Nimer, 1972). Precipitation near Brasília averages 1586 mm (Eiten, 1984).

The mammals of the cerrado have not been well studied. There has been some basic research on systematics and distribution of cerrado mammals (e.g. Alho, 1982; Alho et al., 1987; Avila-Pires, 1957, 1968, 1972; Costa et al., 1981; Fonseca and Redford, 1984; Glass and Encarnação, 1982; Lacher et al., 1986; Macêdo and Mares, 1987; Mello and Moojen, 1979; Moojen, 1965; Pine et al., 1970; Sazima et al., 1978; Schaller, 1983; Sick, 1965; Varejão and Valle, 1982; Vieira, 1955), on mammals associated with plague or other human diseases (e.g. Araújo and Sherlock, 1969; Gettinger, 1987; Guimarães, 1972; Lainson and Shaw, 1969; Pollitzer and Meyer, 1965), and on basic ecology of mammals (e.g. Alho, 1979*a*, 1979*b*, 1980, 1981*a*, 1981*b*, 1981*c*, 1986; Alho and Souza, 1982; Borchert and Hansen, 1983; Dietz, 1983; Ernest and Mares, 1986; Fonseca and Lacher, 1984; Fonseca et al., 1982; Lacher et al., 1984, in press; Mares et al., 1986; Mello, 1977, 1980; Nitikman and Mares, 1987; Paula, 1983; Redford, 1984*a*, 1984*b*, 1985*a*, 1985*b*; Sazima and Sazima, 1975; Shaw et al., 1985; Souza and Alho, 1980; Valle et al., 1982). For a region that is the second most extensive habitat in South America after the Amazon rain forest, and that encompasses more than 1.9 million km² (including the pantanal), the cerrado has been poorly collected. Moreover, most studies on the ecology of cerrado mammals have been conducted near Brasília and have been carried out since the founding of that city in the late 1950s. Patterns of faunal distribution within the region, as well as the selection of microhabitats by mammal species, have not yet been adequately described (e.g., Lacher and Mares, 1986; Lacher et al., 1986; Mares, 1982*a*; Pine, 1982).

During 1983–84, we conducted ecological research on small mammals of the cerrado near Brasília, Federal District, and, as an adjunct to that research, collected small mammals in various habitats of the cerrado and pantanal. Because infor-

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E) near Formosa, Goiás (Mello, 1977, 1980; Mello and Moojen, 1979); F) Prudente de Morais, Minas Gerais (Valle et al., 1982) and Serra do Cipó (Sazima and Sazima, 1975).



Fig. 2.—Campo limpo habitat from the southern border of the Fazenda Água Limpa, Federal District, Brazil.

mation based on collected specimens is so rare in this vast region, we present herein information on the distribution, ecology, systematics, and morphometrics of the mammals collected or, in the case of larger species, seen by us during our research in Brazil.

Among the cerrado's many habitats are a number of major types that we sampled for mammals. We list only those habitats for which we have some associated information on mammals. Our research was not designed to sample the entire fauna of the cerrado, but will provide some foundational information on occurrence and habitat selection.

STUDY AREAS

Description of the Upland Habitats.—**Campo limpo** (“clean field”) is open grassland with variable densities of grasses, sedges (in moist areas), forbs, and small shrubs. These campos have a homogeneous appearance with no woody vegetation extending above the grass. Campo limpo often occurs on plateaus and hilltops in areas of shallow soil, where the grass-forb canopy is low and sparse. It also can occur at lower elevations, often grading into seasonal wet campos (Fig. 2).

Campo sujo (“dirty field”) is grassland with some scattered woody plants or palm-like species emerging above the grass cover. This habitat is characterized by less than 10% total ground cover by woody species and often occurs in areas of shallow soil with the well-dispersed shrubs and trees taking root in cracks in the bedrock (Eiten, 1984).

Cerrado (*sensu stricto*, “closed”) is a semideciduous, xeromorphic tree/shrub woodland with an open canopy and a ground-cover of forbs and grasses. This habitat occurs in a broad range of tree/shrub densities, with total ground cover ranging from 10–60% (Eiten, 1984) and with woody species widely spaced. Av-



Fig. 3.—Cerrado from the southeast corner of the Reserve Ecológica do Instituto Brasileiro de Geografia e Estatística, Federal District, Brazil.

erage height of the tree canopy ranges from 6–8 m (Eiten, 1984; Goodland, 1971; Goodland and Ferri, 1979; Fig. 3).

Cerradão (“big cerrado”) is a xeromorphic, semideciduous upland forest of moderately tall trees, with a closed to semi-closed canopy. It occurs in areas of deep soil, rich in nutrients; the tree canopy often reaches nine meters (Goodland, 1971). Development of a more closed canopy shades the forest floor, producing a sparsely covered understory.

Campo rupestre (“rocky field”) is a habitat associated with areas of outcrops of bedrock. It occurs in the highlands, on plateau tops and ridges, usually between 1000 and 1800 m elevation (Eiten, 1972). This habitat occurs on special (non-latosol) rock types, often with adjacent seepage areas and seasonal wet campos. The flora has not been studied, but includes both typical cerrado species and endemics, typified by many species of the family Velloziaceae (Fig. 4).

Upland mesophytic forest occurs on rich, well-drained latosols or patches of limestone-based soils. These forests are evergreen to semideciduous, often with a well-developed and stratified canopy. The floral composition is often quite different than that of typical cerrado, but may grade into cerrado or cerradão at the perimeter.

Description of the Lowland Habitats.—**Gallery forest** is evergreen mesophytic forest found along the drainage lowlands. It usually occurs along streams and rivers where the water table is close to the surface, but may continue up the slope of the valley in areas where there is well-drained soil of enhanced fertility (Eiten, 1972, 1984). The forest canopy is often dense and stratified. There is a sharp boundary between gallery forest and the xeromorphic cerrado vegetation (Fig. 5).

Brejo is a grass-sedge marshland that occurs in areas where the soils are gleyed and the ground surface is permanently saturated. This habitat often occurs in long sections of the valley lowlands instead of gallery forest (“veredas”), or as a rounded



Fig. 4.—Rocky outcropping of campo rupestre habitat located southeast of Cristalina, Goiás, Brazil.



Fig. 5.—A gallery forest located in the ecological reserve of the Fazenda Água Limpa, Federal District, Brazil.



Fig. 6.—An extensive area of lowland bromeliad habitat near the northern border of the Fazenda Água Limpa, Federal District, Brazil.

depression at the head (“cabeceira”) of a gallery forest. This hydric plant community is poorly known, and does not share species with the cerrado (Goodland, 1971; Fig. 6).

Wet campo is a seasonal marsh habitat occurring on gleyed soils that alternate seasonally between being dry and being saturated. These campos often form a boundary strip between the gallery forest and the upland cerrados that ranges “from a few meters to several hundred meters wide” (Eiten, 1972, 1984). Buriti palms (*Mauritia vinifera*) are often associated with forest/marsh boundaries. This habitat also occurs in association with campo limpo on upland scarps and hillsides, where ground water flushes downward near the soil surface.

The Pantanal.—The pantanal is an extensive (400,000 km²) area of seasonal marshes occupying the flat upper watershed of the Paraguay River in southwestern Mato Grosso and northwestern Mato Grosso do Sul (Fig. 7). Floristically, the pantanal is a mosaic of several vegetation types, bordered on the northwest by semideciduous forest that forms a transitional zone with Amazonian forest, on the southwest by xeric chaco, and on the east by the cerrado. Vast areas of this landscape are inundated during the rainy season, leaving only isolated hills and ridges above the water table. Permanent and seasonal marsh are interspersed with uplands supporting typical cerrado vegetation or semideciduous subtropical forest; gallery forests sometimes occur along the streams and rivers (Alho et al., 1988; Valverde, 1972).

Collecting Localities in the Federal District.—Most of the small mammals reported in this paper were collected on or near two ecological reserves south of Brasília, Federal District, Brazil (15°57'S, 47°54'W, elevation 1100 m).

1. Fazenda Água Limpa (FAL) is an agricultural research station and ecological reserve of the Universidade de Brasília. The central laboratory facilities are located approximately 12 km S Brasília. The reserve has been protected from most human disturbance during the last 20 years, but human-caused fires are common during the dry season. Cerradão, cerrado (*sensu stricto*), campo sujo, campo



Fig. 7.—The pantanal, an area typified by extensive permanent and seasonally inundated marshlands. This photograph was taken near Corumbá, Mato Grosso do Sul, Brazil.

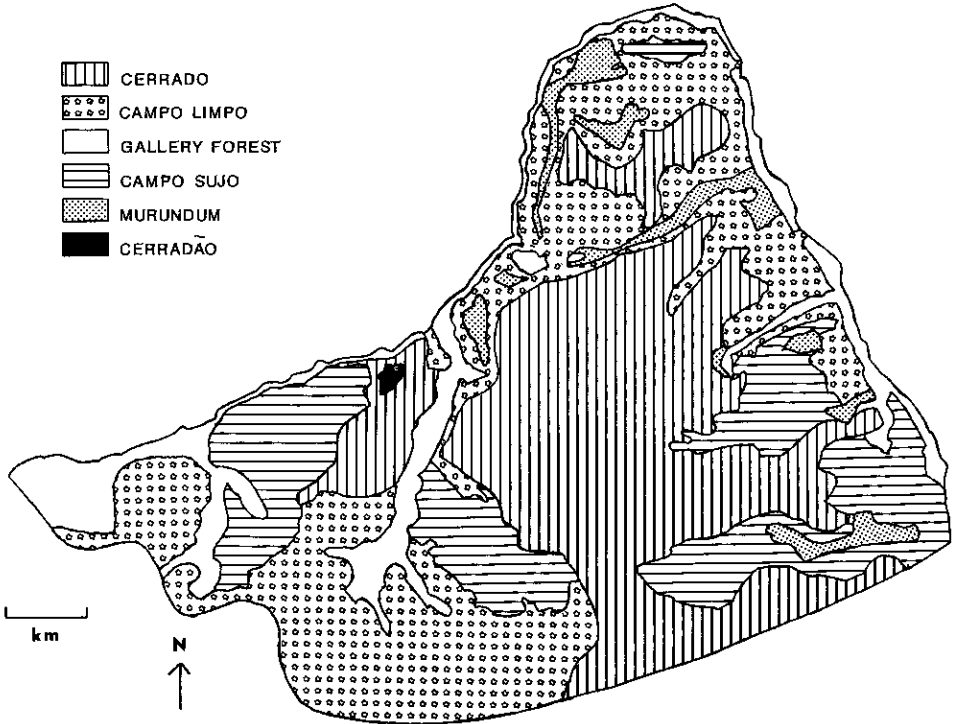


Fig. 8.—A simplified map of the major cerrado (*sensu lato*) habitats represented within the Fazenda Água Limpa (taken from Ratter, 1980).

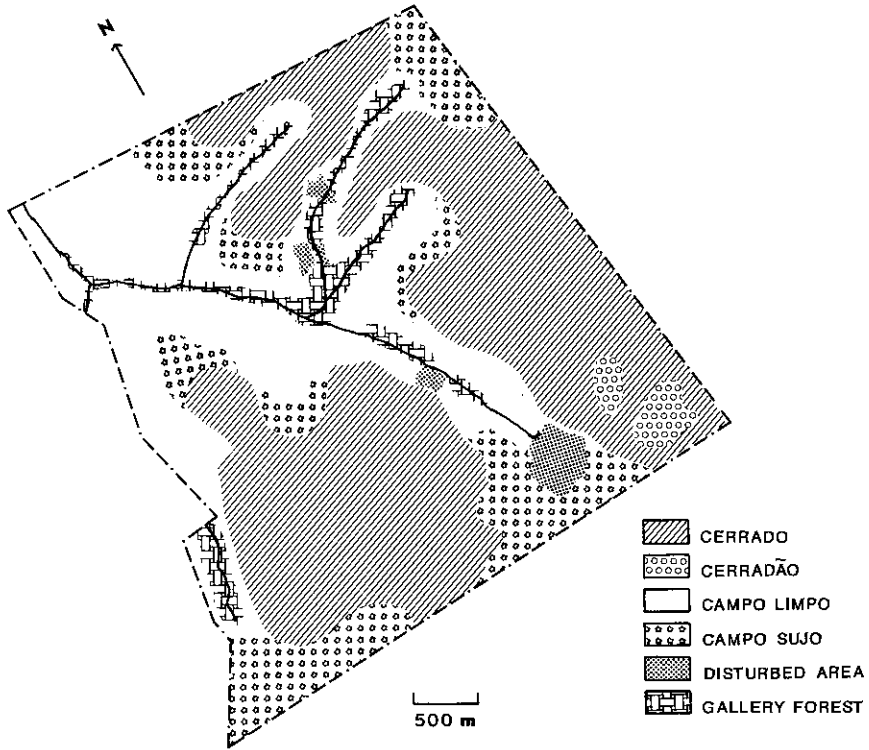


Fig. 9.—A simplified map of the major cerrado (*sensu lato*) habitats represented within the Reserva Ecológica do Instituto Brasileiro de Geografia e Estatística (after Negret, 1983).

limpo, valley-side wet campo, brejo, and gallery forest habitats were all represented at FAL, while upland mesophytic forest and campo rupestre habitats were absent (Fig. 8).

2. Reserva Ecológica do Instituto Brasileiro de Geografia e Estatística (IBGE) is located 35 km S Brasília. IBGE maintains a permanent fire break around the perimeter of the reserve, and had protected its habitats from fire for more than eight years prior to this study. All major cerrado habitats (except upland mesophytic forest and campo rupestre) were represented on the reserve (Fig. 9).

Other Localities in the Cerrado Province.—3. Estação Ecológica de Pirapitinga, near Tres Marias, Minas Gerais. This reserve is located on a peninsula extending into a large reservoir at Tres Marias. The peninsula is isolated from the mainland during the rainy season (thus, seasonally it becomes an island). Habitats present included cerrado, cerradão, and semideciduous forest.

4. Cristalina, Goiás. The habitats of this area are very similar to those found in the Federal District, but include abundant campo rupestre intergrading with cerrado.

5. Near Poconé, Mato Grosso. Pantanal. IBDF reserve. This habitat is described in Alho et al. (1988).

6. Mato Grosso do Sul. Pantanal. Fazenda Nhumirim, 150 km SE of Corumbá; research ranch of the Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), Centro de Pesquisa Agropecuária de Pantanal. Alho et al. (1988) described the habitats of the southern pantanal and Lacher et al. (1986) provide a detailed description of the habitats of the Fazenda Nhumirim.

MATERIALS AND METHODS

Mammals were collected as part of an ecological study of small mammals in the Brazilian cerrado during 1983–84. Small mammals were collected using Sherman (23 by 8 by 9 cm) and Tomahawk (48 by 15 by 15 cm) live traps, snap traps and rat traps; bats were collected by mist netting. Traps were set in grid arrays in areas of intensive ecological research and were checked for several days each month, depending upon the grid study in progress (e.g. Ernest and Mares, 1986; Lacher et al., in press;

Mares et al., 1986; Nitikman and Mares, 1987). Traps were also placed in no particular pattern in various habitats in order to sample small mammals. Animals captured alive were anesthetized with ether so that a sample of ectoparasites could be obtained. Animals were brushed over a porcelain tray; chiggers and ticks were removed with fine forceps. Ectoparasites were stored in vials of 70% ethyl alcohol. Further description of this technique is given by Gettinger (1987). Specimens were examined for reproductive condition at the time of preparation. Molting patterns were determined by examining the skins during preparation.

CHECKLIST OF MAMMALS OF THE FEDERAL DISTRICT

Since our most intensive research effort was limited to the Federal District near Brasília, in the center of the cerrado, we here provide a list (Table 1) of the fauna that is found in that area. While we were not able to verify all species listed, we also include those that had been reported earlier and are based on museum specimens or sightings of easily identifiable species. The list includes species comprising genera, families, and orders known or expected in the Federal District.

ACCOUNTS OF SPECIES

The species accounts include all species which we have observed or collected at our intensive study site in the Federal District and in various localities throughout the cerrado and pantanal. We do not include species that have been cited by others but for which we have no firsthand information. The species accounts which follow include the order and family of each species, as well as the scientific name followed by the authority and literature citation for the binomial. Measurements are in mm and body mass is given in grams. The following measurements are reported: total length (ToL), tail length (TL), hind foot length (HF), ear length (E), weight (WT), greatest length of skull (GLS), basilar length (BL), braincase breadth (BB), interorbital breadth (IB), mastoid breadth (MB), zygomatic breadth (ZB), nasal length (NL), diastema length (DL), palatal length (PL), maxillary toothrow length (MTRL). Forearm length (FL) is reported for bats. Crown rump length (CRL) of embryos is given in mm. Specimens are housed in the Oklahoma Museum of Natural History, University of Oklahoma, Norman, Oklahoma (OMNH), the Departamento de Biologia Animal, Universidade de Brasília, Brasília, Brazil (UNB), or the Instituto Brasileiro de Geografia e Estatística, Brasília, Brazil (IBGE). Orders, families, and subfamilies are listed in phylogenetic order (Anderson and Jones, 1984), while genera (taxonomy following Anderson and Jones, 1984) and species (taxonomy following Honacki et al., 1982) are listed alphabetically. Morphological measurements are listed in tables; information on reproduction, molt, habitat and other aspects of the biology of a species are given in the species account.

Order Marsupialia
Family Didelphidae
Subfamily Didelphinae

Chironectes minimus (Zimmermann)

1780. *Lutra minima* Zimmermann, Geogr. Gesch. Mensch. Vierf. Thiere, 2:317.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Amblyomma* sp., *Androlaelaps fahrenheitzi* (Berlese)).

Remarks.—One individual was captured in February, 1984, along a gallery forest stream at IBGE. It was examined, marked and released.

Didelphis albiventris Lund

1840. *Didelphis albiventris* Lund, Kongl. Dansk. Vid. Naturv. Math. Selsk. Afhandl., p. 20.

Specimens examined (13).—FEDERAL DISTRICT: 12 km S Brasília, 1 (UNB); 17 km S Brasília, 1 (UNB), 1 (IBGE); 20 km S Brasília, 5 (OMNH), 2 (UNB); 25 km S Brasília, 1 (OMNH), 2 (UNB).
Measurements.—See Table 2.

Reproduction.—Two adult males were collected, one each in July and October; subadult males were collected in March ($n = 1$) and December ($n = 2$). Two adult females were collected in July; both were pregnant with seven young in the pouch (mean CRL 23 and 25 mm). Subadult females were caught in March ($n = 2$), May ($n = 1$), July ($n = 1$), November ($n = 1$) and December ($n = 1$).

Molt.—One of the four adults showed no sign of molt; data are not available for the other three adults. Juveniles and subadults collected in March ($n = 3$), November ($n = 1$) and December ($n = 1$) were in various stages of molt. Additional juveniles and subadults collected in May ($n = 1$) and December ($n = 1$) were not molting; data are not available for an individual collected in July and one collected in December.

Ectoparasites.—The following ectoparasites were collected from this species: Siphonaptera (*Polygenis* sp.); Parasitiformes (*Gigantolaelaps goyanensis* Fonseca, *G. oudemansi* Fonseca, *Androlaelaps fahrenheitzi* (Berlese), *Ixodes* sp., *Amblyomma* sp.); Acariformes (undetermined species).

Habitat.—These large marsupials were captured in all the major habitats including cerrados (cerrado, cerradão), campos (campo limpo, campo sujo), brejos, gallery forests (Mares et al., 1986) and wet campos. Eleven of the specimens were collected on the ground in gallery forests. Two specimens were found as road kills. Two specimens (juveniles) were trapped in Sherman traps; all other specimens were trapped in Tomahawk traps.

Remarks.—Although this species was usually captured on the ground, it also forages in trees. Small subadults were occasionally captured in arboreal Sherman traps and, when Tomahawk traps were placed up in flowering *Caryocar brasiliensis*, *D. albiventris* adults were captured. Fonseca and Redford (1984) reported that this species has been trapped in all habitat types except open fields on the IBGE Reserve. Alho (1981a) also found this species common at FAL. Fonseca et al. (1982) captured *D. albiventris* in gallery forest, cerrado, cerradão and dry forest in the Federal District and noted its lack of habitat specificity. Paula (1983) found this species in the gallery forest of the National Park of Brasília. This species was captured in gallery forest and cerradão in the Federal District, Mato Grosso and at several sites in Goiás (Mello, 1980; Mello and Moojen, 1979; Schaller, 1983; Valle et al., 1982).

Marmosa agilis (Burmeister)

1854. *Grymaecomys agilis* Burmeister, Syst. Übers. Thiere Bras., 1:139.

Specimens examined (38).—FEDERAL DISTRICT: 20 km S Brasília, 10 (OMNH), 8 (UNB); 25 km S Brasília, 5 (OMNH), 8 (UNB); 15 km S, 3 km E Brasília, 1 (IBGE); 20 km SW Brasília, 1 (UNB). GOIÁS: 12 km NE Cristalina, 1 (UNB). MATO GROSSO: 108 km S Poconé, 1 (OMNH); 115 km S Poconé, 3 (OMNH).
Measurements.—See Table 2.

Reproduction.—Males collected in February ($n = 1$), May ($n = 2$), July ($n = 3$) and September ($n = 2$) were adults and had scrotal testes. Juvenile and subadult males were collected in January ($n = 4$), February ($n = 3$), April ($n = 2$), May ($n = 1$)

Table 1.—Checklist of the mammals of the Federal District. The status of each species is indicated as being: (*) collected, trapped and released or seen by us; (**) tracks or field sign seen by us; (1) collected and/or seen by Fonseca and Redford (1984); (2) collected and/or seen by Paula (1983); reported by (3) Moojen (1965); (4) Avila-Pires (1972); (5) Mello and Moojen (1979); (6) Borchert and Hansen (1983); (7) Coimbra et al. (1982); (8) IBDF (1979).

Order Marsupialia	
Family Didelphidae	
Subfamily Didelphinae	
<i>Chironectes minimus</i>	*
<i>Didelphis albiventris</i>	*, 1, 2, 5
<i>Marmosa agilis</i>	*
<i>Marmosa murina</i>	1, 2, 5
<i>Marmosa</i> sp.	*
<i>Monodelphis americana</i>	*, 2
<i>Monodelphis domestica</i>	*, 1 ^a
<i>Monodelphis kuni</i>	*
<i>Philander opossum</i>	2, 5
Order Chiroptera	
Family Emballonuridae	
Subfamily Emballonurinae	
<i>Peropteryx macrotis</i>	7
<i>Rhynchonycteris naso</i>	7
Family Phyllostomidae	
Subfamily Phyllostominae	
<i>Chrotopterus auritus</i>	7
Subfamily Glossophaginae	
<i>Anoura caudifer</i>	*
<i>Glossophaga soricina</i>	*, 7
Subfamily Carolliinae	
<i>Carollia perspicillata</i>	*, 7
Subfamily Stenoderminae	
<i>Artibeus cinereus</i>	*
<i>Artibeus literatus</i>	*, 7
<i>Chiroderma doriae</i>	7
<i>Sturnira lilium</i>	*
<i>Vampyrops lineatus</i>	*
Subfamily Desmodontinae	
<i>Desmodus rotundus</i>	*, 7
Family Furipteridae	
<i>Furipterus horrens</i>	7
Family Vespertilionidae	
Subfamily Vespertilioninae	
<i>Eptesicus brasiliensis</i>	*
<i>Myotis nigricans</i>	*
Family Molossidae	
<i>Molossus molossus</i>	*
<i>Nyctinomops laticaudatus</i>	*
Order Primates	
Family Cebidae	
Subfamily Cebinae	
<i>Cebus apella</i>	*, 1

Table 1.—Continued.

Subfamily Alouattinae	
<i>Alouatta caraya</i>	*
Subfamily Callitrichinae	
<i>Callithrix jacchus</i>	*, 1 ^b , 8 ^b
Order Xenarthra	
Family Dasypodidae	
<i>Cabassous unicinctus</i>	*, 1
<i>Dasybus novemcinctus</i>	*, 1, 8
<i>Dasybus septemcinctus</i>	*
<i>Euphractus sexcinctus</i>	*, 1, 8
<i>Prionotes maximus</i>	***, 1, 8
<i>Tolypeutus tricinctus</i>	8
Family Myrmecophagidae	
<i>Myrmecophaga tridactyla</i>	8
<i>Tamandua tetradactyla</i>	1, 8
Order Lagomorpha	
Family Leporidae	
<i>Sylvilagus brasiliensis</i>	*, 1, 8
Order Rodentia	
Family Muridae	
Subfamily Sigmodontinae	
<i>Akodon cursor</i>	*, 5 ^c , 6
<i>Akodon reinhardtii</i>	*
<i>Akodon</i> sp. 1	*
<i>Akodon</i> sp. 2	*
<i>Bolomys lasiurus</i>	*, 1, 2, 5 ^c , 6 ^c
<i>Calomys callosus</i>	*, 1, 5 ^d , 6
<i>Calomys tener</i>	*, 5 ^d
<i>Holochilus brasiliensis</i>	5
<i>Juscelinomys candango</i>	3, 5
<i>Kunsia fronto</i>	4, 5
<i>Nectomys squamipes</i>	*, 1, 2, 5
<i>Oryzomys bicolor</i>	*
<i>Oryzomys capito</i>	*
<i>Oryzomys concolor</i>	*
<i>Oryzomys fornesi</i>	*, 2 ^c , 5 ^c , 6 ^c
<i>Oryzomys lamia</i>	5
<i>Oryzomys nigripes</i>	*, 2 ^c , 5 ^c , 6 ^c
<i>Oryzomys subflavus</i>	*, 1, 2, 5
<i>Oryzomys utiariensis</i>	5 ^f
<i>Oxymycterus roberti</i>	*, 1, 2, 5, 6
<i>Plectomys paludicola</i>	2, 6
<i>Pseudoryzomys (=Oecomys) simplex</i>	1, 2, 5
<i>Rhipidomys mastacalis</i>	*, 2, 5 ^g
<i>Rhipidomys</i> sp.	1
Subfamily Murinae	
<i>Mus musculus</i>	*
<i>Rattus rattus</i>	*
Family Erethizontidae	
<i>Coendou prehensilis</i>	*

Table 1.—Continued.

Family Caviidae	
Subfamily Caviinae	
<i>Cavia aperea</i>	*, 2, 5, 8
<i>Galea spixii</i>	5
Family Hydrochaeridae	
<i>Hydrochaeris hydrochaeris</i>	** ^a , 1, 5, 8
Family Dasyproctidae	
<i>Dasyprocta</i> sp.	*, 1
Family Echimyidae	
Subfamily Echimyinae	
<i>Carterodon sulcidens</i>	5
<i>Clyomys laticeps</i>	5
<i>Proechimys longicaudatus</i>	1, 2, 5
<i>Proechimys</i> sp.	*
<i>Thrichomys apereoides</i>	*, 1, 5
Order Carnivora	
Family Canidae	
Subfamily Caninae	
<i>Cerdocyon thous</i>	8
<i>Chrysocyon brachyurus</i>	*, 1, 8
<i>Speothos venaticus</i>	1
Family Procyonidae	
Subfamily Procyoninae	
<i>Nasua nasua</i>	** ^a , 8
<i>Procyon cancrivorus</i>	8
Family Mustelidae	
Subfamily Mustelinae	
<i>Eira barbara</i>	*, 1, 8
Family Felidae	
Subfamily Felinae	
<i>Felis concolor</i>	8
<i>Felis pardalis</i>	8
<i>Felis yagouaroundi</i>	1
Order Perissodactyla	
Family Tapiridae	
<i>Tapirus terrestris</i>	8
Order Artiodactyla	
Family Tayassuidae	
<i>Tayassu tajacu</i>	8
<i>Tayassu pecari</i>	8
Family Cervidae	
Subfamily Odocoileinae	
<i>Mazama americana</i>	1, 8
<i>Ozotoceros bezoarticus</i>	*, 1, 8

^a This species is listed as *Monodelphis* sp.

^b This species is listed as *C. penicillata*.

^c This species is listed as *Zygodontomys lasiurus*; the specimens collected in the gallery forest are probably *Akodon cursor*; all specimens except those from the gallery forest are probably *B. lasiurus*.

^d Mello and Moojen (1979) combined these two species under *Calomys callosus*.

^e This species is listed as *O. eliurus*; those specimens collected in the campos are probably *O. fornesi* and those collected in the gallery forest are probably *O. nigripes*.

= 1), August ($n = 1$) and December ($n = 2$). Adult females were captured in February ($n = 1$), September ($n = 2$) and October ($n = 5$); three of those collected in October were lactating. Juvenile and subadult females were collected in February ($n = 2$), March ($n = 1$), April ($n = 5$) and May ($n = 1$).

Molt.—An adult collected in February was molting behind the ears, postero-dorsally and beneath the fore and hind limbs ventrally. One adult taken in July had a spotty ventral molt, while an adult caught in October showed a single small dorsal patch of active melanin deposition. None of the other adults showed signs of molt. Juveniles and subadults collected in January ($n = 2$), February ($n = 4$), May ($n = 1$), August ($n = 1$), and December ($n = 2$) were in various stages of molt ranging from complete dorso-ventral molt to small patches on the dorsum and venter.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Ixodes* sp.); Acariformes (undetermined species).

Habitat.—This species is almost exclusively arboreal and found only in the gallery forest, albeit in a variety of gallery forest microhabitats (Nitikman and Mares, 1987). Only six specimens were collected in the gallery forest in terrestrially set traps. Two specimens, one (in the UNB collection) collected at Cristalina and one (in the IBGE collection) collected 15 km S and 3 km E Brasília are identified as *M. agilis*. Both were trapped in cerrado habitat. Additional collections of *Marmosa* need to be made in the cerrado in order to clarify its distribution among habitats.

Remarks.—Dietz (1983) captured a single individual during an ecological study in Minas Gerais. Pine et al. (1970) reported collecting several species of *Marmosa* north of Xavantina in Mato Grosso. Mello and Moojen (1979) reported collecting *M. murina* in the Federal District; these specimens may be *M. agilis*.

Marmosa sp.

Specimens examined (1).—FEDERAL DISTRICT: 25 km S Brasília, 1 (OMNH).

Measurements.—See Table 2.

Reproduction.—The single adult male captured in September had large scrotal testes.

Molt.—The specimen collected on 1 September was molting mid-ventrally, with isolated small patches of melanic spotting on the dorsum.

Habitat.—This specimen was collected in the gallery forest in a Sherman trap set one foot above the ground.

Remarks.—We have not as yet been able to identify this species.

Monodelphis americana (Müller)

1776. *Sorex americanus* Müller, *Natursyst. Suppl.*, 7:36.

Specimens examined (14).—FEDERAL DISTRICT: 20 km S Brasília, 6 (OMNH), 6 (UNB), 1 (IBGE); 25 km S Brasília, 1 (OMNH).

Measurements.—See Table 2.

Reproduction.—One adult male collected in July had large scrotal testes. Two adult females were caught, one each in March and November; the latter was

←

[†] This species may be a composite species (*fornesi* and *nigripes*); see Myers and Carleton (1981) for a discussion.

^{*} This listing includes *R. macrurus* and *R. mastacalis* of Mello and Moojen (1979).

Table 2.—External, cranial and dental measurements (in millimeters) of marsupial species. See the introduction to the Accounts of Species for an explanation of the abbreviations. The mean and observed range are given for each measurement.

	ToL	TL	HF	E	WT	GSL	BL
<i>Didelphis albiventris</i>							
Adult males, 2	703.5 (700-707)	316.0 (314-318)	50.5 (50-51)	56.0 (55-57)	1000+	98.3	88.3
Adult females, 2	680.5 (656-705)	322.0 (305-339)	46.5 (45-48)	56.0 (52-60)	(955-1000+)	91.0 (86.4-95.5)	83.7 (80.4-87.0)
Subadults, 9 (3 males, 6 females)	470.3 (300-590)	233.8 (152-309)	36.9 (23-46)	45.0 (37-53)	337.5 (70.5-590)	63.0 (43.0-76.0)	56.5 (38.2-69.4)
<i>Marmosa agilis</i>							
Adult males, 8 (203-250)	225.6 (203-250)	133.7 (121-143)	15.5 (13-18)	20.4 (19-21)	25.5 (19.5-33.5)	28.9 (27.9-31.3)	24.9 (23.9-27.3)
Adult females, 8 (219-242)	229.9 (219-242)	125.6 (115-135)	15.1 (12-17)	19.9 (18-22)	26.1 (21.0-32.9)	28.9 (28.0-29.7)	25.2 (24.4-26.0)
Subadults, 22 (13 males, 9 females)	197.3 (164-235)	113.6 (95-132)	15.1 (13-18)	19.3 (16-22)	15.1 (8.5-18.0)	26.5 (23.0-29.8)	22.6 (19.2-25.8)
<i>Marmosa</i> sp.							
Adult males, 1	201.0	91.0	13.0	19.0	35.9	29.4	26.2
<i>Monodelphis americana</i>							
Adult males, 1	139.0	46.0	18.0	14.0	19.5	28.2	25.0
Adult females, 2 (160-175)	167.5 (160-175)	50.0 (49-51)	17.5 (17-18)	14.5 (14-15)	32.8 (32.5-33.0)	30.9 (30.4-31.4)	28.0 (27.6-28.4)
Subadults, 11 (5 males, 6 females)	120.8 (100-137)	35.5 (31-44)	14.4 (12-16)	11.0 (8-14)	14.0 (9.0-17.0)	25.5 (22.7-27.6)	22.5 (19.4-24.7)
<i>Monodelphis domestica</i>							
Adult females, 2 (175-180)	177.5 (175-180)	61.5 (58-65)	17.5 (17-18)	21.0 (20-22)	39.3 (32.0-46.5)	33.1 (32.3-33.9)	30.1 (29.1-31.0)
<i>Monodelphis kuni</i>							
Adult males, 2 (113-114)	113.5 (113-114)	37.0 (36-38)	12.0 (10-14)	10.5 (10-11)	11.3 (8.5-14.0)		
<i>Philander opossum</i>							
Adult males, 1	568.0	280.0	42.0	38.0	430.0	72.0	65.5
Adult females, 1	595.0	295.0	43.0	39.0	400.0	71.4	65.6

Table 2.—Continued.

	BB	IB	MB	ZB	PL	MTRL
<i>Didelphis albiventris</i>						
Adult males, 2	27.3	9.5	31.1	54.0	52.3	33.9
Adult females, 2	26.9 (26.1–27.6)	9.8 (9.7–9.8)	26.3 (23.7–28.8)	47.4 (45.5–49.3)	51.6 (49.0–54.1)	33.6 (32.4–34.8)
Subadults, 9 (3 males, 6 females)	19.3 (16.1–21.5)	9.4 (8.8–9.8)	20.5 (14.9–24.0)	33.6 (22.9–41.0)	35.5 (25.3–43.7)	23.8 (15.8–32.1)
<i>Marmosa agilis</i>						
Adult males, 8		4.7 (4.3–5.3)	11.0 (10.7–11.3)	15.5 (14.8–16.5)	14.4 (13.9–15.6)	11.1 (10.7–11.4)
Adult females, 8		4.9 (4.7–5.3)	11.0 (10.8–11.5)	16.1 (15.5–16.9)	14.4 (13.8–14.7)	10.7 (10.4–11.0)
Subadults, 22 (13 males, 9 females)		4.6 (4.3–5.1)	10.5 (9.6–11.2)	14.3 (12.2–16.5)	13.3 (11.5–14.7)	10.3 (9.0–10.9)
<i>Marmosa</i> sp.						
Adult males, 1	10.2	3.9	10.7	16.2	15.1	10.9
<i>Monodelphis americana</i>						
Adult males, 1	11.2	5.5	8.9	14.5	14.5	11.5
Adult females, 2	11.0 (10.9–11.0)	5.5 (5.4–5.5)	11.8 (11.5–12.1)	16.4 (16.0–16.8)	16.0 (15.8–16.1)	11.9 (11.7–12.0)
Subadults, 11 (5 males, 6 females)	10.3 (9.6–11.7)	5.2 (4.8–5.5)	10.3 (9.6–10.9)	13.4 (12.1–14.2)	13.2 (11.7–14.5)	10.7 (8.8–11.5)
<i>Monodelphis domestica</i>						
Adult females, 2	11.8 (11.7–11.9)	5.7 (5.5–5.8)	12.8	17.7 (17.5–17.9)	17.9 (17.3–18.4)	14.0
<i>Monodelphis kunsi</i>						
Adult males, 2						
<i>Philander opossum</i>						
Adult males, 1	20.0	7.9	22.1	36.2	40.1	29.6
Adult females, 1	21.9	8.2	22.3	37.6	40.3	29.3

lactating. Subadult males were collected in March ($n = 2$), May ($n = 2$) and June ($n = 1$). Subadult females were collected in February ($n = 3$), March ($n = 2$) and May ($n = 1$).

Molt.—Molting adult animals were recorded in the months of March ($n = 1$), July ($n = 1$), and November ($n = 1$). Molting juveniles and subadults were found in the months of February ($n = 2$), March ($n = 4$), May ($n = 1$), and June ($n = 1$); one individual captured in February was not molting. Since January–February coincides with the peak of the rainy season, it is possible that molting in this species is confined to the dry season.

Ectoparasites.—The following ectoparasites were collected from this species: Siphonaptera (*Adoratopsylla antiquorum* (Rothschild)); Parasitiformes (*Androlaelaps* sp., *Ixodes* sp.); Acariiformes (undetermined species).

Habitat.—This small, uncommon, terrestrial marsupial was captured exclusively within the gallery forest.

Remarks.—All specimens (ca. 10–30 gm) which were prepared as scientific specimens had three dark stripes dorsally. However, two larger males that lacked the dorsal stripes were captured and released on the mark-recapture grid. Pelage variation in this species needs further study. Paula (1983) caught this species only in the gallery forest of the National Park of Brasília.

Monodelphis domestica (Wagner)

1842. *Didelphys domestica* Wagner, Arch. Naturgesch., 8:359.

Specimens examined (2).—GOIÁS: approx. 7 km SE Cristalina, 1 (OMNH). MATO GROSSO DO SUL: Fazenda Nhumirim, 150 km SE Corumbá, 1 (OMNH).

Measurements.—See Table 2.

Reproduction.—The adult female collected in Goiás was neither pregnant nor lactating. No data are available for a second female collected in Mato Grosso do Sul.

Molt.—The entire dorsum of the specimen collected on 7 May at Cristalina showed signs of molt, while molting was evident only on the midline of the venter. No data are available for the specimen collected in Mato Grosso do Sul.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Androlaelaps* near *hirsutis* Furman, *Androlaelaps* sp.).

Habitat.—The specimen from Cristalina, Goiás, 90 km S Brasília, was collected in campo rupestre, but probably occurs in similar rocky outcrop areas near Brasília. Mares et al. (1981) and Streilen (1982*d*) reported that *M. domestica* preferred rocky habitats in the caatinga.

Remarks.—Fonseca and Redford (1984) reported this species in cerrado habitat, while Streilein (1982*a*, 1982*c*, 1982*d*, 1982*e*, 1982*f*) provides detailed information on behavior and ecology in the caatinga. In Formosa, Goiás, this species was also captured (Mello, 1980; Mello and Moojen, 1979). A single individual was captured during an ecological study in Minas Gerais (Dietz, 1983). Alho et al. (1987) and Lacher et al. (1986) captured this species four times in Mato Grosso do Sul.

Monodelphis kunyi Pine

1975. *Monodelphis kunyi* Pine, Mammalia, 39:321.

Specimens examined (2).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH), 1 (UNB).

Measurements.—See Table 2.

Reproduction. — The two adult male specimens, collected in March and August, had scrotal testes. Testes length for the male collected in August was 6 mm.

Molt. — The male collected on 25 August was molting on the nose, behind the eyes and in several areas on the mid-dorsum; no data are available for the second male, which was found dead on a road.

Habitat. — Both specimens were collected from areas of dense cerrado habitat.

Remarks. — The only other known specimens of this species are two individuals taken from northern and southern Bolivia (Anderson, 1982). This report thus extends the range of this apparently uncommon species by about 2100 km.

***Philander opossum* (Linnaeus)**

1758. *Didelphis opossum* Linnaeus, Syst. Nat., 10th ed., 1:55.

Specimens examined (2). — MATO GROSSO: 108 km S Poconé, IBDF, 1 (OMNH), 1 (UNB).

Measurements. — See Table 2.

Reproduction. — No data are available for the female; the male testes measured 14 mm in length.

Molt. — The animals, which were collected on 3 and 4 September, were molting in patches on the dorsum.

Habitat. — Both specimens were collected on successive nights in Tomahawk live traps placed in an inundated post-harvest corn field.

Remarks. — Alho (1981a) found this species common at FAL. Paula (1983) found *Philander* common in swampy areas of gallery forest in the National Park. Mello and Moojen (1979) reported that *Philander* was captured in gallery forest in the Federal District, Mato Grosso and at several sites in Goiás.

Order Chiroptera

Family Phyllostomidae

Subfamily Phyllostominae

***Mimon crenulatum* (E. Geoffroy St.-Hilaire)**

1810. *Phyllostoma crenulatum* E. Geoffroy St.-Hilaire, Ann. Mus. Paris, 15:193, plate 10.

Specimens examined (2). — MINAS GERAIS: Ilhas das Marias, Tres Marias, 1 (OMNH), 1 (UNB).

Measurements. — See Table 3.

Reproduction. — Both females, collected in mid-October, were pregnant with one embryo each (CRL = 30, 35 mm). Nipples were small.

Molt. — Neither individual showed signs of molt.

Habitat. — Both individuals were collected from a group found roosting in a hollow stump about 1.5 m in height along the edge of the reservoir.

Remarks. — Pine et al. (1970) reported collecting this species in Mato Grosso.

Subfamily Glossophaginae

***Anoura caudifer* (E. Geoffroy St.-Hilaire)**

1818. *Glossophaga caudifer* E. Geoffroy St.-Hilaire, Mem. Mus. Hist. Nat. Paris, 4:418, plate 17.

Specimens examined (7). — FEDERAL DISTRICT: 20 km S Brasília, 3 (OMNH), 1 (UNB); 40 km N Brasília, 3 (UNB).

Measurements. — See Table 3.

Reproduction. — Two males collected in March had scrotal testes (mean length = 3.5 mm); no data are available for the male collected in February. Four females

Table 3. — External, cranial and dental measurements (in millimeters) of bat species. See the introduction to the Accounts of Species for an explanation of the abbreviations. The mean and observed range are given for each measurement.

	ToL	TL	HF	E	FL	WT	GSL
<i>Mimon crenulatum</i>							
Adult females, 2	79.5 (78-81)	22.0	9.0 (7-11)	29.0	48.0 (46-50)	21.5 (21.0-22.0)	
<i>Anoura caudifer</i>							
Adult males, 3	60.7 (60-62)	0	11.0 (10-12)	13.7 (13-14)	38.0 (37-39)	11.3 (10.4-12.0)	22.7 (22.2-23.1)
Adult females, 4	59.3 (55-62)	0	9.5 (8-10)	12.8 (9-14)	37.3 (36-38)	12.5 (12.0-13.5)	22.9 (22.7-23.3)
<i>Glossophaga soricina</i>							
Adult males, 1	58.0	5.0	10.0	12.0	36.0	10.8	20.9
Adult females, 2	52.5 (50-55)	5.0 (3-7)	9.0	11.5 (9-14)	35.5 (35-36)	10.2 (10.0-10.3)	21.4 (21.3-21.4)
<i>Carollia perspicillata</i>							
Adult males, 10	62.2 (56-66)	6.5 (4-9)	12.7 (11-14)	18.6 (14-21)	41.8 (40-44)	17.0 (12.8-19.0)	22.7 (21.9-23.2)
Adult females, 10	65.6 (55-75)	7.5 (5-11)	13.2 (10-17)	18.2 (13-22)	42.6 (41-45)	17.8 (16.0-20.0)	22.4 (21.4-23.2)
<i>Artibeus cinereus</i>							
Adult males, 2	52.5 (50-55)	0	11.5 (11-12)	15.5 (13-18)	42.0 (41-43)	13.5 (13.0-14.0)	20.6 (19.9-21.3)
Adult females, 2	53.5 (52-55)	0	9.0 (8-10)	16.0 (15-17)	38.5 (38-39)	15.1 (14.7-15.5)	20.6 (20.4-20.7)
<i>Artibeus literratus</i>							
Adult males, 15	87.6 (81-95)	0	18.7 (16-21)	23.0 (21-25)	69.9 (65-74)	65.3 (43.5-77.5)	31.5 (28.9-32.3)
Adult females, 13	89.8 (80-95)	0	19.2 (16-21)	23.8 (22-25)	70.6 (67-76)	71.0 (48.5-88.3)	31.8 (30.1-32.8)

Table 3.—Continued.

	BL	BB	IB	MB	ZB	PL	MTRL
<i>Mimon crenulatum</i>							
Adult females, 2							
<i>Anoura caudifer</i>							
Adult males, 3	19.3 (18.6–19.7)	9.1 (8.9–9.2)	4.6 (4.5–4.6)	9.7	9.8 (9.6–9.9)	12.4 (12.0–12.8)	8.1 (8.0–8.3)
Adult females, 4	19.7 (19.2–20.3)	9.0 (8.9–9.1)	4.3 (3.5–4.7)	9.4 (9.2–9.7)	9.5 (9.3–9.7)	12.6 (12.4–13.1)	8.3 (8.0–8.6)
<i>Glossophaga soricina</i>							
Adult males, 1	16.8	8.4	4.6	9.0	9.3	10.8	6.9
Adult females, 2	17.4 (17.3–17.5)	8.6 (8.4–8.7)	4.7 (4.6–4.8)	9.1 (9.0–9.2)	9.2 (9.1–9.2)	11.3 (11.2–11.3)	7.2
<i>Carollia perspicillata</i>							
Adult males, 10	17.4	9.8	5.5	11.2		9.5	7.5
Adult females, 10	17.0–17.8 17.3 (17.1–17.7)	9.4–10.3 9.7 (9.5–10.0)	4.7–5.9 5.6 (5.3–6.0)	11.0–11.3 11.0 (10.5–11.4)		9.0–10.2 9.5 (9.1–9.7)	7.2–7.7 7.5 (7.2–7.9)
<i>Aritebus cinereus</i>							
Adult males, 2	16.0	9.6	5.1	10.6	11.9	8.6	6.7
Adult females, 2	15.5–16.4 16.1 (16.0–16.1)	9.1–10.1 9.6	5.0–5.1 5.0 (4.9–5.1)	10.0–11.1 10.5 (10.4–10.6)		8.4–8.8 8.8 (8.6–8.9)	6.6 (6.4–6.7)
<i>Aritebus lituratus</i>							
Adult males, 15	24.2 (22.4–24.9)	15.0 (13.9–15.9)	6.7 (6.2–7.4)	16.6 (14.8–17.6)	18.8 (16.6–19.7)	14.6 (13.4–15.3)	11.1 (10.7–11.4)
Adult females, 13	24.6 (23.2–25.3)	15.4 (14.3–16.3)	6.9 (6.4–7.2)	17.1 (16.4–17.8)	19.1 (17.3–19.9)	14.8 (14.0–15.6)	11.1 (10.7–11.7)

Table 3.—Continued.

	ToL	TL	HF	E	FL	WT	GSL
<i>Sturnira lilium</i>							
Adult males, 12	62.9 (60-68)	0	13.0 (11-15)	16.8 (14-18)	43.2 (41-44)	22.5 (18.0-26.0)	23.2 (22.3-24.2)
Adult females, 9	61.7 (61-64)	0	12.4 (11-14)	15.2 (10-18)	42.6 (41-45)	23.4 (19.0-30.5)	23.0 (22.7-23.7)
<i>Vampyrops lineatus</i>							
Adult males, 9	64.2 (60-67)	0	12.1 (10-14)	17.2 (15-19)	45.1 (43-46)	23.6 (20.9-26.6)	25.5 (24.9-26.1)
Adult females, 6	65.7 (64-70)	0	11.3 (8-14)	16.8 (15-20)	46.7 (45-48)	24.5 (22.5-28.0)	25.3 (24.9-25.6)
<i>Desmodus rotundus</i>							
Adult males, 4	75.3 (74-76)	0	16.8 (16-19)	18.3 (17-19)	58.3 (57-60)	36.2 (34.0-38.8)	24.9 (23.6-26.2)
Adult females, 2	77.5 (77-78)	0	16.0	19.5 (19-20)	60.0 (57-63)	35.2 (33.3-37.0)	25.2 (25.0-25.3)
<i>Epiesicus brasiliensis</i>							
Adult males, 1	86.0	31.0	9.0	15.0	41.0	9.0	16.0
Adult females, 1	96.0	41.0	9.0	15.0	44.0	11.0	16.2
<i>Myotis nigricans</i>							
Adult females, 1	65.0	34.0	6.0	10.0	33.0	5.4	13.5
<i>Molossus molossus</i>							
Sex unknown, 1							15.7
<i>Nyctinomops laticaudatus</i>							
Adult males, 1	95.0	37.0	7.0	16.0	45.0	11.7	17.5

Table 3.—Continued.

	BL	BB	IB	MB	ZB	PL	MTRL
<i>Sturnira lilium</i>							
Adult males, 12	17.6 (17.0–18.0)	11.2 (10.8–11.8)	6.1 (5.7–6.7)	12.5 (12.1–13.1)	14.1 (13.7–14.6)	9.1 (8.7–9.8)	7.0 (6.7–7.3)
Adult females, 9	17.0 (16.4–17.6)	11.1 (10.7–11.4)	6.1 (5.8–6.4)	12.2 (11.8–12.4)	13.8 (13.2–14.1)	8.9 (8.6–9.4)	6.8 (6.5–7.2)
<i>Vampyrops lineatus</i>							
Adult males, 9	19.6 (19.3–20.1)	11.2 (10.3–11.5)	6.3 (6.1–6.6)	12.3 (12.2–12.5)	14.1 (13.7–14.4)	11.7 (11.0–12.1)	8.8 (8.4–9.2)
Adult females, 6	19.4 (19.1–20.0)	11.5 (11.2–11.8)	6.3 (6.0–6.4)	12.4 (12.2–12.8)	14.2 (14.0–14.4)	11.4 (11.1–11.7)	8.9 (8.8–9.0)
<i>Desmodus rotundus</i>							
Adult males, 4	18.5 (18.0–19.2)	11.7 (11.0–13.0)	5.3 (5.2–5.4)	12.5 (12.2–13.4)	12.4 (12.0–12.6)	9.0 (8.6–9.4)	3.5 (3.4–3.7)
Adult females, 2	18.6 (18.2–18.9)	11.5 (11.2–11.7)	5.7	12.8 (12.4–13.2)	12.6 (12.5–12.7)	9.1	3.5 (3.4–3.5)
<i>Eptesicus brasiliensis</i>							
Adult males, 1	11.7	8.0	3.7	8.4	10.6	7.5	6.0
Adult females, 1	13.3	8.2	3.9	8.5	10.7	7.7	6.0
<i>Myotis nigricans</i>							
Adult females, 1	10.6	6.8	3.4	7.0	8.5	6.8	5.1
<i>Molossus molossus</i>							
Sex unknown, 1	12.3	9.2	3.5	10.3	10.4	5.4	5.8
<i>Nyctinomops laticaudatus</i>							
Adult males, 1	14.5	9.5	3.9	10.1	10.8	6.9	6.7

were collected in February. One was pregnant with one embryo (CRL = 20 mm) and had well-developed mammary glands.

Molt.—None of the individuals showed signs of molt.

Habitat.—These bats were netted in campos and cerrados in association with flowering *Caryocar brasiliensis*, in gallery forests (over a stream), and in orchards.

Remarks.—Glass and Encarnação (1982) reported specimens from western Minas Gerais. Coimbra et al. (1982) found this species in forest and grassland habitats in Goiás.

Glossophaga soricina (Pallas)

1766. *Vespertilio soricinus* Pallas, Misc. Zool., p. 48, plates 4, 5.

Specimens examined (3).—FEDERAL DISTRICT: 25 km S Brasília, 2 (OMNH); 40 km N Brasília, 1 (UNB).

Measurements.—See Table 3.

Reproduction.—The single adult male, captured in May, had scrotal testes (length = 2 mm). One adult female, collected in early February, was not pregnant or lactating. No information was recorded for a second adult female collected in late February.

Molt.—None of the individuals showed signs of molt.

Habitat.—Both females were netted near mango trees in an orchard. The male was netted in an open grassy area near a house.

Remarks.—Specimens have been captured in Mato Grosso (Pine et al., 1970; Schaller, 1983) and in western Minas Gerais (Glass and Encarnação, 1982).

Subfamily Carollinae

Carollia perspicillata (Linnaeus)

1758. *Vespertilio perspicillata* Linnaeus, Syst. Nat., 1:31.

Specimens examined (20).—FEDERAL DISTRICT: 20 km S Brasília, 6 (OMNH), 8 (UNB); 25 km S Brasília, 1 (OMNH); 40 km N Brasília, 2 (OMNH). MATO GROSSO: 100 km S Poconé, 1 (OMNH), 2 (UNB).

Measurements.—See Table 3.

Reproduction.—Six adult males were captured in January. No data are available for three of them, but three had testes lengths of 3, 3, and 4 mm. One collected in February had inguinal testes (length = 3 mm); a second had a testis length of 4 mm. No data are available for a male collected in March. The male captured in April had inguinal testes (length = 3 mm). Females were collected in January ($n = 2$), February ($n = 3$), March ($n = 2$) and September ($n = 3$). One lactating female was captured in January and a second in March. A pregnant female captured in February had one embryo (CRL = 11 mm).

Molt.—A female captured in January was molting on the head and right side of the dorsum. A female collected in February was also molting on the head and mid-dorsal region.

Habitat.—Three specimens of *Carollia* were found roosting under an old wooden bridge on the Transpantaneira Highway (Mato Grosso). In the Federal District, *Carollia* were netted almost exclusively over streams within gallery forests. In February three specimens were netted in an orchard.

Remarks.—The species was also captured in Mato Grosso by Pine et al. (1970) and Schaller (1983). Glass and Encarnação (1982) collected specimens in western Minas Gerais. Coimbra et al. (1982) collected specimens in gallery forest and grasslands in Goiás and at FAL.

Subfamily Stenoderminae

Artibeus cinereus (Gervais)

1856. *Dermanura cinerea* Gervais, Exped. Castelnau Zool., p. 36, plate 7, figs. 4, 4a, 11, 3.

Specimens examined (4).—FEDERAL DISTRICT: 20 km S Brasília, 2 (OMNH), 1 (UNB); 40 km N Brasília, 1 (UNB).

Measurements.—See Table 3.

Reproduction.—Reproductive information was not available for a male collected in January. A second male, collected in May, had inguinal testes (length = 2 mm). The two females collected in February were not pregnant or lactating.

Molt.—No individual showed signs of molt.

Habitat.—Specimens were netted in gallery forest and orchards.

Remarks.—Pine et al. (1970) collected this species in Mato Grosso.

Artibeus literatus (Olfers)

1818. *Phyllostomus lituratus* Olfers, in Eschwege, Neue Bibl. Reisenb., p. 224.

Specimens examined (28).—FEDERAL DISTRICT: 20 km S Brasília, 14 (OMNH), 13 (UNB); 40 km N Brasília, 1 (UNB).

Measurements.—See Table 3.

Reproduction.—Males collected in February had testes with a mean length of 5.7 mm ($n = 3$). Of seven males collected in March, one had scrotal testes (length = 9 mm), five had inguinal testes (mean length = 4.7 mm); reproductive information was not available for one. In April, one male had scrotal testes (length = 8 mm) and three had inguinal testes (mean length = 5 mm). A male collected in May had inguinal testes (length = 4 mm). Females were collected in February ($n = 3$), March ($n = 5$), April ($n = 3$) and May ($n = 2$). One female collected in February was pregnant and lactating (one embryo, CRL = 45 mm), one was lactating, and one was not pregnant or lactating. No female collected in March was pregnant or lactating. Two females collected in April were neither lactating nor pregnant; one was pregnant (one embryo, CRL = 3 mm) and had large, well-developed mammae. One female collected in May also had large, well-developed mammae; a second did not.

Molt.—One female captured in March was molting on the head and the posterior one-half of the venter.

Habitat.—Specimens collected in February, March and April were netted in orchards (especially near goiabas with fruit). Specimens collected in March, April and May were netted over a stream in the gallery forest.

Remarks.—This species has also been reported from Mato Grosso (Pine et al., 1970; Schaller, 1983) and western Minas Gerais (Glass and Encarnação, 1982). Coimbra et al. (1982) reported this species in the forest at FAL.

Sturnira lilium (E. Geoffroy St.-Hilaire)

1810. *Phyllostoma lilium* E. Geoffroy St.-Hilaire, Ann. Mus. Hist. Nat. Paris, 15:181-182.

Specimens examined (21).—FEDERAL DISTRICT: 20 km S Brasília, 5 (OMNH), 6 (UNB); 25 km S Brasília, 1 (UNB); 40 km N Brasília, 4 (OMNH), 5 (UNB).

Measurements.—See Table 3.

Reproduction.—A male collected in January had scrotal testes (length = 6 mm). Males collected in February ($n = 4$) and April ($n = 1$) had inguinal testes (mean

length = 3.5 mm); no data are available for additional specimens collected in January ($n = 1$), February ($n = 3$), March ($n = 1$) and April ($n = 1$). Females collected in January ($n = 2$) and February ($n = 2$) were lactating. Other females collected in January ($n = 1$), February ($n = 2$) and March ($n = 1$) showed no signs of lactation and were not pregnant. One female, collected in March, was pregnant; the single embryo was large (CRL = 42 mm) and well developed.

Molt.—None of the individuals showed signs of molt.

Habitat.—Specimens were netted in January ($n = 4$), February ($n = 7$), March ($n = 1$) and April ($n = 2$) over streams in gallery forests. Specimens ($n = 5$) were also netted in an orchard next to the gallery forest in February and in a grassy area next to a house in March ($n = 1$).

Remarks.—Specimens were collected by Pine et al. (1970) and Schaller (1983) in Mato Grosso and by Glass and Encarnaç o (1982) in western Minas Gerais. Coimbra et al. (1982) reported this species from gallery forest in Goi as and at FAL.

Vampyrops lineatus (E. Geoffroy St.-Hilaire)

1810. *Phyllostoma lineatum* E. Geoffroy St.-Hilaire, Ann. Mus. Hist. Nat. Paris, 15:180.

Specimens examined (16).—FEDERAL DISTRICT: 20 km S Bras lia, 1 (OMNH), 6 (UNB); 25 km S Bras lia, 4 (OMNH), 1 (UNB); 40 km N Bras lia, 3 (OMNH), 1 (UNB).

Measurements.—See Table 3.

Reproduction.—Three males collected in February had well-developed testes (mean length = 3.7 mm); no data are available for a fourth male collected during this month or for five males collected in January. Females were collected in January ($n = 1$), February ($n = 2$), March ($n = 1$), May ($n = 1$) and December ($n = 1$). One of two females taken in February was pregnant with one embryo (CRL = 27 mm); both had large, well-developed mammary glands. No data are available for the female collected in December and the one collected in January and for one specimen for which the sex was not known.

Molt.—None of the individuals showed signs of molt.

Habitat.—This species was netted almost exclusively in orchards, especially in association with mangos. Four specimens were netted over streams in gallery forests.

Remarks.—Specimens have been reported from Mato Grosso (Pine et al., 1970) and western Minas Gerais (Glass and Encarnaç o, 1982). Sazima and Sazima (1975) studied the foraging behavior of this species on *Lafoensia pacari* in Minas Gerais. Coimbra et al. (1982) reported this species in grasslands in Goi as.

Subfamily Desmodontinae

Desmodus rotundus (E. Geoffroy St.-Hilaire)

1810. *Phyllostoma rotundum* E. Geoffroy St.-Hilaire, Ann. Mus. Hist. Nat. Paris, 15:181.

Specimens examined (6).—FEDERAL DISTRICT: 20 km S Bras lia, 3 (OMNH), 3 (UNB).

Measurements.—See Table 3.

Reproduction.—Two males captured in February had scrotal testes (mean length = 5 mm); data for a third male are not available. A male collected in April had inguinal testes (length = 3 mm). The two females collected in February and March were not pregnant or lactating.

Molt.—None of the individuals showed signs of molt.

Habitat.—Specimens were collected in orchards ($n = 4$) and over a stream in the gallery forest ($n = 2$).

Remarks.—Glass and Encarnação (1982) reported this species from western Minas Gerais. Coimbra et al. (1982) found this species to occur in many habitats in Goiás and the Federal District.

Family Vespertilionidae
Subfamily Vespertilioninae

Eptesicus brasiliensis (Desmarest)

1819. *Vespertilio brasiliensis* Desmarest, Nouv. Dict. Hist. Nat. Paris, 2nd ed., 35:478.

Specimens examined (2).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH), 1 (UNB).

Measurements.—See Table 3.

Reproduction.—The male, captured in April, had inguinal testes (length = 6 mm). The female was captured in January; no embryos were present and the animal was not lactating.

Molt.—Neither individual showed signs of molt.

Habitat.—Both specimens were netted over a small stream in the gallery forest.

Myotis nigricans (Schinz)

1821. *Vespertilio nigricans* Schinz, Thierreich, 1:179.

Specimen examined (1).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH).

Measurements.—See Table 3.

Reproduction.—Captured in February, this individual was not pregnant or lactating.

Molt.—The single individual showed no sign of molt.

Habitat.—This specimen was netted in an orchard.

Remarks.—Glass and Encarnação (1982) captured in western Minas Gerais, while Schaller (1983) reported specimens from Mato Grosso.

Family Molossidae

Molossus molossus (Pallas)

1766. *V. (espertilio) molossus* Pallas, Misc. Zool., p. 45–50.

Specimens examined (1).—FEDERAL DISTRICT: Federal District, 1 (OMNH).

Measurements.—See Table 3.

Remarks.—No data on reproductive condition, molt and habitat are available for this specimen. Pine et al. (1970) and Schaller (1983) collected this species in Mato Grosso.

Nyctinomops laticaudatus (E. Geoffroy St.-Hilaire)

1805. *Molossus laticaudatus* E. Geoffroy St.-Hilaire, Ann. Mus. Hist. Nat. Paris, 6:156.

Specimen examined (1).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH).

Measurements.—See Table 3.

Reproduction.—The single specimen, collected in April, was not pregnant or lactating.

Molt.—There was no evidence of molt.

Habitat.—The specimen was netted in the cerrado next to flowering *Caryocar brasiliensis*.

Order Primates
Family Cebidae
Subfamily Cebinae

Cebus apella (Linnaeus)

1758. *Simia apella* Linnaeus, Syst. Nat., 10th ed., 1:28.

Remarks.—Fonseca and Redford (1984) reported that this species has not been observed on the IBGE Reserve for a number of years although they have been located in nearby gallery forests. This species was commonly observed in the gallery forests of both FAL and IBGE during our study. Also, several previously captive individuals were released on the reserve by IBGE personnel during our study. Schaller (1983) studied this species in Mato Grosso.

Subfamily Alouattinae

Alouatta caraya (Humboldt)

1812. *Simia caraya* Humboldt, Rec. Observ. Zool., 1:355.

Remarks.—This species was observed in the gallery forests of the Federal District (FAL and IBGE) and in forests near the IBDF reserve (Mato Grosso, near Poconé). An adult male was observed in an agricultural area (FAL) surrounded by cerrado (*sensu stricto*) over a kilometer away from the nearest gallery forest. Alho et al. (1987) and Lacher et al. (1986) observed this species only during diurnal censuses in Mato Grosso do Sul, and Schaller (1983) worked intensively with the ecology of this species in the pantanal.

Subfamily Callitrichinae

Callithrix jacchus (Linnaeus)

1758. *Simia jacchus* Linnaeus, Syst. Nat., 10th ed., 1:27.

Remarks.—This species was commonly observed in all gallery forest and cerrado habitats of central Brazil. It was also seen in cerrado habitats and three individuals were seen in an isolated *Vochysia* tree in the middle of campo limpo at FAL. Fonseca and Redford (1984) frequently observed this species in the gallery forest. Fonseca and Lacher (1984) found two groups living in the cerrado of IBGE. Foraging activity and diet of the species are discussed by Fonseca and Lacher (1984) and Lacher et al. (1984).

Order Xenarthra
Family Dasypodidae

Cabassous unicinctus (Linnaeus)

1758. *Dasypus unicinctus* Linnaeus, Syst. Nat., 10th ed., 1:50.

Ectoparasites.—A female tungid flea (*Tunga* sp.) was excised from the inguinal region.

Remarks.—This highly fossorial armadillo was observed in cerrado habitats of FAL and IBGE. One female was captured by hand as it attempted to cross a road. It was examined for ectoparasites and released. Fonseca and Redford (1984) reported capturing one individual in an open grassy field of the IBGE Reserve.

Dasypus novemcinctus Linnaeus

1758. *Dasypus novemcinctus* Linnaeus, Syst. Nat., 10th ed., 1:51.

Remarks.—We observed this armadillo in both cerrado and gallery forest. Fonseca and Redford (1984) reported this species in cerrado and cerradão and open areas of IBGE. They also noted that it may place its burrows along gallery forest streams. Schaller (1983) reported this species in the pantanal. Alho et al. (1987) and Lacher et al. (1986) observed *D. novemcinctus* southeast of Corumbá, Mato Grosso do Sul, during both diurnal and nocturnal censuses.

Dasypus septemcinctus Linnaeus

1758. *Dasypus septemcinctus* Linnaeus, Syst. Nat., 1758:51.

Specimen examined (1).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—No data on reproductive condition are available for this specimen (a male).

Molt.—No data on molt are available for this specimen.

Habitat.—This individual was found dead on a dirt road between a eucalyptus grove and campo sujo.

Euphractus sexcinctus (Linnaeus)

1758. *Dasypus sexcinctus* Linnaeus, Syst. Nat., 10th ed., 1:51.

Remarks.—Individuals were observed at FAL and IBGE. A specimen was collected in cerrado by Fonseca and Redford (1984) on the IBGE Reserve. This species was observed during diurnal censuses southeast of Corumbá, Mato Grosso do Sul (Alho et al., 1987; Lacher et al., 1986). Schaller (1983) also found it in Mato Grosso.

Priodontes maximus (Kerr)

1792. *Dasypus maximus* Kerr, Anim. Kingdom, p. 112.

Remarks.—The status of this species at FAL and IBGE is uncertain. Fonseca and Redford (1984) reported fresh burrows in cerrado at IBGE in 1981. An active burrow (>40 cm in both height and width) was observed by DG in cerrado at IBGE in March 1988. Burrows of this species were found by Schaller (1983) in the pantanal.

Family Myrmecophagidae

Myrmecophaga tridactyla Linnaeus

1758. *Myrmecophaga tridactyla* Linnaeus, Syst. Nat., 10th ed., 1:35.

Remarks.—Several individuals were seen near Poconé, Mato Grosso. A skull of this species was observed at Tres Marias in 1983. Shaw et al. (1985) reported on the foraging patterns, prey abundance, and population density of giant anteaters in western Minas Gerais. Alho et al. (1987) and Lacher et al. (1986) observed this species southeast of Corumbá, Mato Grosso do Sul, only during diurnal censuses. Schaller (1983) observed a single individual in the pantanal.

Tamandua tetradactyla (Linnaeus)

1758. *Myrmecophaga tetradactyla* Linnaeus, Syst. Nat., 10th ed., 1:35.

Specimen examined (1).—MATO GROSSO: 109 km E Cuiaba, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—No reproductive data are available for this specimen (a female).

Molt.—This specimen was not molting.

Habitat.—The specimen was found dead on a road in an agricultural area of the cerrado.

Remarks.—A skull was observed at the Estação Ecologica de Pirapitinga, near Tres Marias, Minas Gerais. Fonseca and Redford (1984) reported finding a carcass of this species in cerrado habitat. Alho et al. (1987) and Lacher et al. (1986) observed *T. tetradactyla* southeast of Corumbá, Mato Grosso do Sul, during both diurnal and nocturnal censusing. Schaller (1983) observed this species in the pantanal.

Order Lagomorpha

Family Leporidae

Sylvilagus brasiliensis (Linnaeus)

1758. *Lepus brasiliensis* Linnaeus, Syst. Nat., 10th ed., 1:58.

Specimens examined (3).—FEDERAL DISTRICT: 25 km S Brasília, 2 (OMNH), 1 (UNB).

Measurements.—See Table 4.

Reproduction.—All three specimens were collected in June. The male had scrotal testes (length = 8 mm). The adult female was pregnant. Two embryos were found in the right uterine horn and one was situated in the left. Mammary development was slight. The subadult female was not pregnant.

Molt.—Molting was observed on the mid-dorsum of the adult female but was absent in the male and the subadult female.

Ectoparasites.—The following ectoparasites were collected from this species: Siphonaptera (*Polygenis* sp.); Parasitiformes (*Amblyomma* sp.).

Habitat.—All three specimens were collected in traps set either along a stream or an irrigation ditch. One was trapped at an interface between disturbed gallery forest and an orchard, one trapped in a disturbed marshy area below an orchard, and the third trapped near the edge of an orchard. Although these rabbits were observed in both upland and lowland habitats, most individuals were observed in or near the gallery forest. This species is common in agricultural areas.

Remarks.—Fonseca and Redford (1984) observed individuals in cerrado, cerrado, and campo habitats at IBGE. Schaller (1983) reported this species as rare in the pantanal.

Order Rodentia

Family Muridae

Subfamily Sigmodontinae

Akodon cursor (Winge)

1887 (1888). *Habrothrix cursor* Winge, E. Mus. Lundii, 1(3):25.

Specimens examined (16).—FEDERAL DISTRICT: 20 km S Brasília, 8 (OMNH), 6 (UNB); 20 km SW Brasília, 2 (OMNH).

Measurements.—See Table 4.

Reproduction.—Adult males with scrotal testes were captured in March ($n = 1$; length = 17 mm), July ($n = 2$; length = 8, 14 mm) and August ($n = 1$; length = 12 mm). Adult males with inguinal testes were collected in May ($n = 2$; length = 6, 7 mm). Subadult males with abdominal testes were captured in March ($n = 1$; length = 4 mm) and May ($n = 1$; length = 2 mm). Adult females were collected in February ($n = 1$), March ($n = 1$), July ($n = 1$) and August ($n = 1$). A pregnant female was collected in August (three embryos, mean CRL = 11 mm) and a lactating female in March. Both females collected in February and July had well-developed mammae. Subadult females were captured in February ($n = 1$), March ($n = 1$), April ($n = 1$) and May ($n = 1$).

Molt.—Adult, subadult and juvenile individuals were found molting in February ($n = 2$), March ($n = 4$), April ($n = 1$), May ($n = 3$), July ($n = 3$) and August ($n = 2$). Specimens from other months were not available for examination.

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Parasitiformes (*Androlaelaps rotundus* Fonseca, *A. fahrenheitzi* (Berlese)).

Habitat.—All specimens were collected in terrestrial traps in the gallery forest, generally in open grassy areas within the forest caused by tree falls.

Remarks.—This species occurred exclusively within the gallery forest. Individuals are terrestrial and nocturnal. Most captures (9 of 16) were recorded from the open, grassy areas associated with fallen trees. A similar pattern of habitat selection was reported by Nitikman and Mares (1987). In the field, this species is easily confused with *Bolomys lasiurus*. Mello (1977, 1980) and Mello and Moojen (1979) listed this species as *Zygodontomys lasiurus*; those individuals captured in the gallery forest are probably *A. cursor*. Mello (1980) reported on the population dynamics of this species.

Akodon reinhardti Langguth

1975. *Akodon reinhardti* Langguth, *Papeis Avulsos de Zool.*, 29:45–54.

Specimens examined (6).—FEDERAL DISTRICT: 20 km S Brasília, 3 (OMNH), 3 (UNB).

Measurements.—See Table 4.

Reproduction.—Adult males were collected in January ($n = 1$; length = 5 mm) and September ($n = 1$; length = 6 mm). A juvenile male was collected in October. Adult females were collected in August, September and October. The female collected in October was pregnant (2 embryos; CRL = 14 mm).

Molt.—Three individuals (all adults) were in various stages of molt in January, September and October.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Androlaelaps foxi* Fonseca, *A. pachyptilae* (Zumpt and Till), *A. fahrenheitzi* (Berlese)); Acariformes (undetermined species).

Habitat.—Three animals were captured in cerrado, two in campo sujo, and one in dry campo limpo.

Remarks.—Dietz (1983) captured a number of individuals of what he called *Akodon lasiotis* in cerrado and grassland habitats in Minas Gerais. These specimens may be *Akodon reinhardti*.

Akodon sp. 1

Specimen examined (1).—FEDERAL DISTRICT: 25 km S Brasília, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—The adult male which was collected in May had inguinal testes (length = 5 mm).

Molt.—This specimen was molting both dorsally and ventrally.

Habitat.—The specimen was collected in cerrado habitat.

Remarks.—Externally this specimen resembles *Akodon reinhardti*, but is much larger (46.5 g vs. 17.6 g for *A. reinhardti*). However, it has the same dark reddish color of *A. reinhardti*. At present, it is unidentified.

Akodon sp. 2

Specimens examined (1).—FEDERAL DISTRICT: 20 km S Brasília, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—The subadult female, collected in March, was not pregnant or lactating.

Molt.—The specimen was molting.

Habitat.—The individual was collected in campo sujo near a pond.

Bolomys lasiurus (Lund)

1841. *Mus lasiurus* Lund, Kongl. Dansk. Vid. Selsk. Naturv. Math. Afhandl., 8:50.

Specimens examined (147).—FEDERAL DISTRICT: 20 km S Brasília, 70 (OMNH), 54 (UNB), 1 (IBGE); 21 km S Brasília, 1 (OMNH); 25 km S Brasília, 3 (OMNH), 7 (UNB); 20 km SW Brasília, 1 (OMNH), 1 (UNB). MINAS GERAIS: Três Marias, Ilha das Marias, 3 (OMNH), 6 (UNB).

Measurements.—See Table 4 (data from Macêdo and Mares, 1987).

Reproduction.—Males with scrotal testes were collected in January ($n = 7$; mean length = 9.1 mm), March ($n = 4$; mean length = 10.8 mm), May ($n = 3$; mean length = 11 mm), August ($n = 2$; mean length = 10 mm), October ($n = 4$; mean length = 13 mm) and November ($n = 1$; length = 10 mm). Males with inguinal testes were collected in January ($n = 1$; no measurement), February ($n = 1$; length = 10 mm), April ($n = 11$; mean length = 8.2 mm), May ($n = 10$; mean length = 7.1 mm), July ($n = 5$; mean length = 6.4 mm) and October ($n = 3$; length = 3.5 mm). Males (juveniles) with abdominal testes were collected in January ($n = 2$; mean length = 5 mm), March ($n = 4$; length = 5 mm) and April ($n = 8$; mean length = 5 mm). Adult males for which limited data are available were collected in April ($n = 1$), August ($n = 5$), September ($n = 1$) and October ($n = 6$). Additional subadults and juveniles were collected in March ($n = 1$), June ($n = 1$), September ($n = 1$) and October ($n = 1$). Pregnant females were collected in January ($n = 2$; number of embryos, respectively = 5, 5; mean CRL, respectively = 9, 15 mm), March ($n = 5$; number of embryos, respectively = 5, 4, 7, 5, 3; mean CRL, respectively = 27, 12, 26, 34, 18 mm) and October ($n = 4$; number of embryos, respectively = 4, 4, 5, 4; mean CRL, respectively = 6, 8, 7, 18 mm). Lactating females were collected in January ($n = 1$), March ($n = 3$) and April ($n = 2$). Females with a vaginal plug were collected in March ($n = 2$) and April ($n = 2$).

Molt.—Molting individuals were found in all months except June and December. About the same number of individuals were found not to be molting in these same months.

Habitat.—Specimens were caught in the following habitats: campo sujo, dry campo sujo, disturbed campo sujo, wet campo sujo, cerrado, campo limpo, dry campo limpo, wet campo limpo, dry campo limpo/sujo, wet campo limpo/sujo, brejo, disturbed brejo, brejo and cerrado borders, bracken fern and African grass, and in cerrado-cerradão.

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Siphonaptera (*Rhopalopsylla* sp., *Polygenis* sp.); Parasitiformes (*Androlaelaps foxi* Fonseca, *A. fahrenheitzi* (Berlese), *A. rotundus* (Fonseca), *Ambylomma* sp.); Acariformes (undetermined species).

Remarks.—Fonseca and Redford (1984) reported collecting one specimen from cerrado bordering gallery forest on the IBGE Reserve. Alho (1981a), Borchert and Hansen (1983), Mello (1977, 1980), and Mello and Moojen (1979) listed this species as *Zygodontomys lasiurus*; individuals captured in cerradão, cerrado and campo are probably *B. lasiurus*. Individuals captured in gallery forest may be *Akodon cursor*. Paula (1983) found this species in the campo cerrado during all seasons and in the wet campo during the dry season. Pine et al. (1970) and Schaller (1983) captured this species in Mato Grosso. Density, home range, and space utilization for this species was reported by Alho and Souza (1982) and Souza and Alho (1980). Mello (1980) and Valle et al. (1982) studied the population dynamics of this species in Goiás and Minas Gerais, respectively. Microhabitat preference, food habits, activity, and population changes due to fire and flood were studied by Borchert and Hansen (1983). Dietz (1983) found this species restricted to grasslands and cerrado in Minas Gerais.

Calomys callosus (Rengger)

1830. *Mus callosus* Rengger, Naturg. Saug. von Paraguay, Basle, p. 231.

Specimens examined (39).—FEDERAL DISTRICT: 20 km S Brasília, 3 (OMNH), 2 (UNB), 1 (IBGE); 21 km S Brasília, 2 (UNB). MATO GROSSO: 105 km S Poconé, 1 (UNB); 108 km S Poconé, 5 (OMNH), 4 (UNB); 115 km S Poconé, 5 (OMNH), 5 (UNB). MINAS GERAIS: Tres Marias, Ilha das Marias, 3 (OMNH), 8 (UNB).

Measurements.—See Table 4.

Reproduction.—Males were caught in both September and October. Mean testis length for males trapped in September is 11.8 mm ($n = 13$). Mean testis length for males trapped in October is 10.1 mm ($n = 8$). Data are not available for five males trapped in September. Pregnant females were caught in both September ($n = 7$) and October ($n = 1$). Number of embryos and mean CRL, respectively, are: 6, 6 mm; 6, 3 mm; 7, 8 mm; 3, 1 mm; 7, 6 mm; 6, 9 mm; 5, 6 mm; 3, 4 mm. Non-pregnant females were caught in September ($n = 1$) and October ($n = 3$). The sex of one individual was not determined.

Molt.—Individuals were found molting in both September ($n = 15$) and October ($n = 4$); non-molting individuals were also captured in September ($n = 8$) and October ($n = 7$). No data are available for one individual collected in March, three collected in September and one collected in October.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Laelaps mazzai* Fonseca); Acariformes (undetermined species).

Habitat.—Individuals of this species were captured in cerrado, cerradão, gallery forest margins, brejo, and borders between cerrado/campo sujo and brejo in the Federal District. At Tres Marias, Minas Gerais, specimens were collected in campo sujo, cerrado, dry gallery forest, and margins between the lake and the dry gallery forest. In Mato Grosso, specimens were caught in buildings, disturbed areas along roads, margins between dry forest and ponds, and margins between grassland and marsh.

Remarks.—Alho (1981a) found *Calomys* in cerrado, cerradão, campo, and gallery forest habitats at FAL. In the Federal District and Goiás, this species was

captured in gallery forest, cerradão, cerrado and campo (Mello, 1977; Mello and Moojen, 1979). Mello (1980) and Valle et al. (1982) studied the population dynamics of this species in Goiás and Minas Gerais, respectively. A few captures of this species in Mato Grosso do Sul were reported by Alho et al. (1987) and Lacher et al. (1986). Schaller (1983) reported this species in the pantanal.

Calomys tener (Winge)

1888. *Hesperomys tener* Winge, E. Mus. Lundii, 1(3):15, plate 2, figure 3.

Specimens examined (35).—FEDERAL DISTRICT: 20 km S Brasília, 12 (OMNH), 7 (UNB). MINAS GERAIS: Tres Marias, Ilha das Marias, 8 (OMNH), 8 (UNB).

Measurements.—See Table 4.

Reproduction.—Males were collected in April ($n = 1$; length = 7 mm), May ($n = 1$; length = 4 mm), August ($n = 1$; length = 7 mm), September ($n = 3$; mean length = 7 mm), October ($n = 15$; mean length = 7.3 mm) and November ($n = 1$; no measurement). Pregnant females were collected in October ($n = 3$; number of embryos, respectively = 4, 4, 3; mean CRL, respectively = 15, 8, 4 mm). A fourth pregnant female was also taken in October but no additional data are available. A lactating female with a vaginal plug was collected in January and a female with a vaginal plug was captured in August. Additional females were collected in January ($n = 1$), September ($n = 1$) and October ($n = 5$).

Molt.—Individuals were found molting in January ($n = 1$), April ($n = 1$), May ($n = 1$), August ($n = 1$) and October ($n = 6$). Non-molting animals were collected in January ($n = 1$), August ($n = 1$), September ($n = 3$) and October ($n = 4$). No data are available for the remainder of the specimens.

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Laelaps mazzai* Fonseca).

Habitat.—Individuals were collected in the following habitats: cerrado, campo sujo, cerradão, brejo, campo sujo/cerrado, borders of grassy shores of lakes, and in both gallery forest and campo limpo.

Remarks.—Alho (1981a) found *Calomys* in cerrado, cerradão, campo and gallery forest habitats at FAL. In the Federal District and Goiás, this species was captured in gallery forest, cerradão, cerrado, and campo (Mello, 1977; Mello and Moojen, 1979). Mello (1980) studied the population dynamics of this species in Goiás. Dietz (1983) found this species restricted to grassland and cerrado habitat in Minas Gerais.

Holochilus brasiliensis (Desmarest)

1819. *Mus brasiliensis* Desmarest, Nouv. Dict. Hist. Nat. Paris, 2nd. ed., 29:62.

Specimens examined (5).—MATO GROSSO: 105 km S Poconé, Fazenda Boa Vista, 1 (OMNH); 108 km S Poconé, IBDF, Base de Pesquisas, 1 (OMNH), 1 (UNB); 115 km S Poconé, IBDF, 1 (OMNH), 1 (UNB).

Measurements.—See Table 4.

Reproduction.—All specimens were collected in early September. Two adult males had testes lengths of 16 and 17 mm and a subadult male had testes 8 mm in length. The adult female was neither pregnant nor lactating. No data are available for the subadult female.

Molt.—None of the adult animals were molting. The two subadults were in various stages of molt.

Ectoparasites.—The following ectoparasites were collected from this species:

Parasitiformes (*Gigantolaelaps mattogrossensis* (Fonseca), *Laelaps* sp.); Acariformes (undetermined species).

Habitat.—Specimens were captured in a grassy marsh, a marshy cornfield, along the margin of a grassy pond, or in a disturbed agricultural area. Specimens were caught in both Sherman and Tomahawk traps.

Remarks.—In the Federal District, Goiás and Mato Grosso, Mello and Moojen (1979) found this species in gallery forest. This species was captured in forest along streams near Formosa, Goiás (Mello, 1977, 1980).

Nectomys squamipes (Brants)

1827. *Mus squamipes* Brants, Het. Gesl. Muiz., p. 138.

Specimens examined (30).—FEDERAL DISTRICT: 15 km S, 2.5 km W Brasília, 1 (OMNH); 19 km S Brasília, 2 (OMNH); 20 km S Brasília, 2 (OMNH), 5 (UNB); 25 km S Brasília, 3 (OMNH), 1 (UNB); 20 km SW Brasília, 5 (OMNH), 3 (UNB); 15 km S, 25 km W Brasília, 1 (OMNH), 4 (UNB). GOIÁS: 12 km NE Cristalina, Faz. Nova India, 1 (OMNH); 12 km NE Cristalina, 2 (UNB).

Measurements.—See Table 4.

Reproduction.—Males with inguinal testes were collected in April ($n = 2$; mean length = 15 mm), May ($n = 2$; mean length = 12.5 mm), June ($n = 1$; length = 20 mm), August ($n = 1$; length = 17 mm) and December (a subadult). Males with scrotal testes were captured in April ($n = 1$; length = 17 mm), May ($n = 2$; mean length = 13 mm), July ($n = 2$; mean length = 17.5 mm), August ($n = 4$; mean length = 18.25 mm), October ($n = 1$; length = 17 mm) and November (no measurement). An adult male captured in January had testes 16 mm long, but testis position was not noted. Pregnant females were captured in May ($n = 1$), August ($n = 2$), October ($n = 1$) and November ($n = 1$). Number of embryos varied from three to five. Crown-rump length varied from 6 mm (August) to 25 mm (October). All pregnant females had well-developed mammae. The pregnant female collected in early November and kept in captivity gave birth to three young (two males and one female) on 16 November. No information is available for a female collected in May. A subadult female was collected in both October and November.

Molt.—Molting individuals were captured in January ($n = 1$), April ($n = 3$), May ($n = 4$), June ($n = 1$), July ($n = 1$), August ($n = 6$), October ($n = 3$), November ($n = 1$) and December ($n = 1$). Non-molting individuals were taken in May ($n = 2$), July ($n = 1$), August ($n = 1$) and November ($n = 5$).

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura quadridentata* (Neumann)); Siphonaptera (*Polygenis* sp.); Parasitiformes (*Gigantolaelaps goyanensis* Fonseca, *Laelaps manguinhosa* Fonseca, *Androlaelaps fahrenheitsi* (Berlese), *Amblyomma* sp.); Acariformes (undetermined species).

Habitat.—All but three specimens were collected along streams in the gallery forest. Two of the animals collected at Cristalina were trapped along a brejo stream 20–30 m from the gallery forest edge. One specimen collected in the Federal District was trapped in a disturbed area with bracken ferns and African grass 80–100 m from a gallery forest stream. All specimens but two were collected in Tomahawk traps.

Remarks.—Fonseca and Redford (1984) always found this species in close association with water on the IBGE Reserve. Ernest and Mares (1986) found that *N. squamipes* was a seasonal breeder, since pregnant animals were noted only in the early part of the wet season. Additionally, only 2% of their captures occurred

in dry areas more than 10 m from a stream edge. They noted that this species clearly prefers streams in dense forest where large trees are found. In the National Park of Brasília, Paula (1983) found this species to be common in the gallery forest. This species has also been captured in Mato Grosso (Pine et al., 1970). Mello (1977, 1980) and Mello and Moojen (1979) reported that in the Federal District, Goiás and Mato Grosso, this species prefers the gallery forest. Two individuals were captured during an ecological study in Minas Gerais (Dietz, 1983). Ernest (1986) reviewed the biology of this species.

Oryzomys bicolor (Tomes)

1860. *Hesperomys bicolor* Tomes, Proc. Zool. Soc. London, 1860:217.

Specimens examined (24).—FEDERAL DISTRICT: 20 km S Brasília, 8 (OMNH), 6 (UNB), 1 (IBGE); 21 km S Brasília, 1 (UNB); 25 km S Brasília, 2 (OMNH), 3 (UNB); 20 km SW Brasília, 2 (OMNH), 1 (UNB).

Measurements.—See Table 4.

Reproduction.—Both males collected in February had scrotal testes (mean length = 9.5 mm). A male collected in March had scrotal testes (length = 8 mm); a juvenile male had abdominal testes (length = 3 mm). Of three males collected in May, two had scrotal testes (length = 6, 10 mm) and one had inguinal testes (length = 8 mm). Both males collected in July had scrotal testes (mean length = 8 mm). A juvenile male collected in October had abdominal testes (length = 6 mm); both adult males had scrotal testes (mean length = 8 mm). A male collected in November had scrotal testes (length = 8.5 mm). Adult females were collected in February ($n = 2$), May ($n = 3$), August ($n = 1$), September ($n = 1$) and November ($n = 1$). All females had closed vaginas. Pregnant females were collected in February ($n = 1$; two embryos, CRL = 13 mm), August ($n = 1$; three embryos, CRL = 15 mm), September ($n = 1$; five embryos, CRL = 10 mm) and November ($n = 1$; three embryos, CRL = 6 mm). Subadult and juvenile females were captured in March ($n = 2$) and May ($n = 1$).

Molt.—Specimens taken in October ($n = 3$) and November ($n = 2$) were in full dorso-ventral molt. Some specimens taken in February ($n = 3$), March ($n = 1$), May ($n = 2$), July ($n = 2$), and August ($n = 1$) were in various stages of molt. Specimens not molting were taken in February ($n = 1$), March ($n = 3$), May ($n = 5$) and September ($n = 1$).

Ectoparasites.—The following ectoparasites were collected from this species: Parasitiformes (*Ixodes* sp., *Gigantolaelaps amazonae* Furman, *Laelaps acuminata* Furman, *L. spicata* Furman, *Argitis oryzomys*); Acariformes (undetermined species).

Habitat.—All specimens were collected in arboreal Sherman traps set in gallery forest.

Remarks.—Nitikman and Mares (1987) found this species in various gallery forest microhabitats. Pine et al. (1970) collected this species in Mato Grosso.

Oryzomys capito (Olfers)

1818. *Mus capito* Olfers, in Eschwege, Neue Bibl. Reisenb., 15:209.

Specimens examined (32).—FEDERAL DISTRICT: 20 km S Brasília, 11 (OMNH), 9 (UNB), 1 (IBGE); 21 km S Brasília, 1 (OMNH); 25 km S Brasília, 4 (OMNH), 4 (UNB); 20 km SW Brasília, 2 (OMNH).

Measurements.—See Table 4.

Reproduction.—Adult males were collected in February, March, April, May, September and October. Males with inguinal testes were collected in February ($n = 1$; length = 8 mm), March ($n = 3$; mean length = 7.7 mm), April ($n = 3$; mean length = 7.7 mm) and May ($n = 1$; length = 8 mm). Males with scrotal testes were collected in April ($n = 3$; mean length = 8.5 mm), May ($n = 1$; length = 8 mm), September ($n = 1$; length = 12 mm) and October ($n = 2$; mean length = 10.5 mm). Juvenile and subadult males were collected in March ($n = 1$), April ($n = 1$), May ($n = 1$), June ($n = 2$) and September ($n = 1$). All four juveniles had abdominal testes (mean length = 5.75 mm); two subadults had small scrotal testes (mean length = 7.5 mm). Adult females were collected in February ($n = 1$), March ($n = 2$), April ($n = 1$), July ($n = 1$), October ($n = 1$) and November ($n = 1$). Pregnant females were collected in all of the above months except March and April. Number of embryos varied from three to five; crown-rump lengths of the embryos of individual females averaged, 3, 10, 26 and 35 mm for the months of February, November, July and October, respectively. A nonpregnant but lactating female was collected in March. Pregnant females had open vaginas, whereas nonpregnant females had closed vaginas. Subadult and juvenile females with closed vaginas were collected in January ($n = 1$), March ($n = 1$), September ($n = 1$) and October ($n = 1$).

Molt.—At least some individuals were found in full molt in all months except August and December, when no individuals were captured.

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Siphonaptera (*Polygenis* sp.); Parasitiformes (*Ixodes* sp., *Gigantolaelaps oudemansi* Fonseca; *Androlaelaps fahrenheitzi* (Berlese)); Acariformes (undetermined species).

Habitat.—All specimens, except one, were collected in Sherman traps placed on the ground; all were collected in gallery forests.

Remarks.—Nitikman and Mares (1987) found this species to be almost exclusively terrestrial and to prefer dense forest or complex mosaic forest. Pine et al. (1970) captured this species in Mato Grosso.

***Oryzomys chacoensis* Myers and Carleton**

1981. *Oryzomys chacoensis* Myers and Carleton, Misc. Publ. Mus. Zool. Univ. Michigan, 161:19.

Specimens examined (1).—MATO GROSSO: 115 km S Poconé, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—The adult male, collected in September, had inguinal testes with a length of 12 mm.

Molt.—The specimens showed signs of molt on the dorsum with two patches of active hair growth just posterior to the ears and a patch on each hip.

Habitat.—The single specimen was collected in aquatic vegetation along the margin of a small pond cut back into the dry gallery forest.

***Oryzomys concolor* (Wagner)**

1845. *Hesperomys concolor* Wagner, Arch. Naturgesch., 11(1):147.

Specimens examined (10).—FEDERAL DISTRICT: 20 km S Brasília, 3 (OMNH), 1 (UNB), 1 (IBGE); 25 km S Brasília, 1 (OMNH), 2 (UNB); 20 km SW Brasília, 1 (UNB). MINAS GERAIS: Tres Marias, Ilha das Marias, 1 (OMNH).

Measurements.—See Table 4.

Table 4.—External cranial and dental measurements (in millimeters) for xenarthrans, lagomorphs and rodents. See the introduction to the Accounts of Species for an explanation of the abbreviations. The mean and observed range are given for each measurement.

	ToL	TL	HL	E	WT	GSL	BL
<i>Dasylops septemcinctus</i>							
Adult males, 1	286.0	122.0	41.0	25.0	255.0		
<i>Tamandua tetradactyla</i>							
Adult females, 1	985.0	430.0	90.0	52.0			
<i>Sybilagus brasiliensis</i>							
Adult males, 1	380.0	22.0	87.0	59.0	1000+	76.5	58.2
Adult females, 1	370.0	30.0	88.0	60.0	1000+	74.0	56.9
Subadults, 1 female	290.0	20.0	71.0	51.0	562.0	61.1	47.7
<i>Akodon cursor</i>							
Adult males, 6	215.5 (196-226)	98.2 (91-105)	25.8 (25-27)	19.3 (19-20)	48.6 (34.5-55.9)	29.6 (27.7-30.5)	23.3 (20.9-24.7)
Adult females, 4	205.3 (196-214)	87.5 (82-95)	25.0	18.0 (17-19)	40.0 (31.3-45.5)	29.0 (28.1-29.7)	22.9 (22.0-23.7)
Subadults, 6 (2 males, 4 females)	158.2 (132-181)	72.0 (62-82)	24.0 (21-26)	17.2 (16-18)	20.7 (9.8-26.5)	26.3 (25.6-27.3)	19.6 (17.5-20.8)
<i>Akodon reinhardti</i>							
Adult males, 3	123.7 (116-126)	48.7 (45-52)	17.0	12.0	15.3 (12.5-17.0)	22.6 (21.7-23.4)	18.2 (17.2-19.1)
Adult females, 3	136.7 (126-145)	49.3 (46-52)	17.3 (16-18)	12.7 (12-13)	19.8 (17.5-22.5)	24.1 (24.0-24.2)	19.9 (19.7-20.2)
<i>Akodon</i> sp. 1							
Adult males, 1	161.0	57.0	20.0	18.0	46.5	29.3	24.5
<i>Akodon</i> sp. 2							
Subadults, 1 female	149.0	54.0	17.0	14.0	30.0	25.0	20.0
<i>Bolomys lasiurus</i>							
Adult males						28.4	
Adult females						27.9	
<i>Calomys callosus</i>							
Adult males, 26	172.2 (132-215)	75.0 (55-95)	20.7 (18-23)	16.1 (14-22)	29.9 (17.0-59.0)	25.8 (22.3-28.9)	20.4 (17.6-23.5)
Adult females, 12	175.8 (157-201)	75.8 (66-83)	20.5 (16-24)	16.1 (14-20)	30.0 (22.7-45.0)	26.2 (23.5-27.9)	20.2 (18.6-21.7)

Table 4.—Continued.

	NL	IB	MB	ZB	PL	DL	MTRL
<i>Dasyypus septemcinctus</i>							
Adult males, 1							
<i>Tamandua tetradactyla</i>							
Adult females, 1							
<i>Sybilagus brasiliensis</i>							
Adult males, 1	20.2	16.4	31.5	35.8	29.4	22.4	14.8
Adult females, 1	19.7	15.8	32.4	35.7	29.1	21.7	14.2
Subadults, 1 female	16.5	11.3	28.4	32.5	25.8	18.2	12.5
<i>Akodon cursor</i>							
Adult males, 6	11.6	5.0	12.6	14.8	12.3	7.7	4.7
Adult females, 4	(10.6–12.3)	(4.7–5.1)	(11.5–12.9)	(13.7–15.9)	(11.7–13.0)	(6.9–8.4)	(4.5–5.2)
Subadults, 6	11.6	4.9	12.2	14.4	12.1	7.7	4.6
(2 males, 4 females)	(11.1–12.4)	(4.6–5.1)	(11.9–12.5)	(14.4–14.7)	(11.5–12.5)	(7.6–7.8)	(4.3–4.9)
<i>Akodon reinhardtii</i>							
Adult males, 3	8.8	4.3	10.5	11.8	9.7	5.7	4.0
Adult females, 3	(8.7–8.8)	(3.7–4.7)	(10.1–10.9)	(11.4–12.4)	(9.3–10.3)	(5.2–6.4)	(3.7–4.1)
	8.9	4.5	10.5	12.5	10.8	6.6	4.1
	(8.4–9.4)	(4.4–4.6)	(10.3–10.7)	(12.4–12.5)	(10.5–11.2)	(6.2–6.9)	(4.0–4.2)
<i>Akodon</i> sp. 1							
Adult males, 1	11.1	5.1	12.4	15.4	13.1	8.4	4.6
<i>Akodon</i> sp. 2							
Subadults, 1 female	8.3	4.7		13.2	10.9	6.3	4.7
<i>Bolomys lasiurus</i>							
Adult males	9.7	5.1		15.3	12.9	8.2	4.6
Adult females	9.6	5.0		14.9	12.5	8.1	4.5
<i>Calomys callosus</i>							
Adult males, 26	10.3	4.3	11.4	13.6	11.1	6.4	4.2
Adult females, 12	(8.4–12.7)	(3.9–5.1)	(10.8–11.9)	(11.7–15.1)	(9.7–12.9)	(5.4–7.6)	(3.9–4.5)
	10.5	4.4	11.4	13.9	11.3	6.4	4.3
	(8.9–12.1)	(4.0–4.8)	(10.8–11.7)	(13.3–14.6)	(10.5–12.3)	(5.6–7.1)	(4.1–4.4)

Table 4. — Continued.

	ToL	TL	HL	E	WT	GSL	BL
<i>Calomys tener</i>							
Adult males, 22	141.4 (115-154)	63.8 (55-69)	16.1 (15-17)	13.7 (11-15)	13.5 (9.0-17.0)	22.7 (21.7-24.3)	16.9 (15.7-18.1)
Adult females, 13	138.3 (126-148)	61.3 (50-70)	16.1 (13-20)	13.4 (11-15)	14.1 (11.5-21.5)	21.9 (21.2-23.4)	16.5 (15.7-17.6)
<i>Holochilus brasiliensis</i>							
Adult males, 2	312.5 (311-314)	145.5 (142-149)	39.0	17.0 (16-18)	175.0 (150.0-200.0)	38.3 (37.8-38.7)	31.5 (31.2-31.7)
Adult females, 1	257.0	126.0	39.0	17.0	130.0	36.6	29.5
Subadults, 2 (1 male, 1 female)	231.5 (219-244)	113.0 (110-116)	33.3 (31-35)	15.5 (15-16)	40.0 (35.0-45.0)	30.7	23.8 (23.7-23.9)
<i>Nectomys squamipes</i>							
Adult males, 18	459.8 (391-494)	234.8 (186-254)	55.6 (53-58)	24.1 (21-26)	350.5 (216.0-521.0)	48.2 (43.4-51.7)	39.2 (34.3-42.0)
Adult females, 6	439.8 (420-459)	226.2 (214-234)	54.0 (53-55)	24.2 (23-25)	295.2 (235.0-344.0)	47.1 (44.7-49.8)	38.3 (36.0-40.1)
Subadults, 3 (1 male, 2 females)	346.0 (295-422)	173.0 (147-212)	47.0 (43-52)	21.3 (19-24)	130.0 (78.0-182.0)	39.4 (36.6-43.5)	33.1 (30.2-35.1)
Juveniles, 3 (2 males, 1 female)	105.0 (104-106)	34.7 (34-36)	17.0 (16-18)	6.3 (6-7)			
<i>Oryzomys bicolor</i>							
Adult males, 11	204.4 (191-222)	107.4 (96-115)	21.6 (20-23)	15.7 (15-17)	30.6 (21.5-40.7)	27.7 (26.0-29.1)	21.2 (19.8-21.5)
Adult females, 8	199.0 (190-225)	104.4 (98-118)	21.6 (20-23)	14.6 (13-16)	27.6 (23.0-37.9)	26.8 (25.2-27.9)	20.0 (17.5-21.6)
Subadults, 5 (2 males, 3 females)	162.2 (147-174)	85.4 (82-90)	20.8 (19-22)	13.6 (13-14)	14.8 (11.0-19.5)	24.5 (23.0-25.4)	18.1 (16.8-18.6)
<i>Oryzomys capito</i>							
Adult males, 15	236.5 (210-261)	113.2 (98-122)	29.9 (28-31)	20.7 (19-22)	57.9 (44.0-74.5)	32.4 (30.2-33.9)	25.0 (23.0-26.8)
Adult females, 7	232.7 (217-262)	109.8 (92-127)	28.0 (22-30)	20.4 (17-22)	56.4 (37.7-95.3)	31.4 (29.2-32.3)	24.2 (22.2-25.5)
Subadults, 10 (6 males, 4 females)	181.0 (158-201)	84.1 (69-97)	26.4 (24-29)	17.6 (16-20)	26.2 (17.5-35.8)	27.6 (24.8-29.8)	20.9 (18.3-23.5)

Table 4.—Continued.

	NL	IB	MB	ZB	PL	DL	MTRL
<i>Calomys tener</i>							
Adult males, 22	8.7 (7.6-9.9)	3.8 (3.5-4.0)	10.1 (9.6-11.6)	11.6 (10.9-12.3)	9.3 (8.6-9.8)	5.2 (4.5-5.8)	3.6 (3.4-3.7)
Adult females, 13	8.4 (8.0-9.0)	3.6 (3.3-3.8)	9.9 (9.6-10.0)	11.6 (11.2-11.9)	9.2 (8.5-9.8)	5.2 (4.9-5.6)	3.5 (3.4-3.6)
<i>Holochilus brasiliensis</i>							
Adult males, 2	14.5 (14.3-14.7)	4.9 (4.7-5.1)	14.8	21.5 (21.4-21.6)	18.9 (18.7-19.0)	11.4 (11.3-11.5)	6.8
Adult females, 1	13.7	4.7	13.9	19.9	17.9	10.7	6.9
Subadults, 2 (1 male, 1 female)	11.6	4.4 (4.3-4.5)	12.7 (12.6-12.8)	17.4 (17.1-17.6)	14.7 (14.6-14.7)	8.0 (7.8-8.1)	6.9 (6.7-7.1)
<i>Nectomys squamipes</i>							
Adult males, 18	20.0 (17.4-21.9)	7.8 (7.3-8.7)	17.4 (16.7-18.4)	25.3 (22.9-27.3)	22.7 (20.7-24.9)	13.3 (11.6-14.4)	7.5 (7.2-8.0)
Adult females, 6	18.8 (16.9-20.0)	7.8 (7.3-8.0)	17.3 (16.8-17.8)	24.9 (23.9-26.6)	22.0 (20.6-22.9)	12.8 (11.9-13.7)	7.6 (7.2-7.9)
Subadults, 3 (1 male, 2 females)	15.1 (14.4-16.0)	6.8 (6.3-7.4)	15.4 (14.8-16.0)	21.4 (19.9-23.3)	18.7 (17.5-20.6)	10.4 (9.4-11.8)	7.5 (7.2-7.8)
Juveniles, 3 (2 males, 1 female)							
<i>Oryzomys bicolor</i>							
Adult males, 11	9.2 (8.3-10.5)	4.9 (4.6-5.1)	11.9 (11.4-12.4)	14.7 (13.8-15.3)	11.5 (11.2-12.2)	7.0 (6.7-7.4)	4.2 (4.0-4.6)
Adult females, 8	8.8 (8.2-9.3)	4.7 (3.8-5.2)	11.5 (10.1-12.1)	14.3 (12.3-15.8)	10.8 (9.2-11.6)	6.6 (5.7-7.3)	4.1 (3.5-4.4)
Subadults, 5 (2 males, 3 females)	7.4 (6.5-7.9)	4.6 (4.5-4.8)	10.9 (10.2-11.3)	12.9 (12.1-13.2)	10.2 (9.7-10.8)	6.1 (5.9-6.3)	4.1 (3.8-4.4)
<i>Oryzomys capito</i>							
Adult males, 15	12.9 (11.7-13.9)	5.5 (5.2-5.7)	12.7 (12.1-13.1)	16.6 (15.4-17.9)	13.7 (12.6-14.4)	8.1 (7.1-8.6)	5.2 (4.9-5.4)
Adult females, 7	12.5 (11.7-13.0)	5.2 (4.8-5.7)	12.4 (11.7-12.7)	16.0 (14.9-16.8)	13.3 (12.6-13.7)	7.8 (7.4-8.3)	5.2 (4.8-5.6)
Subadults, 10 (6 males, 4 females)	10.7 (8.3-12.2)	5.0 (4.8-5.4)	11.6 (10.6-12.6)	14.1 (13.1-14.9)	11.8 (10.6-12.5)	6.8 (5.8-7.8)	5.0 (4.5-5.3)

Table 4.—Continued.

	ToL	TL	HL	E	WT	GSL	BL
<i>Oryzomys chacoensis</i>							
Adult males, 1	221.0	124.0	25.0	17.0	25.5	24.5	18.3
<i>Oryzomys concolor</i>							
Adult males, 4	278.3 (270-287)	146.7 (143-153)	27.8 (26-29)	19.3 (18-21)	67.5 (46.1-95.5)	33.6 (31.8-34.7)	26.1 (24.4-27.1)
Adult females, 3	273.7 (265-281)	145.7 (141-149)	28.0 (27-29)	19.7 (19-20)	55.6 (51.0-61.8)	32.1 (31.6-33.1)	24.6 (23.9-25.6)
Subadults, 2 (1 male, 1 female)	223.0 (205-241)	112.0 (100-124)	27.0 (25-29)	18.0 (17-19)	29.3 (23.5-35.0)	28.6 (27.7-29.5)	21.4 (20.5-22.4)
<i>Oryzomys fornesi</i>							
Adult males, 5	181.0 (167-194)	101.6 (94-115)	22.2 (21-24)	14.0 (13-15)	18.8 (15.5-22.5)	23.5 (23.0-24.2)	17.4 (16.9-18.2)
Adult females, 10	184.2 (169-199)	100.4 (93-111)	21.1 (20-23)	13.2 (11-15)	16.4 (12.0-24.0)	22.5 (21.0-23.7)	17.0 (15.3-18.2)
Subadults, 1 (1 female)	158.0	98.0	20.0	11.0	7.7	20.9	15.5
<i>Oryzomys nigripes</i>							
Adult males, 8	199.3 (191-210)	112.5 (102-120)	23.6 (22-25)	16.0 (15-17)	19.0 (16.0-22.3)	24.4 (23.5-25.5)	18.0 (17.0-19.2)
Adult females, 8	206.6 (194-218)	117.6 (106-131)	24.0 (22-26)	15.5 (14-17)	23.1 (15.6-31.5)	24.7 (23.4-26.0)	18.3 (17.0-19.4)
Subadults, 4 (2 males, 2 females)	166.5 (138-194)	95.0 (82-113)	22.3 (20-25)	13.8 (12-15)	10.8 (5.4-14.9)	23.7	16.5 (15.0-17.6)
<i>Oryzomys subflavus</i>							
Adult males, 5	302.4 (267-338)	154.6 (136-173)	32.8 (31-35)	22.4 (20-25)	85.7 (59.0-106.0)	36.2 (33.7-38.8)	28.2 (26.3-30.9)
Adult females, 7	294.9 (236-338)	159.0 (142-179)	31.3 (30-33)	23.1 (20-31)	86.0 (61.0-114.0)	36.3 (33.6-38.4)	28.0 (25.8-30.0)
Subadults, 1 (1 male)	235.0	120.0	30.0	19.0	31.0		
<i>Oxymycterus roberti</i>							
Adult males, 20	235.4 (210-253)	92.5 (70-105)	28.3 (26-30)	17.6 (13-20)	77.7 (54.0-100.0)	35.1 (32.7-36.9)	27.7 (25.0-29.7)
Adult females, 17	221.9 (196-247)	87.8 (75-110)	27.8 (26-30)	17.3 (15-20)	71.8 (52.0-95.0)	34.3 (31.9-35.8)	27.0 (24.5-28.3)

Table 4.—Continued.

	NL	IB	MB	ZB	PL	DL	MTRL
<i>Oryzomys chacoensis</i>							
Adult males, 1	9.3	3.7	10.4	12.5	9.8	5.8	3.7
<i>Oryzomys concolor</i>							
Adult males, 4	11.1 (10.4–11.6)	6.1 (5.8–6.2)	13.1 (12.5–13.6)	17.7 (16.8–18.3)	14.3 (13.5–14.7)	8.2 (7.8–8.6)	5.4 (5.2–5.5)
Adult females, 3	10.9 (10.7–11.2)	5.7 (5.6–5.8)	12.7 (12.6–12.8)	17.1 (16.8–17.5)	13.4 (13.0–13.7)	7.8 (7.6–8.0)	5.3 (5.1–5.6)
Subadults, 2 (1 male, 1 female)	10.1 (9.2–10.9)	5.5 (5.4–5.5)	12.1 (11.8–12.4)	14.9 (14.5–15.2)	12.0 (11.8–12.2)	6.9 (6.6–7.1)	5.4 (5.2–5.6)
<i>Oryzomys fornesi</i>							
Adult males, 5	8.7 (8.3–9.1)	3.6	10.2 (10.0–10.3)	12.3 (11.9–12.7)	9.5 (9.3–9.9)	5.5 (5.3–6.0)	3.4 (3.2–3.7)
Adult females, 10	8.8 (8.0–9.3)	3.4 (2.8–3.6)	9.9 (9.4–10.3)	12.1 (11.2–12.7)	9.1 (8.5–9.7)	5.4 (4.9–6.1)	3.4 (3.2–3.5)
Subadults, 1 (1 female)	7.8	2.7	9.3	11.1	8.3	4.5	3.4
<i>Oryzomys nigripes</i>							
Adult males, 8	9.3 (8.8–10.0)	3.6 (3.4–3.7)	10.5 (10.2–10.7)	12.7 (12.2–13.2)	9.7 (9.4–10.3)	5.9 (5.5–6.5)	3.7 (3.5–4.0)
Adult females, 8	9.3 (8.7–10.3)	3.7 (3.4–4.0)	10.4 (9.8–11.0)	12.9 (12.1–14.4)	9.8 (9.2–10.8)	5.9 (5.3–6.5)	3.7 (3.6–4.0)
Subadults, 4 (2 males, 2 females)	7.9 (6.6–9.6)	3.5 (3.2–3.7)	10.1 (10.0–10.3)	11.6 (11.0–12.3)	8.9 (8.2–9.4)	5.1 (4.5–5.5)	3.6 (3.5–3.7)
<i>Oryzomys subflavus</i>							
Adult males, 5	13.9 (11.5–16.9)	5.7 (5.5–5.9)	14.2 (13.4–15.2)	18.6 (16.7–20.4)	15.1 (14.3–16.3)	9.1 (8.4–10.2)	5.5 (5.3–5.8)
Adult females, 7	13.9 (13.2–15.0)	5.9 (5.4–6.6)	13.9 (13.1–14.3)	18.9 (17.2–20.5)	15.2 (13.8–16.5)	9.2 (8.4–10.0)	5.3 (5.2–5.5)
Subadults, 1 (1 male)							
<i>Oxymycterus roberti</i>							
Adult males, 20	13.1 (12.0–14.1)	5.8 (5.3–6.4)	13.5 (12.4–14.1)	15.2 (13.6–15.9)	13.5 (12.4–14.5)	8.4 (7.6–9.0)	5.3 (4.7–5.8)
Adult females, 17	12.6 (11.0–14.4)	5.9 (5.5–6.2)	13.5 (12.6–14.0)	14.9 (14.1–16.0)	13.3 (12.2–14.3)	8.3 (7.5–9.2)	5.2 (4.9–5.5)

Table 4.—Continued.

	Tol.	TL	HL	E	WT	GSL	BL
Subadults, 7 (4 males, 3 females)	184.3 (135-209)	74.5 (56-85)	26.8 (24-29)	14.7 (8-17)	39.1 (21.3-50.5)	30.8 (26.6-33.0)	23.7 (20.3-25.0)
<i>Rhipidomys mastacalis</i>							
Adult males, 9	281.3 (264-309)	144.3 (117-152)	28.6 (26-30)	19.8 (17-21)	73.2 (52.5-96.0)	34.2 (31.5-36.9)	26.8 (24.2-29.4)
Adult females, 10	276.8 (262-322)	147.6 (132-191)	27.1 (25-29)	19.4 (17-21)	65.5 (57.0-80.9)	33.5 (32.2-35.8)	26.2 (25.1-28.2)
Subadults, 7 (4 males, 3 females)	228.3 (203-255)	123.7 (110-136)	25.7 (22-29)	17.7 (15-20)	32.6 (21.0-44.0)	29.3 (27.5-30.7)	22.4 (20.9-23.6)
<i>Rattus rattus</i>							
Adult males, 2	392.0 (308-404)	183.0 (173-193)	43.5 (42-45)	20.5 (20-21)	260.5 (245.0-276.0)		
<i>Cavia apereza</i>							
Adult males, 2	235.0	0	48.5 (48-49)	24.0 (23-25)	435.0 (400.0-470.0)	62.4 (58.2-66.5)	46.1 (46.0-46.2)
Adult females, 2	213.5 (195-232)	0	44.0 (43-45)	22.5 (22-23)	430.0 (370.0-490.0)	58.4 (57.3-59.5)	46.2 (45.2-47.1)
<i>Chomys laticeps</i>							
Adult males, 1	278.0	76.0	36.0	14.0			37.4
Adult females, 1	278.0	70.0	38.0	18.0	201.0	47.3	36.8
<i>Proechimys</i> sp.							
Adult males, 1	427.0	169.0	53.0	29.0	427.0		
Adult females, 1	350.3	142.7	47.3	23.2	243.0		
Subadults, 1 (1 male)	225.0	90.0	37.0	20.0	76.0		
<i>Thrichomys apereoides</i>							
Adult males, 3	399.3 (359-429)	174.3 (159-187)	44.3 (42-46)	23.3 (23-24)	335.0 (280.0-375.0)	54.2 (52.1-57.2)	40.0 (37.9-42.4)
Adult females, 3	363.0 (307-404)	150.0 (140-170)	42.0 (40-45)	22.0 (21-23)	211.0 (175.0-239.0)	49.2 (47.5-51.1)	35.9 (34.2-37.9)

Table 4.—Continued.

	NL	IB	MB	ZB	PL	DL	MTRL
Subadults, 7 (4 males, 3 females)	10.9 (8.6–11.6)	5.7 (5.6–6.0)	12.8 (11.4–13.9)	13.8 (13.3–14.2)	11.6 (9.9–12.5)	7.1 (5.7–7.8)	5.1 (4.4–5.5)
<i>Rhipidomys mastacalis</i>							
Adult males, 9	11.6 (10.5–12.7)	5.2 (4.7–5.8)	13.4 (12.5–14.0)	17.9 (16.6–19.0)	13.6 (12.5–15.0)	8.6 (7.7–9.7)	5.4 (5.1–5.6)
Adult females, 10	11.3 (10.5–11.9)	5.3 (4.8–5.6)	13.1 (12.5–13.7)	17.8 (17.2–19.1)	13.5 (12.9–14.4)	8.3 (8.0–8.7)	5.3 (5.1–5.6)
Subadults, 7 (4 males, 3 females)	9.9 (9.0–11.4)	5.2 (5.0–5.3)	12.5 (12.1–12.8)	15.5 (14.6–16.2)	12.1 (11.3–12.6)	7.2 (6.8–7.5)	5.3 (5.0–5.4)
<i>Rattus rattus</i>							
Adult males, 2							
<i>Cavia aperea</i>							
Adult males, 2	17.6 (17.4–17.7)	11.9 (11.8–12.0)	27.2 (25.6–28.7)	32.9 (32.3–33.4)	25.5	15.5 (14.9–16.1)	14.5 (13.9–15.0)
Adult females, 2	17.7 (16.8–18.5)	11.7	26.5	32.8 (32.4–33.1)	25.3 (24.2–26.4)	14.4	14.6 (14.4–14.7)
<i>Chomys laticeps</i>							
Adult males, 1	13.6	11.3	22.1	25.2	17.1	10.2	9.4
Adult females, 1		11.2	23.4	26.7	17.4	10.7	9.2
<i>Proechimys</i> sp.							
Adult males, 1							
Adult females, 1							
Subadults, 1 (1 male)							
<i>Thrichomys apereoides</i>							
Adult males, 3	18.4 (17.9–19.4)	13.0 (12.0–14.0)	24.1 (23.5–24.5)	28.0 (26.9–29.0)	19.0 (17.3–20.6)	10.9 (9.8–11.9)	9.0 (8.8–9.1)
Adult females, 3	15.8 (15.2–17.0)	11.6 (11.1–12.3)	23.0 (22.1–24.0)	25.5 (24.9–25.9)	16.9 (15.7–18.0)	9.9 (9.2–10.6)	8.8 (8.7–8.8)

Reproduction.—Both adult males collected in May had inguinal testes (mean length = 7.5 mm). An adult male collected in June had scrotal testes (length = 11 mm), and a second had inguinal testes (length = 9 mm). Abdominal testes (length = 5 mm) were present in a juvenile male collected in November. Adult females were collected in February ($n = 1$), May ($n = 1$) and August ($n = 1$); a juvenile was captured in October. Reproductive data are available for all females except the specimen collected in January. All had closed vaginas. The female collected in August was pregnant (three embryos, CRL = 5 mm). The sex of one adult specimen was not determined.

Molt.—Two individuals were molting in May, and one each in February, June, August and November.

Ectoparasites.—The following ectoparasites were collected from this species: Siphonaptera (*Polygenis* sp.); Parasitiformes (*Amblyomma* sp., *Gigantolaelaps guimaraesi* Lizaso, *G. oudemansi* Fonseca, *Laelaps acuminata* Furman, *L. pilifer* Tipton); Acariformes (undetermined species).

Habitat.—All specimens from the Federal District were collected in gallery forests; all but two were collected in arboreal traps. The specimen collected from Tres Marias was collected in a terrestrial Sherman trap set in campo sujo. Nitikman and Mares (1987) found that 29% of the captures of this species occurred on the ground and that the species preferred the fern thicket microhabitat within the gallery forest.

Remarks.—This species has also been captured in Mato Grosso (Alho et al., 1987; Lacher et al., 1986; Pine et al., 1970; Schaller, 1983).

Oryzomys fornesi Massoia

1973. *Oryzomys fornesi* Massoia, Rev. Invest. Agro. INTA, ser. 1, 10(1):21–37.

Specimens examined (16).—FEDERAL DISTRICT: 20 km S Brasília, 7 (OMNH), 8 (UNB), 1 (IBGE).

Measurements.—See Table 4.

Reproduction.—Adult males were collected in March ($n = 1$; length = 6 mm) and August ($n = 4$; mean length = 7 mm). Pregnant females were collected in March ($n = 2$), September ($n = 1$) and October ($n = 2$); the number of embryos varied from one to four. Crown-rump lengths of individual females averaged 3 and 18, 4, 3 and 4 mm for the months of March, September and October, respectively. Nonpregnant females were collected in March ($n = 1$), August ($n = 1$), September ($n = 1$) and October ($n = 2$). A subadult female was captured in early July.

Molt.—Only two adult specimens were found molting; one collected in March was molting posterodorsally and one collected in October was molting on the head. A juvenile collected in July was molting both dorsally and anteroventrally.

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura travassosi* (Werneck)); Siphonaptera (*Polygenis* sp.); Parasitiformes (*Ixodes* sp., *Gigantolaelaps peruviana* (Ewing), *Laelaps castroi* Fonseca, *L. paulistanensis* Fonseca, *Mysolaelaps* near *parvispinosus* Fonseca, *Androlaelaps fahrenheitzi* (Berlese)); Acariformes (undetermined species).

Habitat.—All specimens were collected in Sherman live traps set on the ground in brejos, campo sujo, cerradão or African grass bordering the gallery forest.

Remarks.—The specimen in the IBGE collection is labeled *O. nigripes*. Alho (1981a), Paula (1983), Mello and Moojen (1979), Mello (1977, 1980) and Borchert

and Hansen (1983) listed this species as *O. eliurus*; Dietz (1983) listed all specimens captured as *O. fornesi*. Those individuals captured in cerrado, cerradão and campo habitats are probably *O. fornesi*. Alho et al. (1987) and Lacher et al. (1986) captured this species numerous times in Mato Grosso. The population dynamics of this species in Goiás were studied by Mello (1980).

Oryzomys nigripes (Olfers)

1818. *Mus nigripes* Olfers, in Eschwege, Neue Bibl. Reisenb., 15:209.

Specimens examined (20).—FEDERAL DISTRICT: 20 km S Brasília, 6 (OMNH), 7 (UNB); 25 km S Brasília, 3 (OMNH), 3 (UNB). MINAS GERAIS: Tres Marias, Ilhas das Marias, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—Two adult males were captured in February; one had inguinal testes (no measurement) and the second had scrotal testes (length = 8 mm). A male with scrotal testes was collected in March (length = 7 mm). A male with inguinal testes (length = 7 mm) and a male with scrotal testes (length = 6 mm) were captured in April. An adult male collected in July had scrotal testes (length = 8 mm); one adult collected in October had inguinal testes (length = 7 mm) and one had scrotal testes (length = 6 mm). Two subadult males were collected in July and October (length = 3 and 6 mm, respectively). Pregnant females were collected in April ($n = 1$), October ($n = 1$) and November ($n = 2$). The number of embryos varied from three to four. A second female collected in October appeared to be lactating. Non-breeding adult females were captured in June ($n = 1$) and July ($n = 2$) and non-breeding subadult females ($n = 2$) were captured in July.

Molt.—Adult animals were molting in February ($n = 1$), March ($n = 1$), April ($n = 1$), July ($n = 2$), October ($n = 3$), and November ($n = 2$). Non-molting adults were also found in February ($n = 1$), April ($n = 2$) and October ($n = 1$). Subadults and juveniles were found to be molting in July ($n = 1$) and October ($n = 1$).

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Parasitiformes (*Gigantolaelaps wolffsohni* (Oudemansi), *Laelaps paulistanensis* Fonseca, *Laelaps* sp., *Mysolaelaps* near *parvispinosus* Fonseca, *Androlaelaps fahrenheitzi* (Berlese)); Acariformes (undetermined species).

Habitat.—All specimens were captured in Sherman traps set on the ground (12 captures) or in trees (7 captures) in gallery forest habitats.

Remarks.—Alho (1981a), Paula (1983), Mello (1977, 1980), and Mello and Moojen (1979) listed this species as *O. eliurus*. Dietz (1983) listed this species as *O. fornesi*. Those individuals captured in the gallery forest are probably *O. nigripes*. The population dynamics of this species was studied by Mello (1980).

Oryzomys subflavus (Wagner)

1842. *Hesperomys subflavus* Wagner, Arch. Naturgesch., 8(1):362.

Specimens examined (13).—FEDERAL DISTRICT: 15 km S, 3 km E Brasília, 1 (OMNH), 1 (IBGE); 20 km S Brasília, 5 (OMNH), 2 (UNB); 40 km N Brasília, 1 (UNB). GOIÁS: 12 km NE Cristalina, 1 (UNB). MINAS GERAIS: Tres Marias, Ilha das Marias, 2 (UNB).

Measurements.—See Table 4.

Reproduction.—Males collected in January ($n = 1$; length = 11 mm), March ($n = 1$; length = 21 mm), May ($n = 1$; no measurement), October ($n = 1$; length = 10 mm), and November ($n = 1$; length = 9 mm) had scrotal testes. A subadult

collected in October had testes 4 mm long. Pregnant females were collected in February ($n = 1$), May ($n = 1$) and October ($n = 2$). The number of embryos varied from two to five and CRL ranged from 15 to 35 mm. Mammary glands were large in females collected in February ($n = 1$), March ($n = 1$) and October ($n = 1$). Females collected in March ($n = 2$) and April ($n = 1$) were not pregnant.

Molt.—Animals were molting in February ($n = 1$), March ($n = 3$), October ($n = 3$) and November ($n = 1$).

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Siphonaptera; Parasitiformes (*Gigantolaelaps vitzthumi*, *Laelaps* n. sp.); Acariformes (undetermined species); Trombiculidae.

Habitat.—This species was always captured on the ground in cerrado, campo sujo, brejo or cerradão habitats.

Remarks.—On the IBGE Reserve, this species was trapped once in a terrestrial trap but, when released, climbed up into a tree (Fonseca and Redford, 1984). Alho (1981a) and Paula (1983) found this species to be most common in campo habitats. In the Federal District and Goiás, Mello and Moojen (1979) found this species in gallery forest, cerrado, and campo. Mello (1980) also captured this species in Goiás. Dietz (1983) captured several individuals during an ecological study in Minas Gerais. Valle et al. (1982) reported on the population dynamics of this species in Minas Gerais. In Mato Grosso do Sul, Alho et al. (1987) and Lacher et al. (1986) captured this species 37 times.

Oxymycterus roberti Thomas

1901. *Oxymycterus roberti* Thomas, Ann. Mag. Nat. Hist., ser. 7(8):530.

Specimens examined (45).—FEDERAL DISTRICT: 20 km S Brasília, 22 (OMNH), 22 (UNB), 1 (IBGE).

Measurements.—See Table 4.

Reproduction.—Of two adult males collected in January, one had scrotal testes (length = 13.5 mm) and one had inguinal testes (length = 11 mm). Inguinal testes (length = 6, 8 mm) were present in two males in March. A single male captured in April had scrotal testes (length = 11 mm). Of seven males collected in May, one had scrotal (length = 19 mm) and five had inguinal testes (length = 4, 5, 9, 10, 11 mm). Testes length varied from 9 to 11 mm in five of seven adult males collected in August. Two males collected in September had testes lengths of 12 and 14 mm. Subadult males were collected in April ($n = 2$), May ($n = 1$) and August ($n = 1$). Females collected in January ($n = 4$), March ($n = 4$) or April ($n = 1$) were not pregnant, although one of the females captured in March was lactating and one had well-developed mammae. A female collected in May was pregnant (one embryo). Of three adult females collected in August, one was pregnant (two embryos, mean CRL = 2 mm) and had well-developed mammae. Two adult females collected in September were neither pregnant nor lactating. The adult female captured in October was pregnant (four embryos, mean CRL = 29 mm) as was the female collected in November (three embryos, mean CRL = 27 mm). Subadults were captured in July ($n = 1$) and August ($n = 2$).

Molt.—Animals were found molting in January ($n = 5$), March ($n = 4$), April ($n = 1$), May ($n = 6$), August ($n = 3$), September ($n = 1$), October ($n = 1$) and November ($n = 1$). Animals not molting were collected in March ($n = 2$), August ($n = 4$) and September ($n = 2$).

Ectoparasites.—The following ectoparasites were collected from *O. roberti*: Si-

phonaptera (*Polygenis* sp.); Anoplura (*Hoplopleura fonsecai* Werneck); Coleoptera (*Amblyopinodes* sp.); Parasitiformes (*Ixodes* sp., *Androlaelaps fahrenheiti* (Berlese), *A. pachyptilae* (Zumpt and Till), *A. foxi* Fonseca); Acariformes (*Oryzomyia oxymycterus* Fain).

Habitat.—This terrestrial species was trapped almost exclusively in brejos. Several specimens were trapped in campo limpo (wet and dry) and campo sujo.

Remarks.—Fonseca and Redford (1984) found this species to be the most common rodent in the brejos of the IBGE Reserve. Although it was most common in brejos, it was also collected in the cerrado bordering the brejos. Nitikman and Mares (1987) also found *O. roberti* to be a brejo species. Lacher et al. (in press), however, found *O. roberti* in a variety of savanna habitats, although it preferred campo limpo. Thus the species is more of a generalist in its habitat selection than our data suggest. It does seem to prefer either brejos or campo limpo, however, among the many habitats of the cerrado. Paula (1983) found this species restricted to campo, particularly wet campo. Borchert and Hansen (1983) studied this species' microhabitat preferences, food habits, activity patterns, and population changes in response to fire and flood. Dietz (1983) captured individuals in both forest and grassland habitat in Minas Gerais.

Rhipidomys mastacalis (Lund)

1840. *Mus mastacalis* Lund, Kongl. Dansk. Vid. Selsk. Naturv. Math. Afhandl., p. 24.

Specimens examined (26).—FEDERAL DISTRICT: 20 km S Brasília, 7 (OMNH), 5 (UNB); 25 km S Brasília, 6 (OMNH), 7 (UNB); 20 km SW Brasília, 1 (IBGE).

Measurements.—See Table 4.

Reproduction.—Adult males with scrotal testes were collected in April ($n = 1$; length = 16 mm), May ($n = 1$; length = 16 mm), July ($n = 1$; length = 16 mm), October ($n = 1$; length = 17 mm) and November ($n = 1$; length = 16 mm). Adult males with smaller scrotal testes were captured in March ($n = 1$; length = 10 mm) and May ($n = 1$; length = 11.5 mm). Inguinal testes were found in adult males collected in April ($n = 1$; length = 9 mm) and December ($n = 1$; no measurement). Subadult males were collected in January ($n = 1$; no measurement), March (testes abdominal, $n = 1$; length = 5 mm) and October ($n = 2$; length = 6, 11 mm). Pregnant females were captured in February ($n = 1$), July ($n = 1$), August ($n = 2$), September ($n = 1$), October ($n = 1$) and November ($n = 1$). Six females had three embryos each and one had four embryos. The pregnant females collected in September, October and November had small embryos (CRL = 4, 3, 3 mm, respectively). Embryos from females captured in February and August were moderately developed (CRL = 14, 14 and 17 mm, respectively), and embryos from females collected in July were well developed (CRL = 42 mm). An adult female collected in January and two collected in February were not pregnant, although the latter two showed evidence of lactation. Subadult females were collected in April ($n = 1$), May ($n = 1$) and July ($n = 1$).

Molt.—Individuals were molting in January ($n = 1$), March ($n = 1$), April ($n = 3$), July ($n = 1$), August ($n = 1$), November ($n = 1$) and December ($n = 1$). Non-molting animals were captured in January ($n = 1$), February ($n = 3$), March ($n = 1$), May ($n = 3$), July ($n = 1$), August ($n = 1$), September ($n = 1$), October ($n = 4$) and November ($n = 1$); no data are available for a specimen collected in July.

Ectoparasites.—The following ectoparasites were collected from this species:

Anoplura (*Hoplopleura angulata* Ferris); Parasitiformes (*Ixodes* sp., *Laelaps paulistanensis* Fonseca, *L. thori* Fonseca, *Mysolaelaps heteronychus* Fonseca, *Ornithonyssus bacoti* (Hirst)); Acariformes (undetermined species).

Habitat.—This species was found only in the gallery forest.

Remarks.—This arboreal species (22 of 26 specimens were captured in traps set in the subcanopy) was captured exclusively within the gallery forest. It is nocturnal. Paula (1983), Alho (1981a), Mello and Moojen (1979), and Dietz (1983) also found this species restricted to the gallery forest of the Federal District, Goiás, and Minas Gerais. Fonseca and Redford (1984) found this species extremely common in the swampy parts of the gallery forest at IBGE. Pine et al. (1970) captured *Rhipidomys* in Mato Grosso.

Subfamily Murinae

Mus musculus Linnaeus

1766. *Mus musculus* Linnaeus, Syst. Nat., 12th ed., 1:138.

Remarks.—The house mouse was common in houses and barns; it was never captured in natural habitats. Mello (1980) reported two captures of this species during a study near Formosa, Goiás.

Rattus rattus (Linnaeus)

1758. (*Mus*) *rattus* Linnaeus, Syst. Nat., 10th ed., 1:61.

Specimens examined (2).—FEDERAL DISTRICT: 19 km S Brasília, 2 (OMNH).

Measurements.—See Table 4.

Reproduction.—Both specimens, collected in late July, had large, scrotal testes.

Molt.—No data on molt are available.

Habitat.—This peridomestic species is common in natural habitats. Both specimens were captured in Tomahawk traps near barns. One rat was captured and released within a gallery forest at IBGE. However, the capture location was less than 100 m from an orchard.

Remarks.—This species was captured during a study near Formosa, Goiás (Mello, 1980) and in Minas Gerais (Valle et al., 1982).

Family Erethizontidae

Coendou prehensilis (Linnaeus)

1758. *Hystrix prehensilis* Linnaeus, Syst. Nat., 10th ed., 1:57.

Remarks.—This species was observed foraging in the canopy of a gallery forest at FAL at 0100 hr on 16 June 1984. Schaller (1983) reported the species in the pantanal.

Family Caviidae

Subfamily Caviinae

Cavia aperea Erxleben

1777. *Cavia aperea* Erxleben, Syst. Regn. Anim., 1:348.

Specimens examined (4).—FEDERAL DISTRICT: 20 km S Brasília, 2 (OMNH), 2 (UNB).

Measurements.—See Table 4.

Reproduction.—A male collected in March had small scrotal testes; a male captured in August had large scrotal testes (length = 25 mm). Both females captured in January were pregnant with a single embryo (CRL = 22, 17 mm).

Molt.—No molting was observed.

Ectoparasites.—The following ectoparasites were collected from *Cavia aperea*: Siphonaptera (*Polygenis* sp.); Anoplura (*Hoplopleura imitans* (Werneck)); Mallophaga (*Trimenopon hispidum* (Burmeister), *Gliricola lindolphoi* Werneck, *Gyropus ovalis* Burmeister); Parasitiformes (*Tur amazonicus* Fonseca, *Neoparalaelaps bispinosus* (Fonseca), *Ornithonyssus* prob. *bacoti* (Hirst)); Acariformes (*Chirodiscoides caviae* Hirst).

Habitat.—This species was captured in wet campos and brejos, but it is also common in disturbed areas and agricultural lands. All four specimens were collected in African grass surrounding a pond at FAL. Three were trapped using Tomahawk traps and one was stolen from a fox.

Remarks.—Paula (1983) captured this species only in gallery forest.

Family Hydrochaeridae

Hydrochaeris hydrochaeris (Linnaeus)

1766. *Sus hydrochaeris* Linnaeus, Syst. Nat., 12th ed., 1:103.

Remarks.—Tracks of these large rodents were observed at FAL and IBGE along transitions between gallery forest and brejos. A carcass was found in the gallery forest at IBGE by Fonseca and Redford (1984). They are abundant throughout the pantanal. Information on this species in Brazil is given in Alho (1986). This species was reported by Mello and Moojen (1979) to occur in gallery forest, campo and swamps in the Federal District, Goiás, and Mato Grosso (see also Schaller, 1983).

Family Dasyproctidae

Dasyprocta sp.

Specimens examined (2).—FEDERAL DISTRICT: 25 km S Brasília, 1. MATO GROSSO: 115 km S Poconé, 1.

Measurements.—See Table 4.

Reproduction.—Both females were non-reproductive.

Molt.—Neither individual showed signs of molt.

Habitat.—Both specimens were collected in gallery forest using Tomahawk traps.

Ectoparasites.—The following ectoparasites were collected from this species: Siphonaptera (*Polygenis* sp.).

Remarks.—Although no specimens were collected, Fonseca and Redford (1984) reported that this species is frequently seen in orchards on the IBGE reserve. We have been unable to identify our specimens as to species. Mello and Moojen (1979) reported capturing *D. azarae* in gallery forest in Mato Grosso and at several sites in Goiás. *Dasyprocta* sp. were observed by MAM south of Poconé, Mato Grosso. Alho et al. (1987) and Lacher et al. (1986) observed *D. punctata* diurnally in Mato Grosso do Sul.

Family Echimyidae
 Subfamily Echimyinae
Clyomys laticeps (Thomas)

1909. *Echymys laticeps* Thomas, Ann. Mag. Nat. Hist., ser. 8(4):240.

Specimens examined (2).—MATO GROSSO DO SUL: Fazenda Nhumirim, 150 km SE Corumbá, 2 (OMNH).

Measurements.—See Table 4.

Habitat.—These specimens were taken at the interface of semideciduous tropical forest and savanna, and in isolated forest patches on hummocks.

Remarks.—No data are available for these specimens on reproduction, molt or ectoparasites. Alho et al. (1987) and Lacher et al. (1986) reported 20 captures of this species in Mato Grosso do Sul.

Proechimys sp.

Specimens examined (5).—FEDERAL DISTRICT: 20 km S Brasília, 3; 21 km S Brasília, 1; 20 km SW Brasília, 1.

Measurements.—See Table 4.

Reproduction.—The juvenile male captured in April had abdominal testes (length = 7 mm). The adult male, captured in September, had inguinal testes (length = 30 mm). Both females captured in February were pregnant with two embryos (mean CRL of each pair = 29, 41 mm). Both females showed little mammary development. A third female, captured in August, was also pregnant with two embryos (mean CRL = 14 mm) and was lactating.

Molt.—An adult female collected in February was molting on the head.

Ectoparasites.—The following ectoparasites were collected from this species: Anoplura (*Hoplopleura* sp.); Mallophaga (*Gliricola* near *pintoii*); Siphonaptera (*Polygenis* sp.); Parasitiformes (*Tur* sp.); Acariformes (undetermined species).

Habitat.—All specimens were trapped in gallery forest in either Sherman traps (4 captures) or Tomahawk traps (1 capture). One individual was found in a Sherman trap which was placed on a log approximately 0.5 m above the ground.

Remarks.—Mares et al. (1986), Paula (1983) and Fonseca and Redford (1984) reported that this species is limited to the gallery forest. Fonseca and Redford (1984) identified this species as *P. longicaudatus*, but we have been unable to verify the specific identification of our specimens. The species is common in central Brazil. Mello and Moojen (1979) captured individuals in gallery forest in the Federal District and in Goiás. Alho (1981a) found that *P. roberti* is limited to the gallery forest at FAL.

Thrichomys apereoides Lund

1841. *Thrichomys apereoides* Lund, Kongl. Danske. Vid. Selsk. Naturv. Math. Aftandl., 8:98, 242.

Specimens examined (6).—GOIÁS: 7 km SE Cristalina, 2 (OMNH), 3 (UNB). MATO GROSSO DO SUL: Fazenda Nhumirim, 150 km SE Corumbá, 1 (OMNH).

Measurements.—See Table 4.

Reproduction.—Of five adults captured in May, three males had inguinal testes (length = 17, 19, 22 mm), two females were non-reproductive. No information is available for the female collected in the Mato Grosso do Sul.

Molt.—None of the specimens were molting.

Ectoparasites.—The following ectoparasites were collected from this species:

Mallophaga (*Gyropus* n. sp.); Parasitiformes (*Tur* sp.); Acariformes (undetermined species).

Habitat. — Individuals were captured near Cristalina, Goiás, 90 km S of Brasília, in a habitat known as “campo rupestre,” but *Thrichomys apereoides* probably occurs in similar rocky outcrop areas near Brasília. All specimens were captured on the ground at night.

Remarks. — Fonseca and Redford (1984) reported collecting two individuals on rocky outcrops on the IBGE reserve. Streilein (1982*a*, 1982*b*, 1982*c*, 1982*d*, 1982*e*) offers a great deal of information on the behavior and ecology of *Thrichomys* in the Brazilian caatinga. He found (Streilein, 1982*c*) that at least some *T. apereoides* were in breeding condition throughout the year, although few females were reproductively active in January or February. Mares et al. (1982) found that *Thrichomys* in the caatinga did not exhibit a seasonal molt; rather it appeared to molt throughout the year. This species has been captured in gallery forest, cerrado and cerrado in the Federal District, Mato Grosso and Goiás (Mello and Moojen, 1979). Mello (1977) found this species in campo rupestre near Formosa, Goiás. Alho et al. (1987) and Lacher et al. (1986) reported one nocturnal observation and 19 captures in Mato Grosso do Sul.

Order Carnivora
Family Canidae
Subfamily Caninae

***Cerdocyon thous* (Linnaeus)**

1766. *Canis thous* Linnaeus, Syst. Nat., 12th ed., 1:60.

Remarks. — We have observed and/or photographed at least two different species of foxes in the Federal District and in the pantanal. In the pantanal, these may represent *Cerdocyon thous* and *Dusicyon vetulus*, with the possibility of *D. gymnocercus* also occurring in the area. In the Federal District, we would expect *D. gymnocercus* and *C. thous* to occur. However, we are unable to verify species occurrence due to the lack of specimens. Sight records are not always reliable when dealing with foxes due to their variation in color. We therefore note only that at least two, and possibly three, fox species occur in the cerrado. Schaller (1983), Pine et al. (1970), Alho et al. (1987) and Lacher et al. (1986) reported *D. thous* in Mato Grosso.

***Chrysocyon brachyurus* (Illiger)**

1815. *Canis brachyurus* Illiger, Abhandl. Preuss. Akad. Wiss., 1811(1815):109.

Remarks. — This species was observed in cerrado habitat at IBGE at 2315 hr on 5 February 1984. This large canid is secretive, but is not considered rare. Fonseca and Redford (1984) reported that this species has been observed in the cerrado of the IBGE reserve and that feces have been found in all habitat types. Maned wolves were observed on the grid at FAL. Schaller (1983) observed a single individual in the pantanal.

Family Procyonidae
Subfamily Procyoninae

***Nasua nasua* (Linnaeus)**

1766. *Viverra nasua* Linnaeus, Syst. Nat., 12th ed., 1:64.

Remarks.—In the Federal District, coatis were observed at IBGE and a location 40 km N of Brasília. This species was observed and photographed by MAM near Corumbá, Mato Grosso do Sul. Alho et al. (1987) and Lacher et al. (1986) observed coatis 262 times during diurnal censuses in Mato Grosso do Sul. Schaller (1983) found this species to be abundant in the pantanal.

Family Mustelidae
Subfamily Mustelinae

Eira barbara (Linnaeus)

1758. *Mustela barbara* Linnaeus, Syst. Nat., 10th ed., 1:46.

Remarks.—Two individuals were seen in cerrado habitat at FAL. This species has been observed on the IBGE reserve in cultivated areas with fruit trees and in the gallery forest (Fonseca and Redford, 1984). Alho et al. (1987) and Lacher et al. (1986) observed this species three times during diurnal censuses in Mato Grosso do Sul. Schaller (1983) also observed this species in the pantanal.

Family Felidae
Subfamily Felinae

Leo onca (Linnaeus)

1758. *Felis onca* Linnaeus, Syst. Nat., 10th ed., 1:42.

Remarks.—Jaguar tracks were observed in 1983 south of Poconé in Mato Grosso. Schaller (1983) found the species to be common in the pantanal.

Order Artiodactyla
Family Cervidae
Subfamily Odocoileinae

Blastocerus dichotomus (Illiger)

1815. *Cervus dichotomus* Illiger, Abhandl. Preuss. Akad. Wiss., 1811(1815):117.

Remarks.—MAM observed this species in 1983 in the northern pantanal near Poconé. Alho et al. (1987) and Lacher et al. (1986) observed this deer once during a diurnal census in Mato Grosso do Sul. Schaller (1983) found the species to be fairly common in the pantanal.

Mazama americana (Erxleben)

1777. *Moschus americanus* Erxleben, Syst. Regn. Anim., 1:324.

Remarks.—This deer was observed on the IBGE reserve. Fonseca and Redford (1984) reported this deer from the cerrado and gallery forests of the IBGE reserve. Alho et al. (1987) and Lacher et al. (1986) censused this deer both diurnally and nocturnally in Mato Grosso do Sul.

Ozotoceros bezoarticus (Linnaeus)

1758. *Cervus bezoarticus* Linnaeus, Syst. Nat., 10th ed., 1:67.

Remarks.—The pampas deer was observed on the grid at FAL and at IBGE. Several individuals were observed by MAM in the southern pantanal between 100–150 km SE Corumbá. Fonseca and Redford (1984) reported observing this deer singly and in pairs in the campo of the IBGE reserve. This deer was observed

almost exclusively during diurnal censuses in Mato Grosso do Sul (Alho et al., 1987; Lacher et al., 1986). Schaller (1983) reported the species as rare in the pantanal.

DISCUSSION

The cerrado, which extends over an area of almost 2 million km², is approximately the size of Mexico, yet it has had few collection-based studies conducted anywhere in the region. Indeed, most of what has been reported is based on research carried out near the Brazilian capital of Brasília, and much of this has been ecologically oriented. In the Neotropics, probably only Amazonia is more poorly known. Pine (1982:28) noted, "Brazil is . . . a vast country. Some portions . . . such as certain areas in the southeast, are relatively well-studied while the great majority, especially the central portions and more especially those areas distant from easily navigable rivers, are very poorly known." We limited our coverage of cerrado mammals to those species for which we had first-hand knowledge or, in the case of the Federal District, that were based on actual museum specimens or sightings of easily identifiable species. This was done in order to begin to provide the foundational data for distribution and habitat selection that are a necessary first step if we are to clarify mammalian distribution patterns in the cerrado.

The cerrado is interesting biogeographically in that it links many diverse communities. It offers a bridge between the semi-arid caatinga of northeastern Brazil and the semi-arid chacoan thorn forest of southern South America (Mares et al., 1981, 1985). The gallery forests of the cerrado support Amazonian elements and provide a habitat connection between the lowland Amazonian rain forest and the unusual rain forest of coastal southeastern Brazil and northeastern Argentina (Mares et al., 1986; Redford and Fonseca, 1986). Recent research has focused on the importance of the cerrado to Brazil's economic welfare, since its grasslands provide extensive grazing lands and a broad region for agricultural development (e.g., Ferri, 1971, 1976; Goodland and Ferri, 1979). Only within the last decade has attention been given to conservation of the fauna of the cerrado, however, even though a national park was established in the Federal District in 1961 (IUCN, 1982). One reason that conservation of the cerrado fauna has not been a high priority could be related to the fact that basic data on species composition, systematics, microhabitat selection, population biology, and other parameters is largely unavailable for this area (e.g., Mares, in press; Mares and Braun, 1986). Without a solid understanding of faunal richness and distribution patterns of species there is little to impel governmental or private efforts to conserve biotic resources in a particular region (Mares, 1986).

Clearly, the cerrado fauna is both rich and diverse. The Federal District has an area of 5814 km² (Anon., 1982), about twice the size of Rhode Island, yet in this preliminary survey we have listed 86 species of mammals in 9 orders and 23 families. By comparison, Kentucky, with 104,623 km², supports 63 mammal species, whereas Indiana, with 94,677 km², supports only 54 species (Barbour and Davis, 1974; Mumford and Whitaker, 1982). Our list for the Federal District is far from complete, however. We sampled only sporadically for bats, for example, and expect many more bat species to be recorded. We also expect that our collections of small mammals are incomplete. While we have probably recorded most of the common species, we may well have missed numerous rare ones. More important, our intensive trapping was limited to an area of only a few square

kilometers. Other unpublished research by Mares suggests that the cerrado is a diverse phylogeographic province with shifting patterns of species occurrence. Thus, it is too soon to generalize about biogeographic patterns throughout this huge region from data thus far collected from only a few localities. For example, it is difficult to assess the importance of the cerrado, especially its gallery forests, as being a possible source area for Amazonian species, yet such knowledge is directly applicable to better conservation efforts.

Mares (1982b:535) noted, "... broadscale survey work is vitally needed in order to provide the foundation upon which all other field research is based. It is a sad commentary that the distributional patterns of economically important species are probably better understood by professional hunters than by biologists or game officials . . . a primary research priority (for South America is) an overall survey of the mammals of each country." This report presents one of the initial attempts to describe the fauna of the cerrado based on actual specimen records. We believe that the cerrado plays an important biogeographic role in the maintenance of several of South America's major habitats. Conservation of the fauna of this region should be a matter of the highest priority. Of equal importance is the need for a detailed systematic and ecological survey of the mammals of this region. We hope that this paper will serve as a stimulus for such research in the future.

ACKNOWLEDGMENTS

Primary support for this research was provided by the National Science Foundation (grants DEB 82-13675 and INT 82-12576 to MAM), Conselho Nacional de Desenvolvimento Científico e Tecnológico of Brazil (to Dr. C. J. R. Alho) and the University of Oklahoma Associates. In the Federal District, research areas and logistic support were provided by the Instituto Brasileiro de Geografia e Estatística and Fundação Universidade de Brasília. We thank the personnel of the ecological reserves at IBGE and FAL, and the following individuals for their contributions to the research: Dr. Cleber and Celina Alho, Dr. Roberto Cavalcanti, Domiciano P. S. Dias, Elmar Alfenas Couto, Kris Ernest, Rogério Gribel, Raimundo Henriques, Dr. T. E. Lacher, Jr., K. C. Larson, Alvaro Negret, Leslie Nitikman, and Valdevino Soares. Dr. Charles Handley of the U.S. National Museum, Drs. Al Gardner and Don Wilson of the Bird and Mammal Laboratory of the U.S. Fish and Wildlife Service, and Dr. Phil Myers of the Museum of Zoology, University of Michigan, generously assisted in identifying some of the specimens. Research facilities and study areas were also provided by the Instituto Brasileiro de Desenvolvimento Florestal (IBDF) in Mato Grosso, by EMBRAPA (Empresa Brasileira de Pesquisa Agropecuária) in Mato Grosso do Sul, and by SEMA (Secretaria Especial do Meio Ambiente) in Minas Gerais.

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