

## Bats of the state of Minas Gerais, southeastern Brasil

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### Abstract

Minas Gerais is the largest state in the Southeastern of Brazil, and its location in the transition between the humid coastal Atlantic Forest and the drier Western and central Brazilian countryside allows the occurrence of a rich mosaic of biomes and ecosystems that includes the Cerrado, the Caatinga, the Atlantic Forest, and karstic environments. This work is the first comprehensive compilation of the bat fauna of Minas Gerais state, Southeastern Brazil, including original data from surveys conducted independently by the authors, and published information documented with data from several museum collections. Although large areas of MG remains unsampled, unknown and/or unprotected, long term studies are virtually inexistent, and systematic inventories have not been documented to date, our results reveal high bat species richness for the state, with 77 species distributed in seven families. This indicates that MG has more bat species recorded than other Southeastern Brazilian states, a result that contrasts with the noticeable paucity of data for the state. The bat diversity kept in museums does not mirror the actual bat diversity of MG, which thus urges to be properly accessed. Additionally, the collections examined were poorly represented in specimens from Minas Gerais and systematic series are rare.

**Keywords:** Chiroptera, Atlantic Forest, Cerrado, Caatinga, distribution, mammals, species richness.

### Resumo

Minas Gerais (MG) é o maior estado da região sudeste e sua localização em área de transição entre a faixa super úmida da costa e os ecossistemas mais áridos do centro-oeste brasileiro propicia a ocorrência de um rico mosaico de biomas e ecossistemas, incluindo o Cerrado, a Caatinga, a Mata Atlântica e áreas cársticas. Embora se saiba que a mastofauna de Minas Gerais é rica em espécies, não há uma lista de espécies de morcegos publicada, sendo esta a primeira compilação da fauna de quirópteros de MG. São aqui reunidos dados originais de inventários realizados independentemente pelos autores, informações da literatura e levantamento de espécimes depositados em várias coleções. Os resultados indicam a ocorrência de 77 espécies distribuídas em sete famílias em Minas Gerais, o que coloca o estado como o mais rico do sudeste brasileiro em número de espécies de morcegos. Essa riqueza surpreende também, devido ao fato constatado da escassez de dados disponíveis, conforme detectado no presente estudo. Grandes áreas do estado permanecem pouco conhecidas ou completamente desconhecidas em termos de sua quiropterofauna, incluindo ecossistemas frágeis associados à Caatinga, ao Cerrado e à Mata Atlântica, como os campos rupestres e áreas cársticas e não há sequer um estudo de longa duração. As coleções estudadas têm pouca representatividade em termos de espécimes oriundas do estado de Minas Gerais e são raras as séries sistemáticas oriundas de coletas no estado.

**Palavras-chave:** Chiroptera, Mata Atlântica, Cerrado, Caatinga, distribuição, mamíferos, riqueza de espécies.

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## Introduction

The diversity of Brazilian bats is underestimated because large areas remain unsampled and systematic inventories and long-term studies are completely lacking, among several other concurrent reasons (Tavares *et al.*, 2008). Particularly, species accounts with basic information and indications of vouchers from reference collections are missing in most published compilations and checklists. As a consequence, local and regional patterns of Brazilian bats distribution are poorly known even for the most intensively studied regions.

The Southeastern region concentrates Brazil's largest human populations distributed in four states: Rio de Janeiro (RJ), São Paulo (SP), Espírito Santo (ES) and Minas Gerais. Minas Gerais is the largest Southeastern state (ca. 586,528, 293 km<sup>2</sup>) and harbors a rich mosaic of biomes and ecosystems, including the Cerrado, the Caatinga, the Atlantic Forest, and karstic environments. The state is located in the transitional area between the very humid coastal Brazilian Atlantic Forest and the driest biomes and ecosystems of the Western and central Brazilian countryside.

According to Drummond *et al.* (2005) 243 mammal species have been recorded in Minas Gerais, accounting for approximately 45% of the total Brazilian mammal species. Although bats may represent nearly half of these species, they are among the poorest known mammalian orders in the state. As early remarked by Glass & Encarnação (1982) it is surprising the small number of published studies on bats of MG, considering its size and richness of natural formations.

Records of bat species in Minas Gerais can be found in a few unpublished theses, published abstracts and papers. Data about bat species from areas of Atlantic Forest in the Eastern of MG have been published by Stallings *et al.* (1991), Aguiar *et al.* (1995), Tavares *et al.* (1998), Tavares & Anciães (1998), Garcia *et al.* (2000), Tavares & Taddei (2003), Nogueira *et al.* (2003), Aguiar & Marinho Filho (2004; 2007) and Tavares *et al.* (2007). Bat records from the Cerrado domain and the ecotonal zones of Cerrado and Atlantic Forest of Minas Gerais have been published by Sazima & Sazima (1975), Sazima *et al.* (1978), Glass & Encarnação (1982), Pedro & Taddei (1997; 2003) and Falcão *et al.* (2003). Only three local surveys of bats in karstic areas have been published (Grelle *et al.* 1997; Trajano & Gimenez 1998; Almeida *et al.* 2002), as well as in urban and peri-urban bat faunas

(Camara *et al.* 1999; Perini *et al.* 2003; Stutz *et al.* 2004). Notwithstanding there is no compilation of data about bats from Minas Gerais up to date (Bergallo *et al.* 2003). Herein, we present the first comprehensive checklist of bats from Minas Gerais based on literature records, original data from fieldworks and museum vouchers.

## Materials and methods

Information was gathered from the literature and complemented with original data based on inventories conducted independently by the authors in different regions of the state of Minas Gerais. Additionally, we examined museum specimens of 12 Brazilian and three North American collections (two in the USA and one in Canada), which are listed below.

In the species account, for each species we list locality/ies boldfaced together with the institutional acronyms and catalog number or field number (*e.g.* FAP 001), or “n/n” (specimens uncataloged and without field numbers), and latitude and longitude (in parentheses). Variation over the landscapes within the state, including biome delimitation followed the definitions of IBGE (2004) and COPAM (Drummond *et al.* 2005), and delimitation of mesoregions and microregions of MG followed Diniz & Batella (2005) (Figure 1).

The North, Northeastern and Northwestern of Minas Gerais are in the mesoregions 6 and 7 (Figure 1). The former mesoregion includes the “Noroeste de Minas Gerais”, and the “Norte de Minas Gerais” microregions; the second mesoregion includes the “Jequitinhonha” and “Mucuri” microregions. Those areas harbor the Cerrado and Caatinga biomes, as well as transitional and karstic formations.

The “Norte de Minas Gerais” microregion (N of MG) that borders a semi-arid region vegetation is a Cerrado and Caatinga ecotone, with elements from both biomes interspersed by patches of semi-deciduous forest surrounding karstic areas and “veredas”. “Veredas” are humid patches associated with small lagoons and marshes encroached in the Cerrado with the typical presence of the buriti palm *Mauritia flexuosa* (Palmae). The “Noroeste de Minas Gerais” microregion (NW of MG) is typically covered by Cerrado and veredas.

Finally, the “Jequitinhonha and Mucuri” valleys (NE of MG) are characterized for a dry climate and vegetation associated.

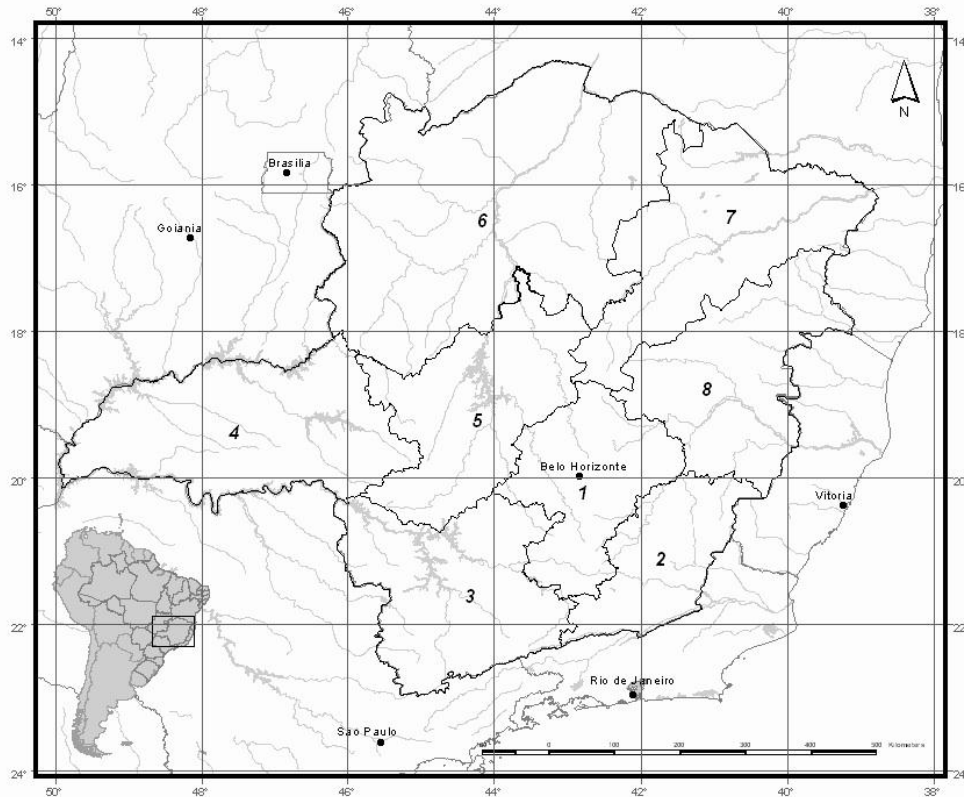


Figure 1. Map of geographical development zones defined by Fundação João Pinheiro for the state of Minas Gerais (modified from Diniz & Batella 2005). 1 – Central; 2 – Zona da Mata; 3 – Sul de Minas; 4 – Triângulo Mineiro e Alto Paranaíba; 5 – Centro Oeste de Minas; 6 – Norte e Noroeste de Minas; 7 – Jequitinhonha e Mucuri; e 8 – Rio Doce.

Records of bats for the Northern MG were reported by Nogueira & Pol (1998) and Nogueira *et al.* (2003) for Jaíba and Matias Cardoso; by Trajano & Gimenez (1998) for the Olhos D'Água cave, Itacarambi; and by Almeida *et al.* (2002) for Curvelo and Cordisburgo.

Data on bats from “Noroeste de Minas” (NW of MG) are rare, and from this microregion we present original data for Brejão farm, that were collected during a study about the influence of the *Eucalyptus* (Myrtaceae) culture on the bat community.

Additional data from N, NE and NW regions of MG was obtained through museum records, and localities of those regions include Cordisburgo, Curvelo, Itacarambi, Jaíba, Matias Cardoso, and

Pirapora. We also included two records from Caririnha, state of Bahia (BA), because the locality is situated right in the border at the North frontier of MG with BA states.

The Center-east and Central mesoregions of Minas Gerais (mesoregions 1 and 5 in figure 1) are transitional areas between the wet climate and vegetation of Atlantic Forest (Eastern, South and Southeastern of MG; mesoregions 2, 3 and 8, figure 1) and the Cerrado (West and Northwestern; mesoregions 4 and part of 6, fig. 1), and the prevalent drier ecosystems present in the North and Northeastern (Cerrado and Caatinga; mesoregions 7 and part of 6). Typically the Atlantic Forest patches are secondary semideciduous forest, and frequently composed with “dry forest”. A singular ecosystem

that appears in the Central and Center-East regions along the higher altitudes of Espinhaço mountain range are the “Campos Rupestres” — altitudinal grasslands surrounded by rock outcrops, with shrubs and small trees, a great diversity in endemic orchids and bromeliads, and remarkable presence of *Paepalanthus* spp. (Eriocaulaceae). This a heavily biologically disturbed area of Minas Gerais, and historical anthropic activities have been iron ore mining, timber extraction, coffee plantations and cattle. *Eucalyptus* plantations often replace native vegetation.

Records of bats from the city of Belo Horizonte (capital of the state labeled in the mesoregion 1, figure 1) have been published by Camara *et al.* (1999), and Perini *et al.* (2003). Data from the surroundings of Belo Horizonte were gathered in the Parque Estadual Serra do Rola Moça, Fechos, and in the municipality of Nova Lima (Isaac-Júnior & Sábato 1994; Camara *et al.* 1999). Mares *et al.* (1989) provided data about mammals from Estação Ecológica Pirapitinga, near Três Marias (CW). Grelle *et al.* (1997) surveyed forest fragments and caves in the Área de Proteção Ambiental Carste de Lagoa Santa (APA-Lagoa Santa) (19°33' S, 43°59' W). Records from the Parque Nacional da Serra do Cipó come from the studies of Sazima & Sazima (1975) and Sazima *et al.* (1978). Falcão *et al.* (2003) surveyed the Reserva Particular do Patrimônio Natural Serra do Caraça (RPPN Serra do Caraça). Five published reports have addressed the bat fauna of Parque Estadual do Rio Doce (PERD) to date: Stallings *et al.* (1990), Tavares & Anciães (1998), Tavares (1999), Tavares & Taddei (2003) and Nogueira *et al.* (2003). Studies of the bat fauna of RPPN Miguel Feliciano Abdalla, Caratinga, have been conducted by Aguiar & Marinho-Filho (2004). Original data from Eastern MG presented in this study are from Antônio Dias (RPPN Guilman-Amorim), Caratinga (RPPN Miguel Feliciano Abdala), Caetés, Lagoa Santa (Lapinha Complex), Santa Bárbara (RPPN Peti), Serra do Cipó municipalities, and Simonésia (Mata do Sossego).

The mesoregion “Triângulo mineiro and Alto Paranaíba” (mesoregion 4 in fig. 1) is in the Western (W) part of the state and is characterized by Cerrado, with few native remnants. Bat sampling in the West of Minas Gerais is represented by a single record by LaVal (1973), the studies of Glass & Encarnação (1982), Pedro (1994), Pedro & Taddei (1997; 1998) and Stutz *et al.* (2004). Glass & Encarnação (1982) collected bats for over four months from the mid wet season

until the beginning of dry season in São Roque de Minas (20°15' S, 46°22' W) in the vicinities of Serra da Canastra National Park. Pedro & Taddei (1997) collected bats in the municipality of Uberlândia, in the Panga Reserve (between 19°9' S and 19°11' S, 48°23' W and 48°24' W) a 404 ha area with 50% of Cerrado formation. Stutz *et al.* (2004) surveyed the Uberlândia region and recorded 41 species. Records of bats of Western MG were also published by Pedro & Taddei (1998) from the municipalities of Fronteira (20°16' S, 49°11' W), Frutal (20°01' S, 48°56' W), Itapagipe (19°54' S, 49°22' W), Salto da Água Vermelha (15°44' S, 41°27' W), and Uberaba (19°44' S, 47°55' W), municipalities inserted in the original Cerrado domain.

The “Zona da Mata” and “Sul de Minas” mesoregions of Minas Gerais (mesoregions 2 and 3 in fig. 1) are also covered by transitional areas of Cerrado and Atlantic Forest, but both biomes have intensively suffered from environmental modifications and specifically with the occupation to raise cattle. Data for this region are provided by the observation of collection material from Pouso Alegre, Arceburgo, Elói Mendes and Lavras.

Taxonomy overall follows Simmons (2005) unless otherwise commented in the text. Species status if under threat is according to The International Union for Conservation of Nature and Natural Resources (IUCN) (2010), MMA (2003) and Biodiversitas (2007).

The museums in which vouchers and other specimens are preserved are indicated by the following institutional acronyms: AMNH, American Museum of Natural History (New York, USA); CMEC, Embrapa Cerrado (Brasília, DF, Brazil); DZSJRP, Departamento de Zoologia de São José do Rio Preto (São José do Rio Preto, SP, Brazil); MN, Museu Nacional, Universidade Federal do Rio de Janeiro (Rio de Janeiro, RJ, Brazil); MZUSP, Universidade de São Paulo (São Paulo, SP, Brazil); UNESP, Instituto de Biociências (São Paulo, SP, Brazil); ALP, Universidade Federal Rural do Rio de Janeiro (Seropédica, RJ, Brazil); UFMG, Universidade Federal de Minas Gerais (Belo Horizonte, MG, Brazil); MCN, Museu de Ciências Naturais da Pontifícia Universidade Católica de Minas Gerais (Belo Horizonte, MG, Brazil); MZ, Museu de Zoologia da Pontifícia Universidade Católica de Minas Gerais (Belo Horizonte, MG, Brazil); UFPA, Universidade Federal de Lavras (Lavras, MG, Brazil); UNIDERP, Universidade para o Desenvolvimento

da Região e do Pantanal (Campo Grande, MS, Brazil); DZIBUSP, Instituto de Biociências da Universidade de São Paulo (São Paulo, SP, Brazil); USNM, National Museum of Natural History, Smithsonian Institution (Washington, DC, USA); and ROM, Royal Ontario Museum (Ontario, Canada).

Protected areas with records of bats within MG were: Reserva Particular do Patrimônio Natural Peti (RPPN Peti), Santa Bárbara, MG; Parque Estadual do Rio Doce (PERD), Marliéria, MG; Reserva Particular do Patrimônio Natural Guilman-Amorim (RPPN Guilman-Amorim), Antônio Dias, MG; Reserva Particular do Patrimônio Natural Miguel Feliciano Abdala (RPPN Miguel Feliciano Abdalla), Caratinga, MG; Reserva Particular do Patrimônio Natural Mata do Sossego (RPPN Mata do Sossego), Simonésia, MG; Reserva Particular do Patrimônio Natural Serra do Caraça (RPPN Serra do Caraça), Santa Bárbara, MG; Parque Estadual do Itacolomi (PE Itacolomi), Ouro Preto, MG; Parque Nacional Cavernas do Peruaçu, Januária, MG; Estação Ecológica de Pirapitinga (EE Pirapitinga), Três Marias, MG; Área de Proteção Ambiental de Lagoa Santa (APA Lagoa Santa), Lagoa Santa, MG; Parque Nacional da Serra do Cipó (PARNA Serra do Cipó), Jaboticatubas, MG; Estação Ecológica da UFMG (EE UFMG), Belo Horizonte, MG; and Parque Estadual do Ibitipoca (PE Ibitipoca), Lima Duarte, MG.

## Results

We gathered data from 73 localities (Figure 2), being 21 located within the Atlantic Forest domains, 20 in the Cerrado domain, eight in the Caatinga domain, 18 in Atlantic Forest/Cerrado ecotone, and two in Cerrado/Caatinga ecotone. A total of 77 species of bats, belonging to 45 genera and seven families have been recorded in the state of Minas Gerais up to date. The list is detailed in the species account below and summarized in table 1.

## SPECIES ACCOUNT

### FAMILY EMBALLONURIDAE GERVAIS, 1855

#### SUBFAMILY EMBALLONURINAE GERVAIS, 1855

##### *PEROPTERYX* PETERS, 1867

The range of distribution of the two species recorded in the state is much likely underestimated because of bias in the selection of collection sites (e.g. few karstic areas surveyed), and sampling techniques.

##### *Peropteryx kappleri* Peters, 1867

*Peropteryx kappleri* is known from a single locality in MG, the Olhos D'Água cave situated nearby the Parque Nacional Cavernas do Peruaçu, at the Peruaçu Valley, a karstic area located in the Cerrado/Caatinga ecotone in the North of MG (Trajano & Gimenez 1998). Individuals of *P. kappleri* were found sharing the Olhos D'Água cave, Itacarambi, with the congenera *P. macrotis*, *Natalus* and ten other phyllostomids (Trajano & Gimenez 1998). Voucher specimens of *P. kappleri* are deposited at DZIBUSP, DZSJRP, and MZUSP (Trajano & Gimenez 1998).

##### *Peropteryx macrotis* (Wagner, 1843)

*Peropteryx macrotis* was recorded by Trajano & Gimenez (1998) the Olhos D'Água cave situated nearby the Parque Nacional Cavernas do Peruaçu, located in the Cerrado/Caatinga ecotone in the North of MG. Tavares (1999) also captured this species in secondary forests in the Atlantic Forest of Eastern Minas Gerais, and observed a group roosting inside a concrete pipe in the municipality of Marliéria at the Parque Estadual do Rio Doce (PERD). New records reported in this account are from the RPPN Peti, Eastern MG. Additionally, we found vouchers documenting *P. macrotis* for three other localities: Lagoa Santa, Salinas, and Sete Lagoas.

Specimens examined:

Lagoa Santa (19°06' S, 43°09' W) USNM 391023–24. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field numbers) FAP 055–05. Salinas (16°10' S, 42°17' W) UFMG n/n. Sete Lagoas (19°04' S, 44°03' W) USNM 391020–22.

##### *RHYNCHONYCTERIS* PETERS, 1867

##### *Rhynchonycteris naso* (Wied-Neuwied, 1820)

*Rhynchonycteris naso* was recorded in karstic areas in the Caatinga/Cerrado ecotone in the North of MG (Nogueira & Pol 1998), and in the Atlantic Forest of Eastern MG (Tavares 1999; Tavares & Anciães 1998). Large groups of *R. naso* have been observed in their roosts in MG, often close to water and occupying both natural roosts (e.g. logs over the water) and manmade structures, such as bridges, in association with *Noctilio albiventris* (Nogueira & Pol 1998), under “palafita” houses, in association with *M. macrophyllum* and *M. albescens* (Tavares & Anciães 1998; Tavares 1999).

The scanty information about the biology of *R. naso* in MG has been published in Nogueira & Pol (1998) and Tavares & Anciães (1998). New records reported in this account are from the Fazenda

Brejão. Additionally, we found vouchers documenting *P. macrotis* for two other localities in

the North of MG (Manga, Mocambinho), and one in the East of MG (Parque Estadual do Rio Doce).

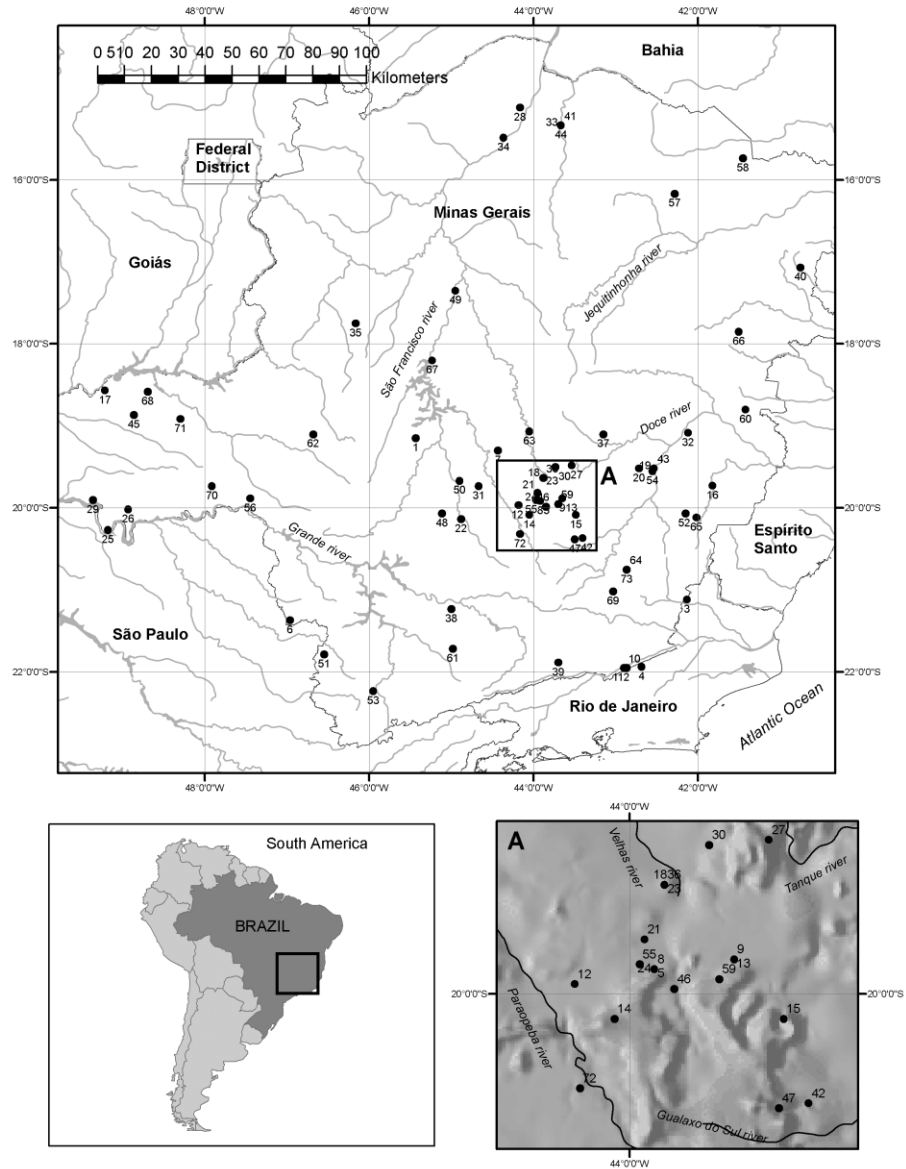


Figure 2: Map showing site localities where at least one bat has been sampled within the state of Minas Gerais. Legend: 1 – Abaeté; 2, 3 and 4 – Além Paraíba; 5 – Alfenas; 6 – Arceburgo; 7 – Barra do Paraopeba; 8 and 9 – Belo Horizonte; 10 and 11 – Benjamin Constant; 12 – Betim; 13 – Caeté; 14 and 15 – Caraça; 16 – Caratinga; 17 – Centralina; 18 – Conceição de Mato Dentro; 19 and 20 – Coronel Fabriciano; 21 – Curvelo; 22 – Divinópolis; 23 and 24 – Fechos; 25 – Fronteira; 26 – Frutal; 27 – Ipatinga; 28 – Itacarambi; 29 – Itapagipe; 30 – Jaboticatubas; 31 – Jaguará; 32 – Jaguarauçu; 33 – Jaíba; 34 – Januária; 35 – João Pinheiro; 36 and 37 – Lagoa Santa; 38 – Lavras; 39 – Lima Duarte; 40 – Machacalis; 41 – Manga; 42 – Mariana; 43 – Marliéria; 44 – Mocambinho, Jaíba; 45 – Monte Alegre de Minas; 46 – Nova Lima; 47 – Ouro Preto; 48 – Pains; 49 – Pirapora; 50 – Pitangui; 51 – Poços de Caldas; 52 – Ponte Nova; 53 – Pouso Alegre; 54 – Rio Matipó; 55 – Sabará; 56 – Sacramento; 57 – Salinas; 58 – Salto da Água Vermelha; 59 – Santa Bárbara; 60 – Santana do Araçuaí, Itinga; 61 – São Tomé das Letras; 62 – Serra do Salitre; 63 – Sete Lagoas; 64 – Silvestre; 65 – Simonésia; 66 – Teófilo Otoni; 67 – Três Marias; 68 – Tupaciguara; 69 – Ubá; 70 – Uberaba; 71 – Uberlândia; 72 – Vargem Alegre; e 73 – Viçosa.

## Specimens examined:

Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 043–44. Manga (15°20' S, 43°40' W) MN 46482. Mocambinho, Jaíba (15°20' S, 43°40' W) MNRJ 28870–28871, 46448. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) ROM 91158; UFMG n/n.

## SACCOPTERYX ILLIGER, 1811

*Saccopteryx bilineata* (Temminck, 1838)

*Saccopteryx bilineata* has been reported to occur in the state of MG by Vieira (1955) in the “Rio Doce”. The absence of additional records of this species may be due to methodological constraints, as this species is not commonly recorded through captures using ground-level mist-nets.

## FAMILY NOCTILIONIDAE GRAY, 1821

## NOCTILIO LINNAEUS, 1766

*Noctilio albiventris* Desmarest, 1818

Nogueira & Pol (1998) captured *N. albiventris* roosting in bridges in the North of the state in a Caatinga and Cerrado ecotone (Jaíba). Nogueira & Pol (1998) also provided information on foraging behavior, activity patterns, reproductive strategies and roosting interactions of *N. albiventris* with other species. Pedro & Taddei (1998) and Stutz *et al.* (2004) recorded this species in Western MG, in the Cerrado of the region known as “Triângulo Mineiro”.

*Noctilio leporinus* (Linnaeus, 1758)

*Noctilio leporinus* has been recorded in the Rio Doce State Park (PERD) (Stallings *et al.* 1991; Zortéa & Aguiar 2001), Pedro & Taddei (1998) and Stutz *et al.* (2004) also recorded the species in Western of MG, in native and urban areas within the Cerrados. Zortéa & Aguiar (2001) also provided data on the diet and feeding behavior of *N. leporinus*. Additionally there is voucher material from Parque Estadual do Rio Doce (Eastern MG) and Pains (SW MG).

## Specimens examined:

Pains (20°04' S, 45°07' W) USNM 391025. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) USNM 391025, 341449–50, 391025, 541448, ROM 70939, 78017, 91162.

## FAMILY PHYLLOSTOMIDAE GRAY, 1825

## SUBFAMILY DESMODONTINAE BONAPARTE, 1845

## DESMODUS WIED-NEUWIED, 1826

*Desmodus rotundus* (É. Geoffroy, 1810)

*Desmodus rotundus* is a widespread and locally abundant species in MG (see species examined list), with specimens recorded for all biomes and ecosystems from limestone karstic areas to urban areas, being recorded: in the Cerrado/Caatinga ecotone and in the limestone karstic areas of Northern MG (Trajano & Gimenez 1998; Almeida *et al.* 2002); in the Atlantic Forest domains, and Atlantic Forest/Cerrado ecotone of Eastern MG (Tavares 1999; Falcão *et al.* 2003); in the Cerrado domains of Western MG (Glass & Encarnação 1982; Pedro & Taddei 1998; Stutz *et al.* 2004), and of the Southwestern MG (Pereira-Barreto *et al.* 1968); and in the Cerrado/Atlantic Forest and karstic provinces mosaics of Center/Center South/Center Eastern of MG (Lima 1926; Vieira 1942; Uieda 1992; Isaac-Júnior & Sábato 1994; Grelle *et al.* 1997; Perini *et al.* 2003), including urban environments (*e.g.* the city of Belo Horizonte [Uieda 1995; Perini *et al.* 2003]). The new records listed in the present account are the RPPN Peti, RPPN Guilman-Amorim, and RPPN Mata do Sossego.

## Specimens examined:

Arceburgo (21°22' S, 46°58' W) MZUSP n/n. Belo Horizonte (19°55' S, 43°55' W) MZUSP 6149. Gruta da Lapinha, Lagoa Santa (19°38' S, 43°53' W) MCN n/n. Lagoa Santa (19°38' S, 43°53' W) USNM 391115–22. Mariana (20°22' S, 43°24' W) MZUSP n/n.

Mina de Paulina, Caeté (19°53' S, 43°39' W) MZUSP 9461. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) MZUSP (field numbers) ADD 391–392. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field number) FAP 019. RPPN Serra do Caraça, Sacas Altas (20°05' S, 43°29' W) MCN n/n. Sacramento (19°53' S, 47°27' W) MZUSP 14216. Sabará (19°54' S, 43°58' W) MZUSP 15127–15139. Sete Lagoas (19°04' S, 44°03' W) USNM 391103–14. Ubá (21°01' S, 43°02' W) ROM 78694–702, 91198. Vargem Alegre (20°19' S, 44°10' W) MZUSP 1362.

*DIAEMUS* MILLER, 1906*Diaemus youngi* (Jentink, 1893)

The only record that we found for this species is from the Cerrado domain (Uieda & Araújo 1987; Uieda 1992), close to the municipalities of Uberlândia and Uberaba. *Diaemus youngi* probably occurs or have occurred in other localities of MG. Based on its apparently scarcity, it has been suggested that *D. youngi* should be protected, particularly because decline of its populations have been enhanced by indiscriminated vampire control programs (Aguiar *et al.* 2006). It is noteworthy the low representativeness of specimens in museums, since we examined most of the main scientific collections on Neotropical bats in Brazil and abroad.

*DIPHYLLA* SPIX, 1823*Diphylla ecaudata* Spix, 1823

Trajano & Gimenez (1998) recorded *D. ecaudata* in a Cerrado/Caatinga ecotone in the North of MG. Captures in Atlantic Forest have been registered by Aguiar (1994), Uieda & Araújo (1987), Uieda (1992), Grelle *et al.* (1997), Almeida *et al.* (2002). Stutz *et al.* (2004) recorded this species in karstic environments, “campo-cerrado”, semideciduous forest and peri-urban areas in different localities of the Cerrado of MG. The new records listed in the present account are the RPPN Miguel Feliciano Abdalla, and the Parque Nacional da Serra do Cipó (Eastern and Center-Eastern MG).

## Specimens examined:

Gruta da Lapinha, Lagoa Santa (19°38' S, 43°53' W) MCN n/n; MZUSP (field number) ADD 361; CMEC n/n. PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) UFMG n/n. Rio São Francisco (no precise locality) MN 3269. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) CMEC n/n. Sete Lagoas (19°04' S, 44°03' W) USNM 391123–28.

## SUBFAMILY GLOSSOPHAGINAE BONAPARTE 1845

## TRIBE GLOSSOPHAGINI BONAPARTE, 1845

*ANOURA* GRAY, 1838*Anoura caudifer* Gray, 1838

*Anoura caudifer* is widespread in the state, and has been recorded in relatively undisturbed and secondary forests in the Atlantic Forest remnants (Stallings *et al.* 1991; Aguiar *et al.* 1995; Tavares 1999; Falcão *et al.* 2003; Aguiar & Marinho-Filho 2004), and in the Cerrado and Caatinga/Cerrado

ecotone areas within MG including limestone karstic areas, gallery forests, xeromorphic forests and urban areas in the Western MG (Glass & Encarnação 1982; Pedro 1992; Pedro & Taddei 1997; 1998, Stutz *et al.* 2004). Additional historical records of *A. caudifer* can be found in Dobson (1878), Sanborn (1941) and Vieira (1942; 1955). The new records listed in this account are from the RPPNs Guilman-Amorim, Mata do Sossego, and Peti. There are also several localities not listed in publications documented by vouchers in collections (see below).

## Specimens examined:

Caeté (19°53' S, 43°39' W) MZUSP 9586–9592. Fazenda Moeda, Itapagipe (19°54' S, 49°22' W) DZSJRP 2054–2063. Fazenda N.S. Aparecida, 3 Km from Rio Grande, Uberaba (19°44' S, 47°55' W) DZSJRP 11704–11705 (550/1). Fazenda Prata, Além Paraíba (21°07' S, 42°08' W) MN 43242, 43246. Fazenda Vargem Grande, Ponte Nova (20°04' S, 42°09' W) MN 24785. Ipatinga (19°29' S, 43°32' W) MZUSP 16013–16016.

Pains (20°04' S, 45°07' W) USNM 391047. Pirapora (17°21' S, 44°57' W) MZUSP 3404.

RPPN Guilman–Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field numbers) FAP 027, 051. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Sete Lagoas (19°04S, 44°03' W) USNM 391044–46. Ubá (21°01' S, 43°02' W) ROM 70902, 70904–907, 70909, 77366, 78486. Vargem Alegre (20°19' S, 44°10' W) MZUSP 15855–15856. Viçosa (20°45' S, 42°52' W) ROM 70903, 70908, 78480–81, 78484–85, 91179; USNM 391048.

*Anoura geoffroyi* (E. Geoffroy, 1818)

*Anoura geoffroyi* has been recorded by Almeida *et al.* (2002) in karstic areas, and by Glass & Encarnação (1982), Pedro & Taddei (1997, 1998) and Stutz *et al.* (2004) in Cerrado localities of Western MG. Sazima & Sazima (1975) described the foraging behavior of *A. geoffroyi* visiting flowers of *Lafoesia pacari* (Lythraceae) in Jaboticatubas (PARNA Serra do Cipó). Stallings *et al.* (1991) and Falcão *et al.* (2003) also found this species in remnants of Atlantic Forest in Eastern MG. The new records listed in this account are from the Parque Estadual do Rio Doce and from the RPPN Peti (both in the East of MG).



## Specimens examined:

Km 110 from road connecting Vespasiano to Conceição do Mato Dentro, PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) DZSJRP 10340(552). Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n. RPPN-Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG n/n. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Silvestre, Viçosa (20°45' S, 42°52' W) AMNH 268401; ROM 58677–681, 58711–715, 77431–447, 77450–51, 78489–492; USNM 541451–58. Viçosa (20°45' S, 42°52' W) MN 3389; AMNH 268400; ROM 78488, 78493–497, 91178.

*CHOERONISCUS* THOMAS, 1928*Choeroniscus minor* (Peters, 1868)

*Choeroniscus minor* is known only from a small remnant of Atlantic Forest, Eastern of MG (Aguiar *et al.* 1995), the RPPN Miguel Feliciano Abdala in the municipality of Caratinga (19°47' S, 51°57' W). Aguiar & Marinho-Filho (2004) studied activity patterns of *C. minor* from Caratinga.

## Specimens examined:

RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP (field numbers) LMSA 003, 029, 042, 075, 106, 108, 123, 125, 130, 203.

*GLOSSOPHAGA* É. GEOFFROY, 1818*Glossophaga soricina* (Pallas, 1766)

*Glossophaga soricina* is wide distributed and locally common in MG, and has been recorded in virtually all biomes and ecosystems within the state, including urban areas. In the city of Belo Horizonte (Center-Eastern MG), large colonies of *G. soricina* were found roosting in house ceilings and individuals were observed feeding on trees of *Lafoensia glyptocarpa* (Lythraceae) and *Bauhinia* sp. (Fabaceae) (Perini *et al.* 2003). This species has been recorded in the N (Trajano & Gimenez 1998), E (Stallings *et al.* 1991; Tavares 1999; Aguiar & Marinho-Filho 2004), W (Taddei 1975; Glass & Encarnação 1982; Pedro & Taddei 1997; 1998; Stutz *et al.* 2004), and in the CN, CS, CE, and CW of MG (*e.g.* Isaac-Júnior & Sábato 1994; Grelle *et al.* 1997; Almeida *et al.* 2002; Perini *et al.* 2003). Records from the RPPNs Peti, Guilman-Amorim, and Mata do Sossego, and Fazenda Brejão have not previously been reported, and there are several other localities listed below documented by

vouchers in collections that have not been cited in previous publications.

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) MCN n/n, UFMG n/n. Benjamin Constant (21°57' S, 42°53' W) MZUSP 15939–15943. Betim (19°58' S, 44°11' W) DZSJRP 11652 (584/9); MCN n/n. Estação de Piscicultura, Rio São Francisco, Três Marias (18°12' S, 45°14' W) DZSJRP 15043–15044 (584/17). Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 011, 042, 054. Fazenda N. S. Aparecida, 3 Km from Rio Grande, Uberaba (19°44' S, 47°55' W) DZSJRP 11695 (584/9) and 11706 (584/9). Fazenda Paraopeba, Barra do Paraopeba (19°18' S, 44°26' W) MN 3285. Fazenda Prata, Além Paraíba (21°07' S, 42°08' W) MN 43244–245. Frutal (20°01' S, 48°56' W) DZSJRP 11421–11422 (584/8). Jaíba (15°20' S, 43°40' W) MN 42751–753, 42755–42759, 43248, 46447. Km 110 from road connecting Vespasiano to Conceição do Mato Dentro, PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) 10341 (584/4). Machacalis (17°04' S, 40°45' W) MZUSP 7874. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n. PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) USNM 391040, 391041, 391042, 39104, 310341. Pirapora (17°21' S, 44°57' W) MZUSP 5815; MN 3592. Rio das Velhas, Jaguaracú (19°05' S, 42°07' W) MN 3549. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. RPPN Miguel Feliciano Abdala, Caratinga (19°47' S, 51°57' W) DZSJRP 46, 187, 192. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field number) FAP 021. Serra do Salitre (19°06' S, 46°41' W) DZSRP 14465 (584/16). Sete Lagoas (19°04' S, 44°03' W) USNM 391040, 391041, 391042, 391043. Teófilo Otoni (17°51' S, 41°30' W) MZUSP 5810, 16002–16004. Tupaciguara (18°35' S, 48°42' W) DZSJRP 14467 (584/16). Ubá (21°01' S, 43°02' W) ROM 91177. Viçosa (20°45' S, 42°52' W) DZSJRP 10404 (584/4); ROM 7854.

*LIONYCTERIS* THOMAS, 1913*Lionycteris spurrelli* Thomas, 1913

Trajano & Gimenez (1998) recorded *L. spurrelli* in the cave Olhos D'água, located in the vicinities of the Parque Nacional Cavernas do Peruaçu, Northern MG, and that remains the single known recorded locality for *L. spurrelli* in the state to date.

Trajano & Gimenez (1998) also provided measurements and biological data for this species.

Specimens examined:

Caverna Olhos D'Água, Vale do rio Peruaçu, Itacarambi (15°07' S, 44°10' W) MZUSP 28952–58; DZSRP 16707–8.

TRIBE LONCHOPHYLLINI GRIFFITHS, 1982

LONCHOPHYLLA THOMAS, 1903

*Lonchophylla bokermanni* Sazima, Vizotto & Taddei, 1978

*Lonchophylla bokermanni* was described from a series of specimens captured in Eastern MG (in a road connecting Vespasiano to Conceição do Mato Dentro, in the Parque Nacional da Serra do Cipó [Sazima *et al.* 1978]). Following to the collection of the type series, individuals of *L. bokermanni* have only been recorded one more time in the state by Sazima *et al.* (1988) nearby the type locality. The few records in MG may be due to lack of inventories, as this species appears to be common in Atlantic Forest remnants of the state of Rio de Janeiro (see Sazima & Aguiar 2008).

Sazima *et al.* (1988) studied the pollination ecology of *Encholirium glaziovii* (Bromeliaceae), an endemic terrestrial bromeliad to the “campos rupestres” of the Serra do Cipó National Park that appears to be exclusively pollinated by *L. bokermanni*.

This species have been considered as “data deficient” by Sampaio *et al.* (2010), and regionally (Brazil) threatened (MMA, 2003) and locally (MG) threatened (Fundação Biodiversitas 2007).

Specimens examined:

Km 110 from road connecting Vespasiano to Conceição do Mato Dentro, PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) DZSJRP 10347 (600) Holotype; DZSJRP 10342 (601) Paratype, 10343–10344 (601), 10408 (601/1) Paratype, 11410–11411 (601/1) Paratypes.

*Lonchophylla dekeyseri* Taddei, Vizotto & Sazima, 1983

*Lonchophylla dekeyseri* has been recorded in a single locality in MG at the municipality of Jaboticatubas (PARNA Serra do Cipó) (Taddei *et al.* 1983). Up until now *L. dekeyseri* has only been recorded within the Cerrado biome occurring in Central Brazil (Brasília, DF) including localities in the dry NE Brazil (Gregorin *et al.* 2008), and in the Parque Nacional da Serra do Cipó, Eastern MG.

*Lonchophylla dekeyseri* has been considered globally “near threatened” by Sampaio *et al.* (2010), regionally threatened in Brazil (MMA 2003) and in Minas Gerais (Fundação Biodiversitas 2007).

The single specimen collected in MG at the PARNA Serra do Cipó was designated as paratype, and is deposited in the mammal collection of the Universidade de Campinas (ZUEC 897) (Taddei *et al.* 1983).

SUBFAMILY PHYLLOSTOMINAE

CHROTOPTERUS PETERS, 1865

*Chrotopterus auritus* (Peters, 1856)

Trajano & Gimenez (1998) recorded *Chrotopterus auritus* in the Northern MG karst at the Olhos D'Água cave, located in the vicinities of the Parque Nacional Cavernas do Peruaçu. Stallings *et al.* (1991) captured this species in undisturbed and secondary forests within the Atlantic Forest domain in E MG (PN Rio Doce), and Pedro & Taddei (1998) registered *C. auritus* in the Cerrado of Western MG.

Individuals of *C. auritus* shared the Olhos D'Água cave with nine other phyllostomid species, *N. stramineus*, and two species of *Peropteryx* (Trajano & Gimenez 1998). A new record listed in the present study is from the RPPN Peti, and there are additional localities documented in museums from São Tomé das Letras and Pirapora.

Specimens examined:

Caverna do Carimbado, São Tomé das Letras (21°43' S, 44°59' W) MZUSP 12101. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field number) FAP 015. Serra de Santa Maria, Pirapora (17°21' S, 44°57' W) MZUSP 3077. Sete Lagoas (19°26' S, 44°11' W) USNM 391039.

GLYPHONYCTERIS THOMAS, 1896

*Glyphonycteris sylvestris* Thomas, 1896

*Glyphonycteris sylvestris* is reported for the first time in Minas Gerais based in a record from the RPPN Guilman-Amorim, municipality of Antônio Dias in the Atlantic Forest domains in the Eastern of MG. The few records current available of *G. sylvestris* from the S/SE Brazil have been recorded by Sekiama *et al.* (2001) for the state of Paraná, Trajano (1982), and Pedro *et al.* (2001) for the state of São Paulo, and Dias *et al.* (2003) for the Rio de Janeiro state.

## Specimen examined:

RPPN Guilman Amorim, Piracicaba river basin, between the municipalities of Antônio Dias and Nova Era (19°40' S, 42° 55' W) CMEC n/n.

*LONCHORHINA* TOMES, 1863*Lonchorhina aurita* Tomes, 1863

We found a single record of *L. aurita* in MG, from the municipality of Ipatinga (19°29' W, 43°32' S) located in the Atlantic Forest domain in the Eastern of MG. We however suggest that *L. aurita* may occur in other regions in the state, particularly those associated to karst.

## Specimen examined:

Ipatinga (19°29' S, 43°32' W) MZUSP 5829.

*LOPHOSTOMA* D'ORBIGNY, 1836*Lophostoma brasiliense* Peters, 1866

A single individual of *Lophostoma brasiliense* has been recorded in the Cerrado, at the Fazenda Brejão, captured inside a human habitation.

## Specimens examined:

Fazenda Brejão, Brasilândia de Minas (17°02' e 45°50') UFMG (field number) FAP 010.

Mariana (20°22' S, 43°24' W) MZUSP 2656. Ouro Preto (20°23' S, 43°30' W) MZUSP 15322, 8254. Poços de Caldas (21°08' S, 46°06' W) MN 46451.

*MACROPHYLLUM* Gray, 1838*Macrophyllum macrophyllum* (Schinz, 1821)

*Macrophyllum macrophyllum* has been recorded in the Atlantic Forest domain in Eastern MG (Linares 1966; Tavares 1999; Tavares & Anciães 1998) and in the Cerrados of Western MG (Stutz *et al.* 2004).

Tavares & Anciães (1998) found groups of *M. macrophyllum* roosting close to water in association with *R. naso* and *M. albescens* under palafita houses at the Rio Doce state park, Eastern MG. Stutz *et al.* (2004) collected *M. macrophyllum* inside a road sewer.

## Specimens examined:

Ipatinga (19°29' S, 43°32' W) MZUSP 5832. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n.

*MICRONYCTERIS* Gray, 1866*Micronycteris megalotis* (Gray, 1842)

*Micronycteris megalotis* has been recorded in the Cerrados of Jaboticatubas, and in a transitional area between Atlantic Forest and Cerrado in Caeté.

## Specimens examined:

Caeté (19°53' S, 43°39' W) MZUSP 16302. PARNA Serra do Cipó, Jaboticatubas (19°30' S, 43°44' W) DZSJRP 10346 (618).

*Micronycteris minuta* (Gervais, 1856)

*Micronycteris minuta* has been recorded by Trajano & Gimenez (1998) in the Olhos D'Água cave, located in the vicinities of the Parque Nacional Cavernas do Peruaçu, Northern MG, and in the Cerrados of Western MG (Glass & Encarnação 1982).

At Olhos D'água Cave *M. minuta* was sharing its roost with nine other phyllostomids species, *Natalus stramineus*, and *Peropteryx* (Trajano & Gimenez 1998). Glass & Encarnação (1982) recorded an individual at 200 m elevation in a field above a waterfall in the Serra da Canastra National Park. The record from RPPN Guilman-Amorim is new.

## Specimens examined:

RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. Viçosa (20°45' S, 42°52' W) ROM 91172; USNM 391026; ROM 77767.

*Micronycteris schmidtorum* Sanborn, 1935

Although Marinho-Filho & Sazima (1998) considered *M. schmidtorum* restrict to the Amazon forest, it had been previously recorded for the Caatinga in NE Brazil (Mares *et al.* 1981).

Tavares & Taddei (2003) recorded *Micronycteris schmidtorum* in undisturbed Atlantic Forest site at the Parque Nacional do Rio Doce. Tavares and Taddei (2003) provided measurements of *M. schmidtorum* along with taxonomic comments about this species.

## Specimens examined:

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP – n/n.

*MIMON* GRAY, 1847*Mimon bennettii* (Gray, 1838)

This species has been recorded in karstic areas inserted in the Cerrado domains of central North (Almeida *et al.* 2002) and Eastern MG.

## Specimen examined:

Sete Lagoas (19°26' S, 44°11' W) USNM 391027.

*Mimon crenulatum* (É. Geoffroy, 1803)

*Mimon crenulatum* has been recorded in gallery forests within the Cerrado in Western MG (Pedro & Taddei 1997; 1998; Stutz *et al.* 2004) and in Center-Western MG (Mares *et al.* 1989). An individual from Brasilândia de Minas has been captured in cerrado *sensu strictu* vegetation. Records from Fazenda Brejão and RPPN Miguel Feliciano Abdalla are new.

## Specimens examined:

Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 005, FAP052. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP 112.

## PHYLLODERMA PETERS, 1865

*Phylloderma stenops* Peters, 1865

Trajano & Gimenez (1998) recorded *Phylloderma stenops* at the Olhos D'Água cave, located in the vicinities of the Parque Nacional Cavernas do Peruaçu, North of MG. Those authors also provided external measurements of a single male captured in the cave Olhos D'Água that has been deposited at DZIBUSP collections.

## PHYLLOSTOMUS LACÉPÈDE, 1799

*Phyllostomus discolor* Wagner, 1843

Pedro & Taddei (1998), and Stutz *et al.* 2004 recorded *P. discolor* in the Cerrado domains of Western MG, Almeida *et al.* (2002) registered the species in the Northern karst of MG, and Perini *et al.* (2003) found *P. discolor* in urban parks of the city of Belo Horizonte, central MG. Records from RPPN Miguel Feliciano Abdalla and Fazenda Brejão are new. Museum vouchers also confirmed the occurrence of *P. discolor* in Northern MG.

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field number) FAP 006. Frutal (20°01' S, 48°56' W) DZSJRP 14324 (638/1); 14325(638/1). Mocambinho, Jaíba (15°20' S, 43°40' W) MN 42731–42738; 46446. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP 343.

*Phyllostomus hastatus* (Pallas, 1767)

*Phyllostomus hastatus* is widespread in MG and records are available from inventories in the Atlantic Forest domains in E MG (Stallings *et al.* 1991; Tavares 1999), in the Cerrado domains of W

MG (Glass & Encarnação 1982; Pedro & Taddei 1998; Stutz *et al.* 2004), and from karstic areas in CN and CE of MG (Grelle *et al.* 1997; Almeida *et al.* 2002).

Individuals of *P. hastatus* captured in the Parque Estadual do Rio Doce frequently had pelage color variation, with variants of reddish pelage. A large group of *P. hastatus* (over 30 individuals) was found roosting in an abandoned industrial oven, perching in a line formation with reddish individuals occupying the borders of the line. Records from RPPN Guilman-Amorim, Peti, and Fazenda Brejão are new.

## Specimens examined:

Abaeté (19°09' S, 45°26' W) MN 3388. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 002, 047. Fazenda Marinheiro, Frutal (20°01' S 48°56' W) DZSJRP 14322–14323 (642/16); 14481 (642/7); 14889 (642/17). Mocambinho, Jaíba (15°20' S, 43°40' W) MN 42739. Gruta da Lapinha, APA Carste Lagoa Santa, Lagoa Santa (19°38' S, 43°53' W) MZUSP 16245–16247; 16279–16285. Lagoa Santa (19°38' S, 43°53' W) ROM 50233, 50281, 50285. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG n/n. Sete Lagoas (19°04' S, 44°03' W) USNM 391028; 391029–37. Tupaciguara (18°35' S, 48°42' W) DZSJRP 14468–14469 (642/17). Viçosa (20°45' S, 42°52' W) ROM 78508, 91183; USNM 391038.

## TONATIA GRAY, 1827

*Tonatia bidens* (Spix, 1823)

Trajano & Gimenez (1998) recorded *T. bidens* in Northern MG karst at the Olhos D'Água cave, located in the vicinities of the Parque Nacional Cavernas do Peruaçu, and Tavares *et al.* (2007) captured the species in the Parque Estadual do Rio Doce, Eastern MG. An individual collected in central Northern karst of Curvelo by the IMA staff (Agricultural Institute of Minas Gerais) during a vampire control session in front of a cave is also available at the UFMG collections.

*Tonatia bidens* shared the Olhos D'Água cave with nine other phyllostomid species, *Natalus* and *Peropteryx* (Trajano & Gimenez 1998). A single individual of *T. bidens* has been recorded in relatively undisturbed Atlantic Forest within Parque Estadual do Rio Doce (Tavares *et al.* 2007).

## Specimens examined:

Curvelo (19°49' S, 43°57' W) UFMG n/n.  
Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n.

*TRACHOPS* GRAY, 1847*Trachops cirrhosus* (Spix, 1823)

Tavares *et al.* (2007) recorded *Trachops cirrhosus* in the Parque Estadual do Rio Doce in Eastern MG, and Almeida *et al.* (2002) provided records from the central Northern karst inserted in the Curvelo municipality (Almeida *et al.* 2002). A single individual from Parque Estadual do Rio Doce, an Atlantic Forest reserve was collected inside a human habitation (Tavares 1999).

## Specimens examined:

Ipatinga (19°50' S, 42°53' W) MZUSP 5828.  
Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n.

## SUBFAMILY CAROLLIINAE

*CAROLLIA* GRAY, 1838*Carollia brevicauda* (Schinz, 1821)

We found only three specimens deposited in museums documenting the species *Carollia brevicauda* in MG, collected in the Southern part of the state (Benjamin Constant, and Viçosa). *Carollia brevicauda* is often confused with *C. perspicillata* and hence we suggest that the distribution of *C. brevicauda* as given by the scarce records reported below are not a true representation of its occurrence in the Minas Gerais state.

## Specimens examined:

Benjamin Constant (21°57' S, 42°53' W) MZUSP 15944–15945. Viçosa (20°45' S, 42°52' W) ROM 77448.

*Carollia perspicillata* (Linnaeus, 1758)

*Carollia perspicillata* is widespread and frequently captured within MG and everywhere in the Neotropics (*e.g.* Wilson *et al.* 1996) occurring in a large variety of habitats. Several records document *C. perspicillata* in MG in all biomes and ecosystems present in the state, including those from the Northern MG (Trajano & Gimenez 1998), Eastern (Stallings *et al.* 1991; Grelle *et al.* 1997; Tavares 1999; Falcão *et al.* 2003; Aguiar & Marinho Filho 2004; 2007; Tavares *et al.* 2007), Western (Glass & Encarnação 1982; Pedro & Taddei 1997; Pedro & Taddei 1998; Stutz *et al.*

2004), and Center North (Almeida *et al.* 2002). *Carollia perspicillata* has also been recorded in urban parks of Belo Horizonte city (Isaac-Júnior & Sábato 1994; Câmara *et al.* 1999; Perini *et al.* 2003). Several vouchers in museums document the occurrence of *C. perspicillata* in many other localities within MG (see below). Additional historical records of this species within MG can be found in Dobson (1878).

As *C. perspicillata* may be confused with *C. brevicauda*, revisionary works of *Carollia* deposited in Brazilian museums are needed to better understand the distribution of this taxon.

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) MCN n/n; UFMG n/n; MZUSP 6133. Betim (19°58' S, 44°11' W) MCN n/n. Caeté (19°53' S, 43°39' W) MZUSP 6133; MZUSP 16297, 15733. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50') UFMG (field numbers) FAP 007, 014. Fazenda Moinho, Lagoa Santa (19°38' S, 43°53' W) MCN n/n. Fazenda Paraopeba, Barra do Paraopeba (19°18' S, 44°26' W) MN 3574–3576. Fazenda Prado, Além Paraíba (21°56' S, 42°41' W) MN 43243. Fazenda N. S. Aparecida, approximately 3 km from Rio Grande, Uberaba (19°44' S, 47°55' W) DZSJRP 11708 (567/4). Fechos (19°55' S, 43°55' W) MCN n/n. Frutal (20°01' S, 48°56' W) DZSJRP 11420 (567/4). Ipatinga (19°29' S, 43°32' W) MZUSP 16017–16029, 5834. Jaíba (15°20' S, 43°40' W) MN 42749–750. Lagoa Santa (19°38' S, 43°53' W) MN 13451. Ouro Preto (20°23' S, 43°30' W) MZUSP (field number) ADD 385. Pains (20°04' S, 45°07' W) USNM 391049–51. Parque Estadual do Ibitipoca, Lima Duarte (21°53' S, 43°42' W) MZUSP (field numbers) ADD 396, 397. Parque Estadual Itacolomi, Ouro Preto (20°23' S, 43°30'). Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n. Ponte Nova (20°04' S, 42°09' W) MN 23016–23017. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. RPPN Miguel Feliciano Abdalla (19°47' S 51°57' W) MZUSP (field number) ADD 370. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. Serra Azul, Mocambinho, Jaíba (14°44' S, 44°03' W) MN 42742. Ubá (21°01' S, 43°02' W) ROM 78674–75. Viçosa (20°45' S, 42°52' W) USNM 541469, 541470.

## SUBFAMILY STENODERMATINAE

## TRIBE STURNIRINI

*STURNIRA* GRAY, 1842*Sturnira lilium* (É. Geoffroy, 1810)

*Sturnira lilium* is widespread everywhere in MG, occurring in a large variety of environments from natural reserves to urban parks, in the Eastern and Center-Eastern MG (Stallings *et al.* 1991; Isaac-Júnior & Sábato 1994; Tavares 1999; Camara *et al.* 1999; Falcão *et al.* 2003; Perini *et al.* 2003; Aguiar & Marinho-Filho 2004; 2007), and in the Western of the state (Glass & Encarnaç o 1982; Pedro & Taddei 1997; 1998; Stutz *et al.* 2004). Additional historical records of this species within MG can be found in Dobson (1878), Lima (1926), and Vieira (1942). Several recorded localities document the occurrence of *S. lilium* in many other localities within MG (see below).

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Betim (19°58' S, 44°11' W) MCN n/n. Fazenda Brejão, Brasil ndia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 016, 053. Fechos (19°55' S, 43°55' W) MCN n/n. Frutal (20°01' S, 48°56' W) DZSJRP 14328–14332 (654/14). Lagoa Santa (19°38' S, 43°53' W) USNM 391052; 391053–84; 541471–73. Ja ba (15°20' S, 43°40' W) MN 42745. Mocambinho, Ja ba (15°20' S, 43°40' W) MN 42727. Parque Estadual do Itacolomi, Ouro Preto (20°23' S, 43°30' W) MZUSP (field number) ADD 386. Parque Estadual do Rio Doce (19°31' S, 42°32' W) UFMG n/n. Pouso Alegre (22°14' S, 45°57' W) MZUSP 7060. RPPN Guilman-Amorim, Ant nio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) MZUSP (field numbers) ADD 365, 383. RPPN-Peti, Santa B rbara (19°57' S, 43°24' W) UFMG (field number) FAP 028. RPPN Mata do Sossego, Simon sia (20°11' S, 42°01' W) CMEC n/n. RPPN Serra do Cara a, Santa B rbara (20°05' S, 43°29' W) MCN n/n. Silvicultura Woods, Viçosa (20°45' S, 42°52' W) ROM 78534–35. Vargem Alegre (20°19' S, 44°10' W) MZUSP 15828–15832. Viçosa (20°45' S, 42°52' W) MN 3396; ROM 58675–76, 58720–23, 70925–38, 77362, 77449, 78517–33, 78601, 91182; USNM 541474–80, 78534–35.

*ARTIBEUS* LEACH, 1821

The systematic of large *Artibeus* populations within Brazil is unresolved and in need of revision. Particularly, populations of large *Artibeus* from

South/Southeastern Brazil have variations in external characters that make their field identification confusing and therefore distribution records of *Artibeus* species based in unvouchered records must be taken with caution. In the present account, we follow Lim (1997) and Lim *et al.* (2004) recommendations considering *A. planirostris* a full species separated from its congener *A. jamaicensis*.

*Artibeus fimbriatus* Gray, 1838

The records available for *Artibeus fimbriatus* are from Eastern MG, in the Atlantic Forest domains (Stallings *et al.* 1991; Taddei *et al.* 1998; Tavares 1999; Aguiar & Marinho-Filho 2004; Tavares *et al.* 2007). This species has been recorded in lower frequencies in highly disturbed secondary forest within MG, when compared to less disturbed areas and primary forest areas (*e.g.* Tavares *et al.* 2007).

## Specimens examined:

Parque Estadual do Rio Doce, Marli ria (19°31' S, 42°32' W) UNIDERP n/n. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) MZUSP (field numbers) ADD 363–364. RPPN Peti, Santa B rbara (19°57' S, 43°24' W) UFMG n/n.

*Artibeus planirostris* Leach, 1821

*Artibeus planirostris* has been recorded in the Western Cerrados of MG (Sazima & Sazima 1975; Pedro & Taddei 1997; 1998; Stutz *et al.* 2004), and in the Atlantic Forest and Cerrado of Eastern MG (Grelle *et al.* 1997; Tavares *et al.* 2007). Perini *et al.* (2003) recorded *A. planirostris* in urban parks of the city of Belo Horizonte.

Sazima & Sazima (1975) the feeding ecology of *A. planirostris* species while visiting flowers of *Lafoensia pacari* (Lithraceae), in the Serra do Cip  National Park. *Artibeus planirostris* occurred only in the Cerrado of Fazenda Brejão, Northwestern Minas Gerais, and was relatively rare in that location. Records from Fazenda Brejão are new.

## Specimens examined:

Fazenda Brejão, Brasil ndia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 012, 013, 038–041, 049. Fazenda N. S. Aparecida, Uberaba, approximately 3 Km from Rio Grande (19°44' S, 47°55' W) DZSJRP 11703 (560/2), 11712–11713 (560/2), 11714 (764/1). Frutal (20°01' S, 48°56' W) DZSJRP 14326–14327 (560/30), 14333–14334 (560/30), 14335–14338

(560/30), 14493–14494 (560/32), 14495–14502 (560/32). Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG n/n. Sete Lagoas (19°26' S, 44°11' W) USNM 391090.

*Artibeus lituratus* (Olfers, 1818)

*Artibeus lituratus* is widespread and frequently captured everywhere in the state of MG, occurring from well-conserved forests to highly disturbed and urban areas. Present records are from Eastern MG Atlantic Forest locations (Stallings 1991; Aguiar 1994; Tavares 1999; Falcão *et al.* 2003; Aguiar & Marinho-Filho 2004; 2007; Tavares *et al.*; 2007); from Eastern and Western MG Cerrado locations (Taddei 1975; Glass & Encarnação 1982; Grelle *et al.* 1997; Pedro & Taddei 1997; 1998; Stutz *et al.* 2004), from Center Northern limestone karst areas (Almeida *et al.* 2002) and from urban parks (Isaac-Júnior & Sábato 1994; Perini *et al.* 2003). *Artibeus planirostris* was captured only in near fruit trees in Fazenda Brejão, Northwestern Minas Gerais. Historical records of this species for the state of Minas Gerais can be found in Andersen (1908), Lima (1926) and Vieira (1942). Several additional localities for *Artibeus lituratus* are documented by collection vouchers (see below).

Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Betim (19°58' S, 44°11' W) UFMG n/n. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG n/n. Fazenda N. S. Aparecida, Uberaba, approximately 3 Km from Rio Grande (19°44' S, 47°55' W) DZSJRP 11702 (564/15). Manga (15°20' S, 43°40' W) MNRJ 42743. Mata do Agroceres, Mocambinho, Jaíba (15°20' S, 43°40' W) MN 42743, 43250. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n; UFMG n/n. Rio Matipó (19°33' S, 42°33' W) MZUSP 3527–3528. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field numbers) FAP 020–093. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n.

RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. Vargem Alegre (20°19' S, 44°10' W) MZUSP 299–301. Viçosa (20°45' S, 42°52' W) DZSJRP 10398 (564/1); MN 1370, 3392; ROM 58671–74, 58774–76, 70942–45, 77321, 77452–54, 78594, 78597, 78598, 91188. Viçosa (5 km from Viçosa) ROM 78595; USNM 391091–102.

*Artibeus obscurus* (Schinz, 1821)

Taddei *et al.* (1998), and Tavares *et al.* (2007) recorded this species in Eastern MG. Tavares *et al.* (2007) captured *A. obscurus* in both undisturbed forest to highly disturbed secondary Atlantic Forests in the Parque Estadual do Rio Doce.

Specimens examined:

RPPN Peti, Santa Bárbara (19°57', 43°24') UFMG n/n. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP 173–227. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n; UFMG n/n.

*CHIRODERMA* PETERS, 1860

*Chiroderma doriae* Thomas, 1891

Aguiar & Pedro (1998), Tavares (1999), Garcia *et al.* (2000), Aguiar & Marinho-Filho (2004; 2007) recorded *C. doriae* in the Eastern MG Atlantic Forests and Pedro & Taddei (1998) captured this species in the Cerrados of Western MG. Previously believed to be an Atlantic Forest endemic in Brazil (Marinho-Filho & Sazima 1998) the species occur in the Cerrado as documented in several studies (*e.g.* Pedro & Taddei 1998; Gregorin 1998). Additional historical records of *C. doriae* for MG may be found in Thomas (1891; 1893). *Chiroderma doriae* was previously considered vulnerable by IUCN (Hutson *et al.* 2001), but its global status has recently been reassessed to “least concern” as several recent records indicate the species may occupy a variety of habitats such as primary and secondary forests, small forested fragments, cultivated areas, and urban parks (see Tavares and Aguirre 2008; and references therein). Additional historical records of *C. doriae* in MG may be found in Thomas (1891; 1893).

Specimens examined:

Frutal (20°01' S, 48°56' W) DZSJRP 14478–14479 (572/3); 14484 (572/4); 14485 (572/4). Fazenda N. S. Aparecida, Uberaba, approximately 3 Km from Rio Grande (19°44' S, 47°55' W) DZSJRP 11696 (572/1); 11699 (572/1); 11701 (572/1); 11709 (572/1). Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG n/n.

*Chiroderma villosum* Peters, 1860

*Chiroderma villosum* has been recorded in relatively undisturbed and secondary forest of Atlantic Forest in Eastern MG (Tavares 1999;

Tavares *et al.* 2007); and the Cerrado of Western MG (Pedro & Taddei 1998).

Specimens examined:

Frutal (20°01' S, 48°56' W) DZSJRP 14480 (576). Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG n/n, UNIDERP n/n. RPPN Miguel Feliciano Abdala, Caratinga (19°47' S, 51°57' W) DZSJRP 177–207.

*Platyrrhinus* Saussure, 1860

*Platyrrhinus incarum* (Thomas, 1912)

According to recent revisions (Velazco & Patterson, 2008), the name *Platyrrhinus helleri* (Peters, 1866) should not apply to South American *Platyrrhinus*. Specimens previously named “*helleri*” were part of a complex recently split into *P. helleri* (not South American) *P. matapalensis* (to the lowlands of Pacific Andes), one undescribed species and *P. incarum* (= *Vampyrops zarhinus incarum* Thomas, 1912) for South America East of Andes (Velazco 2005; Velazco & Patterson 2008). Records of the so named *P. helleri* in MG are from a single locality (Frutal 20°01' S, 48°56' W) at the Cerrado in Western part of the state MG (Pedro & Taddei 1998). This specimen should be reanalyzed with the information provided by these recent revisionary studies.

Specimens examined:

Frutal (20°01' S, 48°56' W) DZSJRP 4486 (681).

*Platyrrhinus lineatus* (E. Geoffroy, 1810)

*Platyrrhinus lineatus* is widespread in MG, and recorded localities have been cited in several studies: Sazima & Sazima (1975), Glass & Encarnação (1982), Stallings *et al.* (1991), Grelle *et al.* (1997), Trajano & Gimenez (1998), Pedro & Taddei (1997; 1998), Tavares (1999), Almeida *et al.* (2002), Falcão *et al.* (2003), Perini *et al.* (2003), Aguiar & Marinho-Filho (2004), Stutz *et al.* (2004), Aguiar & Marinho-Filho (2007), Tavares *et al.* (2007). Additional historical records of this species in the state may be found in Pelzeln (1883) Allen (1908), and Vieira (1942).

Sazima & Sazima (1975) studied the visiting behavior of this species to *Lafoensia pacari* (Lithraceae) in Serra do Cipó National Park. In Brejão, *Platyrrhinus lineatus* occurred only in the Cerrado. Records from Fazenda Brejão are new and several vouchers in museums document the

occurrence of *C. perspicillata* in many localities within MG (see below).

Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) MCN n/n; Estação Ecológica da UFMG, Belo Horizonte (19°55' S, 43°55' W) UFMG n/n; Betim (19°58' S, 44°11' W) DZSJRP 11653–11654 (685/5). Conceição do Mato Dentro (19°01' S, 43°41' W) MN 13467. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 026, 031–033. Fazenda N. S. Aparecida, Uberaba, approximately 3 Km from Rio Grande

(19°44' S, 47°55' W) DZSJRP 11697–11698 (684/5); 11707 (684/5). Mocambinho, Jaíba (15°20' S, 43°40' W) MN 42745–42746. Pains (20°36' S, 45°66' W) USNM 391088.

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) ROM 70919–24; UFMG n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Mata do Sossego, Simonésia (20°11' S, 42°01' W) CMEC n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field numbers) FAP 026, 031–033. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Sete Lagoas (19°26' S, 44°11' W) USNM 391087. Vargem Alegre (20°19' S, 44°10' W) MZUSP 1344. Viçosa (20°45' S, 42°52' W) DZSJRP 10399 (684); 10405 (684); ROM 45696–97; 46020–21; 58780–83; 77368–69; 78451–52; 78456–67; 91185; USNM 391085–86; 391089; 541481–84.

*Platyrrhinus recifinus* (Thomas, 1901)

*Platyrrhinus recifinus* has been recorded in the Eastern Atlantic Forest of Minas Gerais (Aguiar & Marinho-Filho 2004; Tavares *et al.* 2007). Although this species was previously associated to the Atlantic Forest biome in Brazil, a record from the Cerrado of São Paulo (Gargaglioni *et al.* 1998) and records from other South American localities indicated a broader distribution (Tavares & Velazco 2010).

Although previously considered vulnerable by the IUCN the conservation status of this species was recently listed as “Least Concern” (Sampaio *et al.* 2008). In Brazil however, the MMA (2003) consider *P. recifinus* a vulnerable species.

Specimens examined:

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W)



CMEC n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field number) FAP 029.

*PYGODERMA* PETERS, 1863

*Pygoderma bilabiatum* (Wagner, 1843)

In the state of MG *P. bilabiatum* has been recorded in the Center-Eastern and Center-Northern areas including areas of transition between Atlantic Forest and Cerrado such as the RPPN Serra do Caraça (Falcão *et al.* 2003), karstic areas (Almeida *et al.* 2002) and urban parks (*e.g.* Isaac-Júnior & Sábato 1994; Perini *et al.* 2003).

An adult female was collected in a mist-net placed in a pasture in Elói Mendes, Southern MG, and a lactating female was capture in secondary forest with *Eucaliptus* in the RPPN Guilman-Amorim, Antônio Dias. In the past this species appeared to be relatively uncommon in MG, but over the last ten years it has been more often captured, and recorded in disturbed habitats, including urban parks (*e.g.* Perini *et al.* 2003).

Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. RPPN-Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field number) FAP 017. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) ROM 70910. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Viçosa (20°45' S, 42°52' W) ROM 91195.

*URODERMA* PETERS, 1866

*Uroderma bilobatum* Peters, 1866

We found a single record of *Uroderma bilobatum* in MG, collected in an Atlantic Forest fragment, the RPPN Miguel Feliciano Abdala, Caratinga, Eastern of the state.

Specimen examined:

RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) MZUSP (field number) ADD 382.

*Uroderma magnirostrum* Davis 1968

*Uroderma magnirostrum* has been recently recorded in a karst area of Northern MG (Jaíba), and in the Parque Estadual do Rio Doce, area of Atlantic Forest area in the East (Nogueira *et al.* 2003).

Nogueira *et al.* (2003) provided data about the biology, biometrics and taxonomy of this species.

Specimen examined:

Parque Estadual do Rio Doce (19°31' S, 42°32' W) UNIDERP n/n.

*VAMPYRESSA* THOMAS, 1900

*Vampyressa pusilla* (Wagner, 1843)

*Vampyressa pusilla* has been recorded in two National parks of Eastern MG, the Parque Estadual do Rio Doce, an Atlantic Forest site, and the RPPN Caraça, a transitional área between the Cerrado and the Atlantic Forest (Tavares 1999; Falcão *et al.* 2003; Tavares *et al.* 2007), and in the Lagoa Santa karst (Grelle *et al.* 1997). *Vampyressa pusilla* appears to be associated to forested, relatively undisturbed areas within Minas Gerais (E and SE), and is rare, *i.e.*, captured in low frequencies everywhere.

Specimens examined:

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UFMG (field number) VT 13. RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Peti, Santa Bárbara (19°57' S, 43°24' W) UFMG (field numbers) FAP 030, 037. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Viçosa (20°45' S, 42°52' W).

FAMILY FURIPTERIDAE

FURIPTERUS BONAPARTE, 1837

*Furipterus horrens* (F. Cuvier, 1828)

The new record of *Furipterus horrens* presented here has been obtained in the vicinities of the Parque Nacional Cavernas do Peruaçu, Northern of MG. Colonies of *F. horrens* were subsequently found in the Gruta dos Ossos cave (near Carlúcio cave, 15°05' S, 44°15' W) in the Parque Nacional Cavernas do Peruaçu. *Furipterus* has not been previously recorded in Minas Gerais.

Specimen examined:

Road between municipalities of Januária and Itacarambi, Vale do Peruaçu (15°29' S, 44°21' W) UFMG n/n.

FAMILY NATALIDAE

NATALUS GRAY, 1838

*Natalus espiritosantensis* Ruschi, 1951

*Natalus stramineus*, anteriorly considered a single taxon occurring in the Americas, Greater and Lesser Antilles has recently been restricted to Lesser Antilles (Tejedor 2006). According to the results of Tejedor (2006) and Tejedor *et al.* (2005) "*Natalus stramineus*" (*sensu* Simmons, 2005) is a

complex of at least three species occurring in the Greater Antilles, one in Central America and another one occurring South to Amazon River: *Natalus spiritossantensis*.

*Natalus spiritossantensis* has been recorded in the Northern and Center North MG karsts (Trajano & Gimenez 1998; Almeida *et al.* 2002).

Trajano & Gimenez (1998) reported on large populations of *N. spiritossantensis* in the Olhos D'Água cave, located in the vicinities of the Parque Nacional Cavernas do Peruaçu, and provided biological data for this species within this particular cave, and in Brazilian caves overall. The Agricultural Institute of MG (IMA) staff collected additional specimens from Curvelo during a vampire control session in front of a cave.

Specimen examined:

Curvelo (19°49' S, 43°57' W) UFMG n/n.

#### FAMILY MOLOSSIDAE

##### *CYNOMOPS* THOMAS, 1920

##### *Cynomops abrasus* (Temminck, 1827)

Pedro & Taddei (1997) recorded *C. abrasus* in the Cerrados of Western MG. The species also occurs in Lavras, Southern MG.

Specimens examined:

Lavras (21°07' S, 44°56' W) UFLA 20058.

##### *Cynomops planirostris* (Peters, 1866)

Pedro & Taddei (1997) recorded *C. planirostris* in the Cerrados of Western MG.

##### *EUMOPS* MILLER, 1906

##### *Eumops auripendulus* (Shaw, 1800)

Stutz *et al.* (2004) recorded *E. auripendulus* in the Cerrados of Western MG, and Eger (1974) reported a record from Southeastern Minas Gerais. We included in the specimens list below a single specimen housed at the MN from Carinhanha, state of Bahia because this locality is right in the border of N frontier BA/MG therefore in Northern MG (see also *Eumops bonariensis*).

Specimens examined:

Lagoa Santa (19°38' S, 43°53' W) MN 6531. Lavras (21°07' S, 44°56' W) UFLA 4042.

Lima Duarte (21°53' S, 43°42' W) MZUSP n/n. Pirapora (17°21' S, 44°57' W) MZUSP 5816. Sítio do Mato, Santana do Sobradinho, Carinhanha (14°18' S, 43°45' W) MN 3562.

##### *Eumops bonariensis* (Peters, 1874)

Stutz *et al.* (2004) captured *Eumops bonariensis* in the Cerrado of Western MG. As in the case for *Eumops auripendulus*, we included the locality of Carinhanha that pertains to Bahia state ("Sítio do Mato, Santana do Sobradinho") since this locality is located right in the frontier North of MG.

Specimen examined:

Sítio do Mato, Santana do Sobradinho, Carinhanha (14°18' S, 43°45' W) MN 3736.

##### *Eumops glaucinus* (Wagner, 1843)

Pedro & Taddei (1998) and Stutz *et al.* (2004) report *E. glaucinus* to the Western cerrados of MG, and we examined one specimen from Viçosa, located in the South of the state.

Specimen examined:

Silvestre, Viçosa (20°45' S, 42°52' W) USNM 391180.

##### *Eumops perotis* (Schinz, 1821)

Falcão *et al.* (2003) recorded *E. perotis* to the RPPN Serra do Caraça, Catas Altas in Center Eastern MG and Stutz *et al.* (2004) for the Western MG.

Specimens examined:

Lagoa Santa (19°06' S, 43°09' W) MN 6644–6650; 47112. Lavras (21°07' S, 44°56' W) UFLA 1048; 4039; 4080; 4092; 4100; 20201. Mariana (20°22' S, 43°24' W) MZUSP n/n.

RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n.

##### *MOLOSSOPS* PETERS, 1866

##### *Molossops temminckii* (Burmeister, 1854)

Pedro & Taddei (1997; 1998) recorded *M. temminckii* in the Cerrado of Western MG, and we found records for the North and East of the state in collections, and the records from Fazenda Brejão are new.

Specimens examined:

Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG (field numbers) FAP 58–59. Lagoa Santa (19°06' S, 43°09' W) MN 6505.

##### *MOLOSSUS* É. GEOFFROY, 1805

##### *Molossus currentium* Thomas, 1901

*Molossus currentium* has been recorded in the N of MG, in the localities of Jaíba and Manga.

## Specimens examined:

Mocambinho, Jaíba (15°20' S, 43°40' W) MN 47079–47082. Manga (15°20' S, 43°40' W) MN 47090.

*Molossus molossus* (Pallas, 1766)

*Molossus molossus* is a common bat in urban environments of Minas Gerais, forming large colonies, and often roosting in artificial roosts such as human habitations. It has been recorded in the East (Grelle *et al.* 1997; Falcão *et al.* 2003), West (Pedro & Taddei 1998; Stutz *et al.* 2004), and Center-North of MG (Perini *et al.* 2003). We found additional documented records from Northern and Southern MG in collections.

## Specimens examined:

Curvelo (19°49' S, 43°57' W) UFMG n/n. Prédio de Silvicultura, Viçosa (20°45' S, 42°52' W) USNM ROM 58699–700. Sete Lagoas (19°04' S, 44°03' W) USNM 391162–79, 541488–90; 391157–61. Sítio do Mato, Santana do Sobradinho, Carinhanha (14°18' S, 43°45' W) MN 3601. Viçosa (20°45' S, 42°52' W) ROM 58691–98; 70884–901; 70946–48; 77361; 77363–65; 77367; 77409–11; 78345–78346; 83942; USNM 541488; 541489; 541490.

*Molossus rufus* E. Geoffroy, 1805

*Molossus rufus* has been recorded in Carinhanha (BA), North limit of MG (Vieira 1942) and in Western MG (Pedro & Taddei 1998; Stutz *et al.* 2004), and there are additional records from Northern and Southern MG in collections.

## Specimens examined:

Manga (15°20' S, 43°40' W) MNRJ 28863–280, 869, 47083–47089. Mocambinho, Jaíba (15°20' S, 43°40' W) MN 47074–47078. Sítio do Mato, Santana do Sobradinho, Carinhanha (14°18' S, 43°45' W) MN 3601–3602. Viçosa (20°45' S, 42°52' W) ROM 91251; 58683–90; 70940–41; 78161; 83943; USNM 391147–56, 541487.

*NYCTINOMOPS* MILLER, 1902*Nyctinomops aurispinosus* (Peale, 1848)

*Nyctinomops aurispinosus* is known from a single locality in Southern MG, in the municipality of Lavras, Southern MG.

## Specimen examined:

Lavras (21°07' S, 44°56' W) UFLA 4049.

*Nyctinomops laticaudatus* (E. Geoffroy, 1805)

Pedro & Taddei (1998) and Stutz *et al.* (2004) recorded *N. laticaudatus* in Western MG, and Perini *et al.* (2003) have registered the species in Belo Horizonte. Other records found in collections document the species for Eastern and Center regions of MG.

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Curvelo (19°49' S, 43°57' W) UFMG n/n. RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP 206–219. Sete Lagoas, 2 km S of (19°26' S, 44°11' W) USNM 391145. Sete Lagoas, 3 mi ESE (19°04' S, 44°03' W) USNM 391146.

*Nyctinomops macrotis* (Gray, 1840).

*Nyctinomops macrotis* is cited for MG by Lima (1926), Vieira (1942) and Stutz *et al.* (2004) and we found collection records from Center-Eastern and Southern regions of the state.

## Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) MCN n/n. Lavras (21°07' S, 44°56' W) UFLA 3973. Mariana (20°22' S, 43°24' W) MZUSP 1750.

*PROMOPS* GERVAIS, 1856*Promops nasutus* (Spix, 1823)

The single record available for *P. nasutus* within MG state is in the West (Stutz *et al.*, 2004).

*TADARIDA* RAFINESQUE, 1814*Tadarida brasiliensis* (I. Geoffroy, 1824)

*Tadarida brasiliensis* has been recorded in the Eastern MG (*e.g.* Falcão *et al.* 2003), Western (Stutz *et al.* 2004), in the city of Belo Horizonte (Perini *et al.* 2003). Records from RPPN Guilman-Amorim are new, and there is material from Viçosa (Southern MG) available in collections.

## Specimens examined:

RPPN Guilman-Amorim, Antônio Dias (19°75' S, 43°05' W) CMEC n/n. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Viçosa (20°45' S, 42°52' W) ROM 58706; 67138; USNM 39114.

## FAMILY VESPERTILIONIDAE

## TRIBE EPTESICINAE

*EPTESICUS* RAFINESQUE, 1820*Eptesicus brasiliensis* (Desmarest, 1819)

*Eptesicus brasiliensis* have been recorded in MG by Isaac-Júnior & Sábato (1994) and Perini *et al.* (2003) in urban parks of the city of Belo Horizonte, by Almeida *et al.* (2002) for Center-Northern MG karst of Curvelo, and by Falcão *et al.* (2003) for the Caraça National Park, Eastern MG. There is also material from Northern, Southern, and Eastern MG available in collections, and new records from Fazenda Brejão listed in the species account. Additional historical citations and records can be found in Lima (1926) and Vieira (1942).

Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Fazenda Brejão, Brasilândia de Minas (17°02' S, 45°50' W) UFMG n/n. Fazenda Taveira, Mariana (20°22' S, 43°24' W) MN 3297. Jaíba (15°20' S, 43°40' W) MN 29027. Mariana (20°22' S, 43°24' W) MZUSP 1747. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) MZUSP 5831. RPPN Serra do Caraça, Catas Altas (20°05' S, 43°29' W) MCN n/n. Viçosa (20°45' S, 42°52' W) ROM 78179, 78181–88, 91227.

*Eptesicus diminutus* Osgood, 1915

Pedro & Taddei (1997; 1998) and Stutz *et al.* (2004) recorded *E. diminutus* for the Western Cerrado areas within MG, and Aguiar & Marinho-Filho (2004) for the MG Eastern Atlantic Forest. We also list new records from RPPN Miguel Feliciano Abdalla below.

Specimens examined:

RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) DZSJRP (field numbers) 024, 152.

*Eptesicus furinalis* (d'Orbigny, 1847)

A single the record of *E. furinalis* has been recorded for the Cerrados of Western MG (Pedro & Taddei, 1997), but this species also occurs in the Southwestern MG karst of Pains, and in the South/Southeastern Atlantic Forest in Viçosa and Mariana.

Specimens examined:

Mariana (20°22' S, 43°24' W) MZUSP 1746. Pains (20°04' S, 45°07' W) USNM 391141. Viçosa (20°45' S, 42°52' W) USNM 541485.

TRIBE VESPERTILIONINI

*HISTIOTUS* GERVAIS, 1856

*Histiopus velatus* (I. Geoffroy, 1824)

Few records of *H. velatus* are available for MG, obtained in urban and peri-urban areas at both East and Center/South regions of the state (Vieira 1942; Tavares 1999; Camara *et al.* 1999; Perini *et al.* 2003). However there is material available in collections for Atlantic Forest locations in the East, South and Southeastern and for the Jequitinhonha Valley, dry Northeastern of MG.

Specimens examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Divinópolis (20°08' S, 44°53' W) DZSJRP 12484–12491 (730). Itinga, Santana do Araçuaí (18°48' S, 41°25' W) MZUSP n/n. Lagoa Santa (19°38' S, 43°53' W) MN 6516. Mariana (20°22' S, 43°24' W) MZUSP 5789. Pouso Alegre (22°14' S, 45°57' W) MZUSP 6559–6560. Silvestre, Viçosa (20°45' S, 42°52' W) ROM 58682. Vargem Alegre (20°19' S, 44°10' W) MZUSP 15349; 1390. Viçosa (20°45' S, 42°52' W) DZSJRP 10400–10403 (730); ROM 58733–35, 70912–18, 70949–50, 77371, 77419, 77420–23, 78362–63, 91231, USNM 548683–84.

TRIBE LASIURINI

*LASIURUS* GRAY, 1831

*Lasiurus blossevilli* (Lesson & Garnot, 1826)

Specimens of *Lasiurus blossevilli* are frequently labeled "*Lasiurus borealis*" in collections, which is actually a valid name to be applied to the species occurring in the Eastern North America and Bermuda (Baker *et al.* 1988; Morales & Bickham 1995).

*Lasiurus blossevilli* has been recorded in the Atlantic Forest, and in the Atlantic Forest/Cerrado transition in Eastern MG (Lima 1926; Vieira 1942; 1955; Falcão *et al.* 2003), and in the Cerrados of Western MG (Pedro & Taddei 1998). Additionally there are records in collections from de city of Belo Horizonte, and the Atlantic Forest from the South of MG.

Specimens examined:

Parque das Mangabeiras, Belo Horizonte (19°55' S, 43°55' W) MCN n/n. Vargem Alegre (20°19' S, 44°10' W) MZUSP 1319. Viçosa (20°45' S, 42°52' W) ROM 76323; USNM 391143.

*Lasiurus cinereus* (Palisot de Beauvois, 1796)

Pedro & Taddei (1998) and Stutz *et al.* (2004) collected *L. cinereus* in the Cerrado of Triângulo Mineiro, Western MG, and Perini *et al.* (2003) found an individual in Belo Horizonte city. The new record from Belo Horizonte was obtained

while the individual was roosting inside a dog's house.

Specimen examined:

Belo Horizonte (19°55' S, 43°55' W) UFMG n/n.

*Lasiurus ega* (Gervais, 1856)

Glass & Encarnação (1982), and Stutz *et al.* (2004) recorded *L. ega* in the Cerrados of Western MG, including peri-urban areas. We additionally found museum records from South, Southeast and Center North MG Atlantic Forest.

Specimens examined:

Lagoa Santa (19°06' S, 43°09' W) MN 6529. Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) ROM 78240. Viçosa (20°45' S, 42°52' W) USNM 541486.

SUBFAMILY MYOTINAE

*Myotis* KAUP, 1829

The taxonomy of Neotropical *Myotis* is ambiguous and species may be confused in the field leading to an incomplete picture of the diversity and distribution of this taxon. At the time we examined the specimens of *Myotis* from MG in the collections visited, the identification of many was inconclusive for us, including a *Myotis* aff. *levis* from Viçosa (SE MG), four *Myotis* aff. *nigricans* (from Jaíba, N, Pains, SW, Viçosa, SE, and Ouro Preto, CS MG), a *Myotis* aff. *riparius* from Viçosa (SE MG), a *Myotis* sp. from Caratinga (E MG), and another from Uberlândia (W MG), among others.

*Myotis albescens* (E. Geoffroy, 1806)

Tavares & Anciães (1998) collected *M. albescens* in the PE Rio Doce, Eastern MG.

Individuals of *M. albescens*, *R. naso*, and *M. macrophyllum* shared the space under palafita houses built over lakes in the Rio Doce state park (Tavares & Anciães 1998).

Specimen examined:

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) UNIDERP n/n.

*Myotis levis* (I. Geoffroy, 1824)

*Myotis levis* has been reported to occur in MG by Bergallo *et al.* (2003) and there is voucher material of this species for Center-Eastern transitional area between Cerrado and Atlantic Forest (Mariana) and Southern Atlantic Forest of MG (Viçosa). However, the specimen from Viçosa

deposited at ROM overlaps some characters with *M. keaysi*, leading to ambiguity in its identification.

Specimens examined:

Mariana (20°22' S, 43°24' W) MZUSP 1748. Viçosa (20°45' S, 42°52' W) ROM 91214.

*Myotis nigricans* (Schinz, 1821)

*Myotis nigricans* is widespread and in MG and has been recorded in all biomes except the Caatinga (*e.g.* La Val 1973; Glass & Encarnação 1982; Stallings *et al.* 1990; Grelle *et al.* 1997; Tavares 1999; Falcão *et al.* 2003; Pedro & Taddei 1998; Stutz *et al.* 2004; Almeida *et al.* 2002; Perini *et al.* 2003). Several museum specimens document the distribution of *M. nigricans* in the state of MG, but identification was uncertain for some, which we list below under [*Myotis* aff. *nigricans*].

Specimens examined:

Alfenas (21°25' S, 45°56' W) DZSJRP 14893 (753/2). Belo Horizonte (19°55' S, 43°55' W) UFMG n/n. Parque Estadual do Itacolomi, Ouro Preto (20°23' S, 43°30' W) MZUSP (field number) ADD 384. RPPN Serra do Caraça (20°05' S, 43°29' W) MZ 13 and 14; MCN n/n. Sete Lagoas (19°26' S, 44°11' W) USNM 391129. Viçosa (20°45' S, 42°52' W) ROM 45831–62, 77372, 78781, 78782–88, 78790, 78793, 91213.

[*Myotis* aff. *nigricans*]

Mocambinho, Jaíba (15°20' S, 43°40' W) MNRJ 42747. Ouro Preto (20°23' S, 43°30' W) MZUSP 15344–15345. Pains (20°04' S, 45°07' W) USNM 391130–31. Viçosa (20°45' S, 42°52' W) USNM 391132–37.

*Myotis riparius* Handley, 1960

*Myotis riparius* has been recorded in the Atlantic Forest domains in South and Southeastern MG (La Val 1973 and listed records), and in one locality of Cerrado in the West of MG (Uberlândia). As in the case for *M. nigricans*, identification of some specimens was uncertain and is listed under [*Myotis* aff. *riparius*].

Specimens examined:

RPPN Serra do Caraça (20°05' S, 43°29' W) MCN n/n. Viçosa (20°45' S, 42°52' W) ROM 78794–802; USNM 391137.

[*Myotis* aff. *riparius*]

RPPN Miguel Feliciano Abdalla, Caratinga (19°47' S, 51°57' W) MZUSP (field numbers) ADD 374–375. Uberlândia (18°55' S, 48°16' W)

DZSJRP 14013 (753/1). Viçosa (20°45' S, 42°52' W) ROM 78789.

*Myotis ruber* (É. Geoffroy, 1806)

Although records of *M. ruber* in MG are scarce in the literature (Lima 1926; Vieira 1942; LaVal 1973) we are aware of several additional unpublished records of this species within MG (S. Talamoni, personal communication).

This species has been considered globally “near threatened” by Bárquez & Díaz (2010) and regionally (in Brazil) threatened (MMA 2003; Fundação Biodiversitas 2007).

Specimens examined:

Mariana (20°22' S, 43°24' W) USNM 391138–40. Viçosa (20°45' S, 42°52' W) ROM 77345, 78803–805, 91211.

TRIBE NYCTICEIINI

*RHOGESSA* H. ALLEN, 1866

*Rhogessa hussoni* Genoways and Baker, 1996

A single locality, the Parque Estadual do Rio Doce in the East of MG is documented for the species *R. hussoni*.

Specimen analyzed:

Parque Estadual do Rio Doce, Marliéria (19°31' S, 42°32' W) MZUSP 24045.

## Discussion

The number of species occurring in MG (n = 77) surpassed expectations, such as those of Pedro & Taddei (1998) that predicted the occurrence of approximately 60 species in the state. The diversity of bats within MG corresponds to approximately 55% of the currently known diversity of bat species within Brazil, and to seven out of the nine families distributed in the Neotropics. This number is also high when compared to estimates for other Brazilian states, such as RJ and SP, these two also located in the Southeast Brazil and having biomes and ecosystems similar to Minas Gerais represented: according to Bergallo *et al.* (2003) at least 65 species occur in RJ and at least 63 species, according to Pedro & Taddei (1998) occur in SP.

The richness of Minas Gerais bat fauna reflects the diversity of biomes represented in MG as remarked by Drummond *et al.* (2005) for the Minas Gerais biota as a whole. Transition areas, where there is a mixture of semideciduous to deciduous forest and xeromorphic flora may contribute with a highly diverse bat fauna in the state, as the present data began to point out.

It is noteworthy that the Atlantic Forest had the larger number of exclusive species when compared with other biomes and also the higher number of species. The Atlantic Forest corresponds to 41% of the state and the Cerrado 57% (Drummond *et al.* 2005). The presence of patches of relatively well-preserved Atlantic Forest in the eastern, from smaller fragments such as RPPN Miguel Feliciano Abdalla, Caratinga to the large continuous area of Parque Estadual do Rio Doce, Marliéria may at a first analysis be considered the main sources of the high bat diversity of this biome in MG.

On the other hand, the faunal overlap provided by the transitional zone between Cerrado and Atlantic Forest that prevails in MG is another significant source of richness.

Mustrangi & Patton (1997) suggested that the Southeastern of MG is a biogeographic key area as many mammal species overlap their distribution there (*e.g.* species of *Marmosops* Matschie, 1916) resulting in high regional diversity. Unfortunately, as demonstrate by the present study, there is little data for bats in this region to allow discussions about patterns of distribution. Even in the case of the few studies with systematic sampling of bats conducted in the state, we know that bat diversity is still underestimated, and that there are bias in the bat list related to capture efforts and methodology.

According to the available data, the Cerrado and the Atlantic Forest are clearly undersampled, and the Caatinga biome is virtually unknown. The Cerrado bat fauna is also poorly known everywhere in Brazil (Fonseca & Redford 1984; Mares *et al.* 1989) and even less in MG, and may be much richer than expected (*e.g.* see the preliminary data for the area of Brejão in the Northwestern MG, and see the data for the Western MG). Although the Caatinga is by far the less studied biome in MG, the data already available point to a rich fauna for this biome, with shared elements of Cerrado and Atlantic Forest. In summary, we do not know how the different biomes and ecosystems within MG contribute to the bat diversity patterns.

Noteworthy and relatively recent records of bats within MG, which considerably extended the range of previously considered Amazonian restrict species were *Choeroniscus minor* in the Atlantic Forest (Aguar *et al.* 1995), *Lionycteris spurrelli* in the Caatinga/Cerrado transition of Northern MG (Trajano & Gimenez 1998), *Platyrrhinus incarum* in the Cerrado/Atlantic Forest (*lato sensu*) transition of Southwestern MG (Taddei & Vincente-Tranjan 1998), and *Micronycteris schmidtorum*, which prior distribution also included

the NE Brazil, recorded in the Atlantic Forest (Tavares & Taddei 2003).

Additionally, *Chiroderma doriae* (prior considered an Atlantic Forest endemic) was recorded in the Cerrado of Western MG (Pedro & Taddei 1998); *Uroderma magnirostrum* was captured in the Atlantic Forest and Caatinga of MG (Nogueira *et al.* 2003), and *Glyphonycteris sylvestris* and *Furipterus horrens* were for the first time recorded in the state. Many of these range extensions were substantial and with increasing efforts of sampling, more species will certainly have their ranges expanded.

Another fact that may contribute for the MG richness of bats is the presence of many karstic areas, which may set the ground for the establishment of populations of strict or frequent cave dweller species such as *Natalus*, *Furipterus*, and many phyllostomines. Because the karst is generally associated to patches of semideciduous forests, it makes the environment suitable for many other species in spite of the dryness of the area (*e.g.* for Caatinga areas).

Species such as *Phyllostomus discolor*, *Carollia perspicillata*, *Glossophaga soricina*, *Desmodus rotundus*, *Sturnira lilium*, *Artibeus lituratus*, *Platyrrhinus lineatus* are to be common everywhere in the state. All these bats, with the exception of *C. perspicillata*, are also frequent dwellers of urban areas of the state. Others species such as *M. molossus*, *E. brasiliensis*, and *H. velatus* also appear to be common everywhere, but data on their relative abundance is scarce and biased by the method of mistnetting bats. The same limitation of mist netting is valid for molossids in general, which had been often recorded especially by captures in their roosts in MG. Nonetheless, the amount of data available is only a starting point for analyses about the environmental constraints to the presence and abundance of species.

The uncertainty about the identity of some of our records reflects among other factors the taxonomic problems that may be generated by the lack of systematic revisions including specimens over all their range of distribution. Neotropical species of *Myotis*, for example have desperately been in need of revision for decades, a lacune that has begun to be fulfilled by new studies (R. Moratelli and C. Aires, personal communication). The same reasoning to a lesser extent may be applied to large *Artibeus* and *Molossus* and other taxa with the inclusion of specimens from localities within MG or adjacent areas previously never studied taxonomically.

Although our results are apparently a picture of a diverse state, this list is incomplete for the reasons already exposed. Additionally, the list was built with recent data and information from collections made mostly over the decades of 1960 and 1970. Most likely the diversity kept in museums does not mirror the diversity of MG today. Minas Gerais is, in conclusion, a very poorly sampled state in terms of bats, and extensive regions have not been sampled at all. The bat fauna of karstic areas that cover about 3 to 5% of the state (Piló 1999) for example, remains almost unknown as well as that of large extensions of potentially rich locations (*e.g.* along the Espinhaço mountain range).

As a way to improve our knowledge about the bat fauna of MG, we argue that bats must be included in environmental impact studies and in management plans of reserves. Also we suggest that medium to long term studies are badly needed in areas of special concern, but that any data is welcome with a special attention to the incorporation of biological series and of vouchers in Brazilian collections, and to monitoring the fauna. Particular attention should be given to the different biomes and ecosystems of the state, to access their actual diversity and then be able to trace plans for the conservation of bats in MG.

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Table 1. Species of bats recorded in Minas Gerais state, listed by regions within the state, biome domains of localities, and additional information about the habitat of capture sites when available. The habitat list reported here does not summarize all the habitats each species may occur in the state, but the ones that have been reported in publications or according to our personal observation. Taxonomy follows Simmons (2005). Biomes are Atlantic Forest (AF), Cerrado (Ce), and Caatinga (Ca), and transitional areas (e.g. Ce/Ca). Additional information about capture sites are, for the Atlantic Forest, (PF) relatively undisturbed, (SF) secondary, (DF) highly disturbed; for the Cerrado, (Cce) Campo cerrado, (GF) gallery forest, (XF) xeromorphic forest (the last two were categorized by Pedro & Taddei (1997) for the Cerrado of Western MG); (AR) artificial roost; (NR) natural roost; (HI) area under human influence (a category of Stallings *et al.* [1991]); (HH) human habitation; (KAC) karstic region, when captured inside a cave or in front of; (KA) karstic region, when there were no other specifications about the habitat; (PA) pasture; and (UE) urban environment.

Taxon	Region of MG	Biome	Habitat
<b>Emballonuridae</b>			
<i>Peropteryx kappleri</i> Peters, 1867	N	Ce/Ca	KAC
<i>Peropteryx macrotis</i> (Wagner, 1843)	N, NE, E, CS	AF, Ce/Ca	KAC, SF
<i>Rhynchonycteris naso</i> (Wied-Neuwied, 1820)	N, E, NW	AF, Ca, Ce	NR, AR, KA
<i>Saccopteryx bilineata</i> (Temminck, 1838)	E	AF	
<b>Noctilionidae</b>			
<i>Noctilio albiventris</i> Desmarest, 1818	N, W	Ca, Ce	AR, EU
<i>Noctilio leporinus</i> (Linnaeus, 1758)	E, W, SW	AF, Ce, Ce/AF	SF, UE, KA
<b>Phyllostomidae</b>			
<b>Desmodontinae</b>			
<i>Desmodus rotundus</i> (É. Geoffroy, 1810)	N, S, E, W, SE, SW, C, CS, CE	AF, Ce, Ce/Ca	KAC, KA, SF, DF, PA, UE
<i>Diaemus youngi</i> (Jentink, 1893)	W	Ce	
<i>Diphylla ecaudata</i> Spix, 1823	N, E, W, CN, CS, CE	AF, Ce, Ce/AF, Ce/Ca	KA, KAC, Cce, UE
<b>Glossophaginae</b>			
<i>Anoura caudifer</i> Gray, 1838	E, W, NW, SE, SW, CS	AF, Ce, Ca/Ce,	PF, SF, DF, AR, GF, XF, UE, KA
<i>Anoura geoffroyi</i> (É. Geoffroy, 1818)	N, E, W, SE	AF, Ce, Ca/Ce	SF, DF, XF, Cce, UE, KA
<i>Choeroniscus minor</i> (Peters, 1868)	E	AF	PF
<i>Glossophaga soricina</i> (Pallas, 1766)	N, S, E, W, NE, NW, SE, CN, CS, CW	AF, Ca, Ce, Ca/AF, Ce/Ca	KAC, PF, SF, DF, AR, GF, XF, UE
<i>Lionycteris spurrelli</i> Thomas, 1913	N	Ce/Ca	KAC
<i>Lonchophylla bokermanni</i> Sazima, Vizotto & Taddei 1978	E	Ce	
<i>Lonchophylla dekeyseri</i> Taddei, Vizotto & Sazima 1983	E	Ce	

Taxon	Region of MG	Biome	Habitat
<i>Phyllostominae</i>			
<i>Chrotopterus auritus</i> (Peters, 1856)	N, S, E, W, SW, CS	AF, Ce, Ce/Ca	KAC, KA, PF, SF
<i>Glyphonycteris sylvestris</i> Thomas, 1896	E	AF	SF
<i>Lonchorhina aurita</i> Tomes, 1863	E	AF	
<i>Lophostoma brasiliense</i> Peters, 1866	NW, SW, CS	AF, Ce, Ce/AF	AR
<i>Macrophyllum macrophyllum</i> (Schinz, 1821)	E, W	AF, Ce	AR, UE
<i>Micronycteris megalotis</i> (Gray, 1842)	E, CS	Ce, Ce/AF	
<i>Micronycteris minuta</i> (Gervais, 1856)	N, E, W, SE	AF, Ce, Ce/Ca	KAC, SF
<i>Micronycteris schmidtorum</i> Sanborn, 1935	E	AF	PF
<i>Mimon bennettii</i> (Gray, 1838)	CN, CS	Ce, Ce/AF	KA
<i>Mimon crenulatum</i> (É. Geoffroy, 1803)	E, W, NW, CW	AF, Ce	PF, SF, GF
<i>Phylloderma stenops</i> Peters, 1865	N	Ce/Ca	KAC
<i>Phyllostomus discolor</i> Wagner, 1843	N, E, W, NW, CN, CS	AF, Ce/Ca, Ce	PF, SF, DF, UE
<i>Phyllostomus hastatus</i> (Pallas, 1767)	N, E, W, NW, SE, CN, CS	AF, Ce, Ce/Ca	KAC, KA, SF, AR, UE
<i>Tonatia bidens</i> (Spix, 1823)	N, E, CN	AF, Ce, Ce/Ca	KAC, KA, PF
<i>Trachops cirrhosus</i> (Spix, 1823)	E, CN	AF, Ce	KA, HH
<i>Carollinae</i>			
<i>Carollia brevicauda</i> (Schinz, 1821)	SE	AF	
<i>Carollia perspicillata</i> (Linnaeus, 1758)	N, E, W, CN, CS	AF, Ca, Ce, Ce/Ca, Ce/AF	KAC, PF, SF, DF, GF, XF, UE
<i>Stenodermatinae</i>			
<i>Sturnira lilium</i> (É. Geoffroy, 1810)	N, S, E, W, NW, SE, CS	AF, Ca, Ce	PF, SF, DF, AR, GF, XF, UE
<i>Artibeus fimbriatus</i> Gray, 1838	E	AF	PF, SF, DF
<i>Artibeus planirostris</i> Leach, 1821	E, W, NW, CS	AF, Ce	SF, UE, GF, XF, UE
<i>Artibeus lituratus</i> (Olfers, 1818)	N, E, W, NE, CN, CS	AF, Ca, Ce, Ce/AF	KA, PF, SF, DF, AR, GF, UE
<i>Artibeus obscurus</i> (Schinz, 1821)	E	AF	PF, SF, DF
<i>Chiroderma doriae</i> Thomas, 1891	E, W	AF, Ce	SF, DF
<i>Chiroderma villosum</i> Peters, 1860	E, W	AF, Ce	PF, SF, DF, Ce, UE
<i>Platyrrhinus incarum</i> (Thomas, 1912)	W	Ce	
<i>Platyrrhinus lineatus</i> (É. Geoffroy, 1810)	N, E, W, NW, SE, SW, CN, CS	AF, Ca, Ce, Ce/AF	KA, PF, SF, DF, GF, XF, UE, HI
<i>Platyrrhinus recifinus</i> (Thomas, 1901)	E	AF	PF, DF
<i>Pygoderma bilabiatum</i> (Wagner, 1843)	S, SE, E, CN, CS	AF, Ce	KA, SF, DF, PA, UE
<i>Uroderma bilobatum</i> Peters, 1866	E	AF	SF

<i>Taxon</i>	Region of MG	Biome	Habitat
<i>Uroderma magnirostrum</i> Davis 1968	N, E	AF, Ca	KA, PF, XF
<i>Vampyressa pusilla</i> (Wagner, 1843)	E, SE	AF	KA, PF, SF
Furipteridae			
<i>Furipterus horrens</i>	N	Ce/Ca	KAC
Natalidae			
<i>Natalus espiritasantensis</i> Ruschi, 1951	N, CN	Ce/Ca, Ce	KAC, KA
Molossidae			
<i>Cynomops abrasus</i> (Temminck, 1827)	S, W	AF, Ce/AF, Ce	
<i>Cynomops planirostris</i> (Peters, 1866)	W	Ce	XF
<i>Eumops auripendulus</i> (Shaw, 1800)	N, S, W, NW, SE, CS	Ca, Ce, Ca/Ce, Ce/AF, AF	KA, UE
<i>Eumops bonariensis</i> (Peters, 1874)	N, W	Ca, Ce	UE
<i>Eumops glaucinus</i> (Wagner, 1843)	SE, W	AF, Ce	UE
<i>Eumops perotis</i> (Schinz, 1821)	S, E, W, CS	AF, Ce/AF, Ce	HH, UE
<i>Molossops temminckii</i> (Burmeister, 1854)	W, NW, CN, CS	Ce, Ce/AF	KA, XF
<i>Molossus currentium</i> Thomas, 1901	N	Ca	KA
<i>Molossus molossus</i> (Pallas, 1766)	N, E, W, SE, CN, CS	AF, Ca, Ce/AF, Ce	KA, SF, AR, UE
<i>Molossus rufus</i> É. Geoffroy, 1805	N, SE, W	AF, Ca, Ce	UE
<i>Nyctinomops aurispinosus</i> (Peale, 1848)	S	Ce/AF	
<i>Nyctinomops laticaudatus</i> (É. Geoffroy, 1805)	E, W, CN, CS	AF, Ce/AF, Ce	HH, UE, KA
<i>Nyctinomops macrotis</i> (Gray, 1840).	S, W, CS	AF, Ce/AF, Ce	UE
<i>Promops nasutus</i> (Spix, 1823)	W	Ce	UE
<i>Tadarida brasiliensis</i> (I. Geoffroy, 1824)	S, E, W, SE, CS	AF, Ce/AF, Ce	HH, UE
Vespertilionidae			
<i>Eptesicus brasiliensis</i> (Desmarest, 1819)	N, E, NW, SE, CN, CS	AF, Ca, Ce, Ce/AF	SF, DF, UE
<i>Eptesicus diminutus</i> Osgood, 1915	E, W	AF, XF	PF, DF
<i>Eptesicus furinalis</i> (d'Orbigny, 1847)	W, SE, SW, CS	AF, Ce, Ce/AF, XF	GF
<i>Histiotus velatus</i> (I. Geoffroy, 1824)	S, E, NE, SE, SW, CS	AF, Ca, Ce, Ce/AF	SF, DF, AR, UE
<i>Lasiurus blossevilli</i> (Lesson and Garnot, 1826)	E, W, SW, CS	AF, Ce/AF	SF

<i>Taxon</i>	Region of MG	Biome	Habitat
<i>Lasiurus cinereus</i> (Palisot de Beauvois, 1796)	W, CS	Ce/AF, Ce	HH, UE
<i>Lasiurus ega</i> (Gervais, 1856)	E, W, SE, CS	AF, Ce, Ce/AF	UE
<i>Myotis albescens</i> (É. Geoffroy, 1806)	E	AF	AR
<i>Myotis levis</i> (I. Geoffroy, 1824)	CS	Ce/AF	
<i>Myotis nigricans</i> (Schinz, 1821)	E, W, SE, CN, CS	AF, Ce, Ce/AF	KA, SF, AR, UE
<i>Myotis riparius</i> Handley, 1960	E, SE	AF	SF
<i>Myotis ruber</i> (É. Geoffroy, 1806)	SE, CS	AF	SF
<i>Rhogessa hussoni</i> Genoways and Baker, 1996	E	AF	