

Checklist of Brazilian bats, with comments on original records

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ABSTRACT: Lists of Brazilian bats have been compiled since the late 19th century, with remarkable variation in the criteria for species inclusion and use of nomenclature. To update the list of extant bat species that occur in Brazil, the Brazilian Bat Research Society created the Committee of the List of Brazilian Bats. Here we report the first result of the work of this Committee: a list with nine families, 68 genera, and 178 species with documented occurrence in Brazil, including nomenclatural comments. We also present two additional species lists: one with doubtful records (10 species) and other with erroneous records (six species). Since the beginning of the 21st century, 35 new bat species have been recorded for Brazil, and we anticipate that more species will be uncovered over the next years.

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INTRODUCTION

At the end of the 19th century Goeldi (1893) published the first list of Brazilian mammals, including 40 species of bats. About half a century later, C.O.C. Vieira recorded, respectively, 98 and 105 species of bats in his monographs *Ensaio Monográfico sobre os Quirópteros do Brasil* (Vieira 1942) and *Lista Remissiva dos Mamíferos do Brasil* (Vieira 1955), already including representatives of the nine bat families currently recognized as occurring in Brazil. New bat species lists for the whole country were only much later published, in the 1990s (Aguiar and Taddei 1995; Fonseca *et al.* 1996, Taddei 1996; Marinho-Filho and Sazima 1998), but several studies—*e.g.*, *Catálogo de los Mamíferos de América del Sur* (Cabrera 1958), *Chave para determinação de quirópteros brasileiros* (Vizotto and Taddei 1973), *Biogeography of the bats of South America* (Koopman 1982), and book chapters on Chiroptera in *Mammal Species of the World* (Honacki *et al.* 1982; Koopman 1993) and *Mammals of the World* (Walker *et al.* 1964)—provided updates to the Vieira's (1942, 1955) lists. Among them, Cabrera's Catalogue (1958) stands out as the most influential 20th century contribution on the taxonomy and nomenclature of South American mammals, having served as background for several subsequent studies in the subject.

In 1995, a team of 14 scientists from several Brazilian institutions met in a workshop in Santa Teresa, State of Espírito Santo, to compile a new list of Brazilian bats and define their conservation status (Aguiar and Taddei 1995). The group recognized 138 Brazilian species, far surpassing Vieira's (1955) list. Subsequently, Fonseca *et al.* (1996;

first edition of *Lista anotada dos mamíferos do Brasil*) and Taddei (1996) updated the list, recording 141 and 144 species, respectively, but Marinho-Filho and Sazima (1998) reported a number (137) close to that reported by Aguiar and Taddei (1995).

Tavares *et al.* (2008) reported 165 species in a manuscript accepted as part of a book expected to be published in 2003, and therefore containing listings updated to that year. The list of Tavares *et al.* (2008) contrasted from the previously cited because they provided references for each species recorded for Brazil, along with distributional notes and taxonomic and nomenclatural comments. Peracchi *et al.* (2006; *Mamíferos do Brasil*) later prepared another update, with 164 species recorded, and Reis *et al.* (2007; *Morcegos do Brasil*) reported 167 species of bats. Afterwards, two lists by Peracchi and colleagues (Peracchi *et al.* 2010 [*Mamíferos do Brasil: Guia de Identificação*], 2011a [second edition of *Mamíferos do Brasil*]) reported 168 and 172 Brazilian bat species, respectively. The last updated list before the present was Paglia *et al.* (2012), which reported 174 bat species in the second edition of *Lista Anotada dos Mamíferos do Brasil*.

In April 2011, a general assembly of the Brazilian Bat Research Society (Sociedade Brasileira para o Estudo de Quirópteros—Sbeq; <http://www.sbeq.net/>) created the Committee of the List of Brazilian Bats (Comitê da Lista de Morcegos do Brasil—CLMB). This standing Committee is in charge for the regular publication of a list of bats with occurrence in Brazil, and for a continual revision of its scope and methodology. The first committee's workgroup was composed by the lead author M.R. Nogueira [Chair], I.P.

Lima, and A.L. Peracchi, which compiled the information, defined the methodology, prepared the first draft of the list, and invited the other members. Subsequently, all authors reviewed the methods and the list, worked on some nomenclatural inconsistencies, and redraft parts of the manuscript. R. Gregorin also added one personal record to the final list. We expect the list to be useful to the scientific community, government agencies, and non-governmental organizations to support conservation strategies at national and regional scales.

MATERIALS AND METHODS

The checklist of Brazilian bats presented here is based exclusively on formal records. As defined by the Committee, formal records are those available through peer-reviewed articles and short communications published in scientific journals and books, therefore excluding B.Sc. and M.Sc. thesis, Ph.D. dissertations, abstracts and proceedings of meetings, even those published in scientific journals (*e.g.*, *Histiotus macrotus*, Pol *et al.* 1998:124; first record for Brazil [published in the Bat Research News as an abstract of a presentation at the 11th International Bat Research Conference]). In the cases of records associated with nomenclatural acts (including descriptions of new taxa, revalidation, and synonyms), only publications attending the mandatory provisions of the International Code of Zoological Nomenclature (ICZN 1999) and its amendments (ICZN 2012) were incorporated.

During the composition of the list, each formal record was evaluated, and those rejected were grouped into two categories: doubtful or erroneous records. Criteria for the doubtful record categorization were: (i) record not supported by voucher(s) in biological collections, (ii) species with uncertain taxonomic status, and (iii) species whose occurrence in Brazil is pending confirmation after taxonomic reassessments (including cases where Brazilian representatives were not assessed, with identities pending confirmation). Erroneous records are related to taxa for which the evidence supporting their occurrence in Brazil was consistently refuted, generally through re-examination of the material related to the record.

To enter the list, each formal record had to be supported by at least one reference and one voucher deposited at a museum collection. We aimed at reporting the first record of each species for Brazil, which in most cases coincided with original descriptions (47% of the cases) or descriptions of names currently under synonymy (12%). We followed authors in Gardner (2008) for synonymies, and commented on propositions published afterward that resulted in additions to the list. Although the decision about the inclusion of any particular record is a prerogative of the CLMB, the Committee is open to suggestions from the scientific community (contact: sbeq.contato@gmail.com).

Gardner (2008) was the point of departure for the taxonomic arrangement, nomenclature, and order of citations of taxa. Divergences are mainly based on new evidences on higher taxa relationships, and due to spelling corrections and new interpretations on authorship. Phyllostomid and emballonurid bats were arranged into subfamilies according to Baker *et al.* (2003) and Lim *et al.* (2008b), respectively. Because two subfamily names used here were proposed by Baker *et al.* (2003) without

a formal description or definition of their differentiation characters, they are not valid under the ICZN (1999; Art 13.1.1), and are cited enclosed in quotation marks (see also Solari and Martínez-Arias 2014). We ranked *Dermanura* at the genus level (Hooper *et al.* (2008:9) and recognized *Dermanura bogotensis* (Lim *et al.* 2008a), *Platyrrhinus incarum* (Velazco *et al.* 2010), *Histiotus alienus*, and *H. laeophotis* (Barquez and Díaz 2001; Simmons 2005) at the species level. We treated populations of *Natalus* south of the Amazon River as *Natalus macrourus* replacing the names *N. stramineus* or *N. espiritosantensis* for those populations (Garbino and Tejedor 2012). Finally, for the attribution of authorship and date of species descriptions, we disagree from Gardner (2008) in the cases of *Peropteryx leucoptera*, *Glyphonycteris sylvestris*, *Mesophylla macconnelli*, *Micronycteris schmidtorum*, *Phylloderma stenops*, *Trinycteris nicefori*, *Lasiurus blossevillii*, and *Nyctinomops macrotis* (see notes on Table 1). Two genera and seven species included here were described after Gardner (2008).

Each record in our main list (formal valid records) that is not related to type material is accompanied by a number of a voucher specimen. We primarily used numbers from specimens cited in the original references (obtained directly from the publication or from the collection where the specimen was deposited), but when these numbers were not available, we used material examined by us. The following acronyms are used in the text: ALP (Coleção Adriano Lúcio Peracchi, Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro), AMNH (American Museum of Natural History, New York), BMNH (Natural History Museum, London), CCZ (Centro para o Controle de Zoonoses, São Paulo, São Paulo), CM (Carnegie Museum of Natural History, Pittsburgh), CMUFLA (Coleção de Mamíferos da Universidade Federal de Lavras, Lavras), CMUFV (Coleção de Mamíferos da Universidade Federal de Viçosa, Viçosa), DZUP (Coleção Científica de Mastozoologia do Departamento de Zoologia da Universidade Federal do Paraná, Curitiba), FMNH (Field Museum of Natural History, Chicago), IEPA (Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá, Macapá), INPA (Instituto Nacional de Pesquisas da Amazônia, Manaus), LDM (Laboratório de Diversidade de Mamíferos, Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro), MCN (Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre), MN (Museu Nacional, Rio de Janeiro), MZUSP (Museu de Zoologia da Universidade de São Paulo, São Paulo), RNH (Rijksmuseum van Natuurlijke Historie, Leiden), ROM (Royal Ontario Museum, Ontario), UFMG (Universidade Federal de Minas Gerais, Belo Horizonte), UNIDERP (Universidade para o Desenvolvimento do Estado e da Região do Pantanal, Campo Grande), and USNM (National Museum of Natural History, Washington, D.C.).

RESULTS

A total of nine families, 68 genera, and 178 extant bat species occur in Brazil (Table 1), including *Platyrrhinus angustirostris*, which is a new record for the country. Two genera and 10 species are Brazilian endemics: *Dryadonycteris* and *Xeronycteris*; *Micronycteris sanborni*, *Dryadonycteris capixaba*, *Lonchophylla bokermanni*,

L. peracchii, *Xeronycteris vieirai*, *Chiroderma vizottoi*, *Platyrrhinus recifinus*, *Eptesicus taddeii*, *Lasiurus ebenus*, and *Myotis izecksohni*. Sources for the valid records supporting the present list comprised the work of 104 authors distributed in 117 publications (Table 1). Among the 178 bat species listed from Brazil, 85 were first assigned based on their original descriptions (78 with type localities in Brazil) or descriptions of subspecies, 77 were reported under currently valid species names in publications subsequent to their original descriptions, and 16 were first recognized as occurring in Brazil based on nomenclatural acts (e.g., recognition of *Lasiurus enslenii* as a junior synonym of *L. salinae*).

Oldfield Thomas and Johann A. Wagner stand out as the main contributors to the list of Brazilian bats, with respectively 12 and 7 species described based on material collected in Brazil. Regarding records available in publications other than original descriptions, Thomas reported 16 species and Wagner 12. The number of original species descriptions based on Brazilian types (or at least including Brazilian specimens) that add new records for Brazil has declined over the centuries, but is still remarkable. Considering all species listed as occurring in Brazil up to the 19th century, 69% were original species descriptions, a proportion that dropped to 35% in the 20th century and 29% in the 21st century. During the 19th and 20th centuries, similar numbers of new occurrences were recorded for Brazil (72 and 71 species, respectively). In contrast, just in the beginning of the 21st century, 35 new species occurrences were recorded, indicating that a substantial growth in the list of Brazilian bats can still be expected (Figure 1). Approximately two new bat species to the Brazilian fauna have been reported per year in the past two decades.

Considering formal publications, we reached a total of 194 species records for Brazil. Among the 16 species excluded from this total, 10 were recognized as doubtful records (Table 2) and six as erroneous records (Table 3). The list of doubtful taxa includes one species whose taxonomic status is uncertain (*Myotis alter*), and two species whose distribution, after revision, seems not to include Brazil (*Carollia castanea* and *Platyrrhinus helleri*). All other species included in this list were recorded without an explicit reference to voucher material. From the six records considered erroneous (Table 3), five are based on specimens for which we accepted identifications different than those used in the publication assigning these species to Brazil. *Enchisthenes hartii* is the only exception in this case, as explained in the note 2 on Table 3.

DISCUSSION

The number of taxa reported here for the Brazilian bat fauna is close to those reported in the most recent lists (67 genera/172 species in Peracchi *et al.* [2011a]; 65/174 in Paglia *et al.* [2012]), but there are substantial qualitative differences. The criteria used here for the recognition of valid records (e.g., voucher material available in biological collections) led to the exclusion of several taxa, possibly counteracting an expected increase since the edition of the last list was finished. Considering the 21st century, however, we highlighted an increase in number of species records not seen since the first half of the 19th century, when European naturalists worked intensively on material collected in Brazil (Hershkovitz 1987). This recent increase in confirmed species from Brazil can be attributed to taxonomic revisions (e.g., Moratelli *et al.* 2011a), to fieldwork conducted in poorly sampled regions (e.g., Castro *et al.* 2012), and to intensive systematic work in

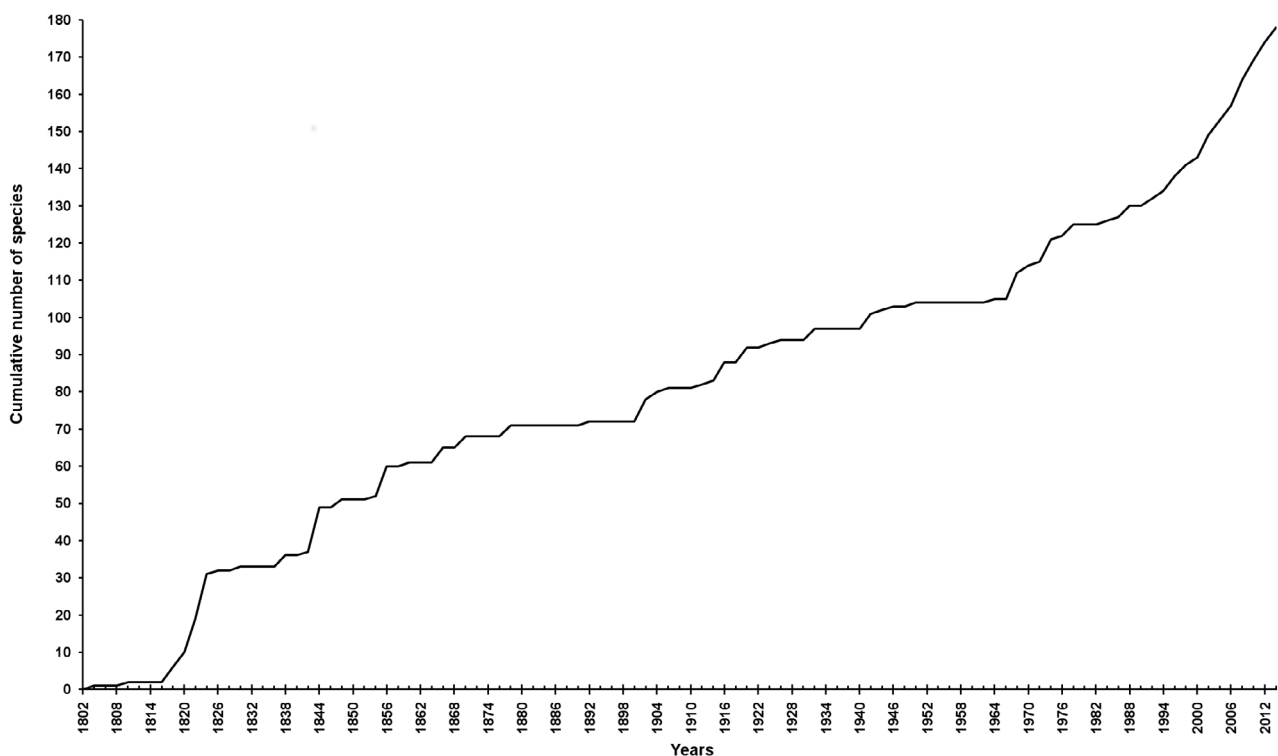


FIGURE 1. Cumulative records of bat species for Brazil since 1803. Only records considered valid by the Committee of the List of Brazilian Bats (Table 1) were included. Note the rapid increase in the first half of the 19th century and in the past 20 years.

material collected in well-sampled localities (e.g., Nogueira et al. 2012). Indeed the increment in the number of trained taxonomists in Brazil, has resulted in multiple taxonomic revisions, description of new species, and addition of new records due to the more accurate identifications. Nonetheless, because several Neotropical bat genera require revision (Gardner 2008), and sampling gaps can be found throughout the Brazilian territory (Bernard et al. 2011), we predict a steady and positive growth in the number of bat species with known distribution to the Brazilian territory in the near future.

Brazil is the largest South American country, with most of its geographical area within the tropics, where mammalian diversity is higher (Voss and Emmons 1996). Surprisingly, the number of bat species occurring in Brazil is only slightly higher than that recorded for other South American countries, such as Ecuador ($n=164$; Albuja 2011), Peru ($n=165$; Pacheco et al. 2009), and Venezuela ($n=165$; Sánchez and Lew 2012), and lower than the number of bat species documented for Colombia ($n=187$, Solari et al. 2013). A similar pattern is observed when levels of endemism are considered. Although Marinho-Filho and Sazima (1998) reported 19 endemic species for Brazil (14% of the bat fauna recorded in that time), most of these bats occur in other countries, and nowadays only 10 species can be recognized as endemic (Table 1). The rate of Brazilian bat endemism (5%) is, therefore, higher than that recorded for Venezuela (2.4%; Sánchez and Lew 2012) and Colombia (2.6%; Alberico et al. 2000; Mantilla-Meluk et al. 2009; Solari et al. 2013), but still close to that found in Peru (4.2%; Pacheco et al. 2009). These data are suggestive of hidden bat diversity still to be discovered in Brazil. More interestingly, in sharp contrast to the suggestion

of Marinho-Filho and Sazima (1998) that almost 60% of the Brazilian bat endemics were restricted to Amazonia, all species currently considered endemic to Brazil occur exclusively in the Atlantic Forest (*Dryadonycteris capixaba*, *Lonchophylla peracchii*, *Eptesicus taddeii*, *Lasiurus ebenus*, and *Myotis izecksohni*), Cerrado (*Lonchophylla bokermanni*) and Caatinga biomes (*Xeronycteris vieirai* and *Chiroderma vizottoi*), or are found in the Atlantic Forest and Cerrado (*Platyrrhinus recifinus*; see Velazco and Lim 2014) or in the Cerrado and Caatinga (*Micronycteris sanborni*—we did not recognize the recent record of this species for Amazonia [López-Baucells et al. 2014], due to the absence of voucher material). This change is of particular importance if we consider that, in relation to Amazonia, these biomes had a much larger proportion of their original areas converted into anthropic landscapes (MMA 2007) and present a much smaller proportion of protected forests (Gurgel et al. 2009). The Atlantic Forest and the Caatinga are now also known to harbor genus-level bat endemisms (Gregorin and Ditchfield 2005; Nogueira et al. 2012), highlighting the importance of their long-term conservation.

Significant changes presented here in relation to previous species lists for bats in Brazil were only possible because voucher specimens were available to scientists, allowing reassessments of primary taxonomic identifications. The deposit of vouchers should be mandatory for bat diversity assessments, but it is often neglected in Brazil. Only with robust biological collections, adequately represented by different taxa and geographical coverage, we can fully understand any taxonomic group, constructing reliable species lists, and taking consistent actions in conservation (Zaher and Young 2003).

TABLE 1. List of the bat species in Brazil, with references (first record in the literature) and collection numbers (except for type material). This list includes records considered valid by the Committee of the List of Brazilian Bats (see Materials and Methods for criteria). When not available in the references, voucher numbers were obtained from queries to collection staff (single dagger) or a new specimen was assigned based on our own observations (double dagger). Species with type locality in Brazil are assigned an asterisk and those with original description including Brazilian specimens, but type locality outside of Brazil, are assigned two asterisks. Species endemic to Brazil are assigned a star.

TAXON	SOURCE	COLLECTION NUMBER
Order Chiroptera (9 families, 68 genera, 178 species)		
Family Emballonuridae (7 genera, 17 species)		
Subfamily Emballonurinae		
<i>Centronycteris maximiliani</i> (Fischer, 1829)	*	
<i>Cormura brevirostris</i> (Wagner, 1843)	*	
<i>Cyttarops alecto</i> Thomas, 1913	*	
<i>Diclidurus albus</i> Wied-Neuwied, 1820 ¹	*	
<i>Diclidurus ingens</i> Hernández-Camacho, 1955 ²	Bernard and Fenton (2002)	INPA 3964 [†]
<i>Diclidurus isabella</i> (Thomas, 1920)	*	
<i>Diclidurus scutatus</i> Peters, 1869	*	
<i>Peropteryx kappleri</i> Peters, 1867	Vieira (1942)	MZUSP 1335
<i>Peropteryx leucoptera</i> Peters, 1867 ³	Thomas (1920)	ALP 9730 [‡]
<i>Peropteryx macrotis</i> (Wagner, 1843) ⁴	Schinz (1821)	ALP 6939 [‡]
<i>Peropteryx pallidoptera</i> Lim, Engstrom, Reid, Simmons, Voss & Fleck, 2010	Castro et al. (2012)	IEPA 2971
<i>Peropteryx trinitatis</i> Miller, 1899	Hood and Gardner (2008)	BMNH 93.1.9.3
<i>Rhynchonycteris naso</i> (Wied-Neuwied, 1820)	*	
<i>Saccopteryx bilineata</i> (Temminck, 1838)	Holotype of <i>E[mballonura]. insignis</i> Wagner, 1855	
<i>Saccopteryx canescens</i> Thomas, 1901	*	
<i>Saccopteryx gymnura</i> Thomas, 1901	*	
<i>Saccopteryx leptura</i> (Schreber, 1774)	Thomas (1920)	ALP 2555 [‡]
Family Phyllostomidae (43 genera, 92 species)		
Subfamily Micronycterinae		
<i>Lampronnycteris brachyotis</i> (Dobson, 1879) ⁵	Koopman (1976)	ALP 3304 [‡]

TABLE 1. Continued.

TAXON	SOURCE	COLLECTION NUMBER
<i>Micronycteris brosetti</i> Simmons & Voss, 1998	**	
<i>Micronycteris hirsuta</i> (Peters, 1869)	Pine <i>et al.</i> (1996)	ALP 3819 [‡]
<i>Micronycteris homezorum</i> Pirlot, 1967 ⁶	Bernard (2001b)	INPA 2605
<i>Micronycteris megalotis</i> (Gray, 1842)	*	
<i>Micronycteris microtis</i> Miller, 1898	Pedro <i>et al.</i> (2001)	ALP 9637 [‡]
<i>Micronycteris minuta</i> (Gervais, 1856)	*	
<i>Micronycteris sanborni</i> Simmons, 1996 ^{7*}	*	
<i>Micronycteris schmidtorum</i> Sanborn, 1935 ⁸	Ascorra <i>et al.</i> (1991a)	USNM 555703
Subfamily Desmodontinae		
<i>Desmodus rotundus</i> (É. Geoffroy, 1810)	Holotype of <i>Rhino[lo]ph[us]. ecaudatus</i> Schinz, 1821	
<i>Diaemus youngii</i> (Jentink, 1893)	Miller (1906)	USNM 140769
<i>Diphylla ecaudata</i> Spix, 1823	*	
Subfamily Lonchorhininae		
<i>Lonchorhina aurita</i> Tomes, 1863	Sanborn (1932)	ALP 8821 [‡]
<i>Lonchorhina inusitata</i> Handley & Ochoa, 1997	**	
Subfamily Phyllostominae		
<i>Chrotopterus auritus</i> (Peters, 1856)	Dobson (1878)	ALP 426 [‡]
<i>Lophostoma brasiliense</i> Peters, 1866	*	
<i>Lophostoma carrikeri</i> (J. A. Allen, 1910) ⁹	McCarthy and Handley (1987)	USNM 360803
<i>Lophostoma schulzi</i> (Genoways & Williams, 1980)	Marques-Aguiar and Oren (1987)	MZUSP 13077
<i>Lophostoma silvicola</i> d'Orbigny, 1836 ¹⁰	Wagner (1843)	ALP 6014 [‡]
<i>Macrophyllum macrophyllum</i> (Schinz, 1821)	*	
<i>Mimon bennettii</i> (Gray, 1838)	*	
<i>Mimon crenulatum</i> (É. Geoffroy, 1803)	*	
<i>Phylloderma stenops</i> (Peters, 1865) ¹¹	Handley (1967)	USNM 361532 [‡]
<i>Phyllostomus discolor</i> (Wagner, 1843)	*	
<i>Phyllostomus elongatus</i> (É. Geoffroy, 1810)	*	
<i>Phyllostomus hastatus</i> (Pallas, 1767)	Wied-Neuwied (1821)	ALP 2100 [‡]
<i>Phyllostomus latifolius</i> (Thomas, 1901) ¹²	Sampaio <i>et al.</i> (2003)	INPA 2497
<i>Tonatia bidens</i> (Spix, 1823)	*	
<i>Tonatia saurophila</i> Koopman & Williams, 1951	Williams <i>et al.</i> (1995)	USNM 361507
<i>Trachops cirrhosus</i> (Spix, 1823)	*	
<i>Vampyrum spectrum</i> (Linnaeus, 1758)	Vieira (1955)	ALP 7168 [‡]
Subfamily Glossophaginae		
<i>Anoura caudifer</i> (É. Geoffroy, 1818)	*	
<i>Anoura geoffroyi</i> Gray, 1838	*	
<i>Choeroniscus minor</i> (Peters, 1868)	Dobson (1878)	ALP 7048 [‡]
<i>Dryadonycteris capixaba</i> Nogueira, Lima, Peracchi & Simmons, 2012 [*]	*	
<i>Glossophaga commissarisi</i> Gardner, 1962 ¹³	Griffiths and Gardner (2008)	USNM 562720
<i>Glossophaga longirostris</i> Miller, 1898 ¹⁴	Webster and Handley (1986)	ROM 38939 [‡]
<i>Glossophaga soricina</i> (Pallas, 1766)	Holotype of <i>Glossophaga amplexicauda</i> Spix, 1823	
<i>Lichonycteris degener</i> Miller, 1931	*	
<i>Scleronycteris ega</i> Thomas, 1912	*	
Subfamily Lonchophyllinae		
<i>Hsunnycteris thomasi</i> (J.A. Allen, 1904) ¹⁵	Handley (1967)	ALP 7047 [‡]
<i>Lionycteris spurrelli</i> Thomas, 1913	Taddei <i>et al.</i> (1978)	MPEG 3745
<i>Lonchophylla bokermanni</i> Sazima, Vizotto & Taddei, 1978 ^{16*}	*	
<i>Lonchophylla dekeyseri</i> Taddei, Vizotto & Sazima, 1983	*	
<i>Lonchophylla mordax</i> Thomas, 1903	*	
<i>Lonchophylla peracchii</i> Dias, Esbérard & Moratelli, 2013 [*]	*	
<i>Xeronycteris vieirai</i> Gregorin & Ditchfield, 2005 [*]	*	
Subfamily Carollinae		
<i>Carollia benkeithi</i> Solari & Baker, 2006 ¹⁷	McLellan and Koopman (2008)	MPEG 21263 [‡]
<i>Carollia brevicauda</i> (Schinz, 1821)	*	
<i>Carollia perspicillata</i> (Linnaeus, 1758)	Holotype of <i>Glossophaga amplexicauda</i> É. Geoffroy, 1818	
Subfamily "Glyphonycterinae"		
<i>Glyphonycteris behnii</i> (Peters, 1865)	*	
<i>Glyphonycteris daviesi</i> (Hill, 1964) ¹⁸	Pine <i>et al.</i> (1996)	USNM 460089
<i>Glyphonycteris sylvestris</i> Thomas, 1896 ¹⁹	Handley (1967)	MPEG 3552 [‡]
<i>Neonycteris pusilla</i> (Sanborn, 1949)	*	
<i>Trinycteris nicefori</i> (Sanborn, 1949) ²⁰	Handley (1967)	USNM 361503 [‡]

TABLE 1. Continued.

TAXON	SOURCE	COLLECTION NUMBER
Subfamily "Rhinophyllinae"		
<i>Rhinophylla fischeriae</i> Carter, 1966	Piccinini (1974)	ALP 1914 [‡]
<i>Rhinophylla pumilio</i> Peters, 1865	*	
Subfamily Stenodermatinae		
<i>Ametrida centurio</i> Gray, 1847	*	
<i>Artibeus concolor</i> Peters, 1865 ²¹	Piccinini (1974)	ALP 2578 [‡]
<i>Artibeus fimbriatus</i> Gray, 1838	*	
<i>Artibeus lituratus</i> (Olfers, 1818) ²²	Holotype of <i>Phyllostomus</i> . <i>frenatus</i> Olfers, 1818	
<i>Artibeus obscurus</i> (Schinz, 1821)	*	
<i>Artibeus planirostris</i> (Spix, 1823)	*	
<i>Chiroderma doriae</i> Thomas, 1891	*	
<i>Chiroderma trinitatum</i> Goodwin, 1958	Handley (1967)	USNM 361723 [†]
<i>Chiroderma villosum</i> Peters, 1860	*	
<i>Chiroderma vizottoi</i> Taddei & Lim, 2010 [*]	*	
<i>Dermanura anderseni</i> (Osgood, 1916)	*	
<i>Dermanura bogotensis</i> (Andersen, 1906) ²³	Marques-Aguiar (2008)	AMNH 75537
<i>Dermanura cinerea</i> Gervais, 1856	*	
<i>Dermanura gnoma</i> (Handley, 1987)	**	
<i>Mesophylla macconnelli</i> Thomas, 1901 ²⁴	Handley (1967)	USNM 361726 [†]
<i>Platyrrhinus angustirostris</i> Velazco, Gardner & Patterson, 2010 ²⁵	Present study	CMUFLA 1309
<i>Platyrrhinus aurarius</i> (Handley & Ferris, 1972)	Velazco and Gardner (2009)	UFMG 3534
<i>Platyrrhinus brachycephalus</i> (Rouk & Carter, 1972)	Handley and Ferris (1972)	ALP 7016 [‡]
<i>Platyrrhinus fusciventris</i> Velazco, Gardner & Patterson, 2010	**	
<i>Platyrrhinus incarum</i> (Thomas, 1912)	Velazco et al. (2010)	USNM 554775
<i>Platyrrhinus infuscus</i> (Peters, 1880)	Holotype of <i>Vampyrops fumosus</i> Miller, 1902	
<i>Platyrrhinus lineatus</i> (É. Geoffroy, 1810)	Dobson (1878)	BMNH 50.7.8.1
<i>Platyrrhinus recifinus</i> (Thomas, 1901) [*]	*	
<i>Pygoderma bilabiatum</i> (Wagner, 1843)	*	
<i>Sphaeronycteris toxophyllum</i> Peters, 1882	Piccinini (1974)	ALP 3421 [‡]
<i>Sturnira lilium</i> (É. Geoffroy, 1810)	Gray (1842)	ALP 2107 [‡]
<i>Sturnira magna</i> de la Torre, 1966	Nogueira et al. (1999)	ALP 7122
<i>Sturnira tildae</i> de la Torre, 1959	Handley (1967)	USNM 361657
<i>Uroderma bilobatum</i> Peters, 1866	*	
<i>Uroderma magnirostrum</i> Davis, 1968	Pine et al. (1970)	USNM 393695
<i>Vampyressa pusilla</i> (Wagner, 1843)	*	
<i>Vampyressa thyone</i> Thomas, 1909	Nogueira et al. (2004)	ALP 7019 [‡]
<i>Vampyriscus bidens</i> (Dobson, 1878)	Vieira (1942)	MZUSP 4373
<i>Vampyriscus brocki</i> (Peterson, 1968) ²⁶	Voss and Emmons (1996)	USNM 549425
<i>Vampyroides caraccioli</i> (Thomas, 1889)	Thomas (1920)	ALP 2024 [‡]
Family Mormoopidae (1 genus, 3 species)		
<i>Pteronotus gymnonotus</i> (Wagner, 1843) ²⁷	*	
<i>Pteronotus parnellii</i> (Gray, 1843)	Wagner (1843)	ALP 10474 [‡]
<i>Pteronotus personatus</i> (Wagner, 1843)	*	
Family Noctilionidae (1 genus, 2 species)		
<i>Noctilio albiventris</i> Desmarest, 1818	*	
<i>Noctilio leporinus</i> (Linnaeus, 1758)	Spix (1823)	ALP 9309 [‡]
Family Furipteridae (1 genus, 1 species)		
<i>Furipterus horrens</i> (Cuvier, 1828)	Tomes (1856)	ALP 0006 [‡]
Family Thyropteridae (1 genus, 5 species)		
<i>Thyroptera devivoi</i> Gregorin, Gonçalves, Lim & Engstrom, 2006	*	
<i>Thyroptera discifera</i> (Lichtenstein & Peters, 1855)	Piccinini (1974)	MZUSP 16395 [‡]
<i>Thyroptera lavalii</i> Pine, 1993	Bernard and Fenton (2002)	INPA 3945 [†]
<i>Thyroptera tricolor</i> Spix, 1823	*	
<i>Thyroptera wynneae</i> Velazco, Gregorin, Voss & Simmons, 2014	*	
Family Natalidae (1 genus, 1 species)		
<i>Natalus macrourus</i> (Gervais, 1856) ²⁸	*	
Family Molossidae (8 genera, 29 species)		
Subfamily Molossinae		
<i>Cynomops abrasus</i> (Temminck, 1826) ²⁹	*	
<i>Cynomops greenhalli</i> Goodwin, 1958 ³⁰	Peters et al. (2002)	CM 100895
<i>Cynomops milleri</i> (Osgood, 1914) ³¹	Eger (2008)	USNM 393767
<i>Cynomops paranus</i> (Thomas, 1901)	*	

TABLE 1. Continued.

TAXON	SOURCE	COLLECTION NUMBER
<i>Cynomops planirostris</i> (Peters, 1866) ³²	McNab and Morrison (1963)	ALP 9215 [‡]
<i>Eumops auripendulus</i> (Shaw, 1800)	Wagner (1843)	ALP 512 [‡]
<i>Eumops bonariensis</i> (Peters, 1874)	Eger (1977)	AMNH 235405
<i>Eumops delticus</i> Thomas, 1923	*	
<i>Eumops glaucinus</i> (Wagner, 1843)	*	
<i>Eumops hansae</i> Sanborn, 1932	*	
<i>Eumops maurus</i> (Thomas, 1901)	Sodré et al. (2008)	CCZ 761/05
<i>Eumops patagonicus</i> Thomas, 1924	González (2003)	MCN 356
<i>Eumops perotis</i> (Schinz, 1821)	*	
<i>Eumops trumbulli</i> (Thomas, 1901)	*	
<i>Molossops neglectus</i> Williams & Genoways, 1980	Ascorra et al. (1991b)	USNM 335843
<i>Molossops temminckii</i> (Burmeister, 1854)	*	
<i>Molossus aztecus</i> Saussure, 1860	Gregorin et al. (2011)	CMUFV 399
<i>Molossus coibensis</i> J.A. Allen, 1904 ³³	Holotype of <i>Molossus cherriei</i> J.A. Allen, 1916	
<i>Molossus currentium</i> Thomas, 1901 ³⁴	Tavares et al. (2010)	MN 47079
<i>Molossus molossus</i> (Pallas, 1766)	Holotype of <i>Molossus acuticaudatus</i> Desmarest, 1820	
<i>Molossus pretiosus</i> Miller, 1902	Gregorin and Taddei (2000)	UNIDERP 399
<i>Molossus rufus</i> É. Geoffroy, 1805	Holotype of <i>Molossus ursinus</i> Spix, 1823	
<i>Neoplatymops mattogrossensis</i> (Vieira, 1942)	*	
<i>Nyctinomops aurispinosus</i> (Peale, 1848)	*	
<i>Nyctinomops laticaudatus</i> (É. Geoffroy, 1805)	Wagner (1843)	ALP 4502 [‡]
<i>Nyctinomops macrotis</i> (Gray, 1840) ³⁵	Holotype of <i>Dysopes auritus</i> Wagner, 1843	
<i>Promops centralis</i> Thomas, 1915	Nogueira et al. (1999)	ALP 7110
<i>Promops nasutus</i> (Spix, 1823)	*	
<i>Tadarida brasiliensis</i> (L. Geoffroy, 1824)	*	
Family Vespertilionidae (5 genera, 28 species)		
Subfamily Vespertilioninae		
<i>Eptesicus andinus</i> J.A. Allen, 1914	Davis (1966)	AMNH 134910
<i>Eptesicus brasiliensis</i> (Desmarest, 1819)	*	
<i>Eptesicus chiriquinus</i> Thomas, 1920	Simmons and Voss (1998)	AMNH 92251
<i>Eptesicus diminutus</i> Osgood, 1915	*	
<i>Eptesicus furinalis</i> (d'Orbigny & Gervais, 1847) ³⁶	Holotype of <i>Eptesicus chapmani</i> J.A. Allen, 1915	
<i>Eptesicus taddeii</i> Miranda, Bernardi & Passos, 2006*	*	
<i>Histiotus alienus</i> Thomas, 1916	*	
<i>Histiotus laeophotis</i> Thomas, 1916	Miranda et al. (2007)	DZUP 272
<i>Histiotus montanus</i> (Philippi & Landbeck, 1861) ³⁷	Cherem et al. (2005)	LDM 5222 [‡]
<i>Histiotus velatus</i> (L. Geoffroy, 1824)	*	
<i>Lasiurus blossevillii</i> ([Lesson, 1826]) ³⁸	Holotype of <i>Lasiurus nattereri</i> Fitzinger, 1870	
<i>Lasiurus castaneus</i> Handley, 1960 ³⁹	Sampaio et al. (2003)	INPA 2494
<i>Lasiurus cinereus</i> (Palisot de Beauvois, 1796)	Pira (1904)	ALP 9459 [‡]
<i>Lasiurus ebenus</i> Fazzolari-Corrêa, 1994*	*	
<i>Lasiurus ega</i> (Gervais, 1856)	*	
<i>Lasiurus egregius</i> (Peters, 1870)	*	
<i>Lasiurus salinae</i> Thomas, 1902 ⁴⁰	Holotype of <i>Lasiurus enslenii</i> Lima, 1926	
<i>Rhogeessa hussoni</i> Genoways & Baker, 1996	**	
<i>Rhogeessa io</i> Thomas, 1903 ⁴¹	LaVal (1973a)	FMNH 26465
Subfamily Myotinae		
<i>Myotis albescens</i> (É. Geoffroy, 1806)	Holotype of <i>Vesp[ertilio]. leucogaster</i> Schinz, 1821	
<i>Myotis dinellii</i> Thomas, 1902 ⁴²	Passos et al. (2010)	DZUP 867
<i>Myotis izecksohni</i> Moratelli, Peracchi, Dias & Oliveira, 2011*	*	
<i>Myotis lavalii</i> Moratelli, Peracchi, Dias & Oliveira, 2011	*	
<i>Myotis levis</i> (L. Geoffroy, 1824)	*	
<i>Myotis nigricans</i> (Schinz, 1821)	*	
<i>Myotis riparius</i> Handley, 1960	LaVal (1973b)	USNM 361786
<i>Myotis ruber</i> (É. Geoffroy, 1806)	Holotype of <i>Vespertilio kinnamon</i> Gervais, 1856	
<i>Myotis simus</i> Thomas, 1901 ⁴³	Holotype of <i>Myotis guaycuru</i> Proença, 1943	

¹ The original description of *Diclidurus albus* is dated 1819, but we follow Simmons (2005) and Hood and Gardner (2008) in adopting 1820 as the year of the publication (Wied-Neuwied 1820).

² Koopman (1982) hatched part of the Brazilian territory in the species distribution map proposed for *Diclidurus ingens*, but he did not indicate the voucher specimen or locality of occurrence. Several subsequent authors also reported *D. ingens* (e.g., Fonseca et al. 1996; Taddei 1996; Marinho-Filho and Sazima 1998), but voucher material was provided only by Bernard and Fenton (2002).

³ Hood and Gardner (2008:199) assigned 1967 as the year of the original description of *Peropteryx leucoptera*, but the correct date is 1867.

- ⁴ Schinz (1821) described *Vesp[ertilio]. caninus* with type locality in Brazil, subsequently restricted to Bahia by Ávila-Pires (1965). The name, however, was pre-occupied by *Vespertilio caninus* Blumenbach, 1797, and the first name available for the species was *Emballonura macrotis* J.A. Wagner, 1843 (= *Peropteryx macrotis*). Therefore, in Table 1 the first reference for Brazil precedes the original description of the species.
- ⁵ In the title page of the Dobson's (1879) original description of *Schizostoma brachyote* (= *Lamproncycteris brachyotis*), the printed publication date is 1878. According to Andersen (1906:60), however, the paper was "probably not published until April 1879". Most subsequent authors have adopted 1879 as the valid description date for this taxon (e.g., Simmons 2005; Williams and Genoways 2008), a position also adopted here.
- ⁶ Initially proposed as a subspecies of *Micronycteris megalotis* (Pirlot, 1967), *M. homezorum* was re-described as a separated species by Simmons and Voss (1998), and subsequently suggested to be a junior synonym of *M. minuta* by Ochoa and Sanchez (2005). Porter et al. (2007) followed Ochoa and Sanchez (2005), but Williams and Genoways (2008) maintained *M. homezorum* as a valid species. We also recognized *M. homezorum* as re-diagnosed by Simmons and Voss (1998), but follow Solari (2008) for the spelling of the specific epithet (*M. homezorum* instead of *M. homezi*).
- ⁷ *Micronycteris sanborni* was previously thought to occur in Bolivia, but Siles et al. (2013) revised the Bolivian material attributed to this species and concluded that it corresponds to a distinct new species, *M. yatesi* Siles & Brooks, 2013.
- ⁸ Williams and Genoways (2008) placed authorship and date of *Micronycteris schmidtorum* in parentheses, but this species was originally described in its current genus.
- ⁹ Listed for the first time for Brazil in the species distribution map proposed by Koopman (1982), but without record of locality or voucher material. The effective record considered here is that by McCarthy and Handley (1987). We followed McCarthy et al. (1992) in recognizing 1987 as the publication date for the McCarthy and Handley's paper. The Fall-Winter issue of the volume 28(3–4) of the newsletter Bat Research News is dated 1987 in the front page, but 1988 in the back page, leaving no direct evidence on the actual publication date.
- ¹⁰ *Lophostoma silvicola* has been incorrectly spelled *L. silvicolum*. Species-group names ending in *-cola* ("inhabitant of") must be considered as names in apposition. These names need not agree in gender with the generic name, and must retain their original spelling [A. Gardner, pers. comm. [see ICZN 1999:38, Art. 31.2.1]].
- ¹¹ *Phylloiderma stenops* was originally described by Peters (1865) as part of the genus *Phyllostoma*, subgenus *Phylloiderma*. However, after the recognition of *Phylloiderma* as a separate genus, author and year of publication of *P. stenops* need to be cited in parentheses.
- ¹² Koopman (1982) and other authors (e.g., Fonseca et al. 1996; Taddei 1996; Marinho-Filho and Sazima 1998) included Brazil in the distribution range of *Phyllostomus latifolius*, but they did not indicate localities and voucher specimens. The single record of this species within Brazil, known from central Amazonia, was reported only later by Sampaio et al. (2003).
- ¹³ Koopman (1993) recorded *Glossophaga commissarisi* for Brazil, but he did not indicate voucher material or occurrence site. Several subsequent authors also reported the species (e.g., Fonseca et al. 1996; Taddei 1996; Marinho-Filho and Sazima 1998; Simmons 2005), but record with locality and voucher material was only recently provided by Griffiths and Gardner (2008).
- ¹⁴ Webster and Handley (1986) cited the single currently known specimen of *Glossophaga longirostris* for Brazil as proceeding from "Roraima, Lucetania Ranch". Griffiths and Gardner (2008) did not include this locality in the species distribution map, although they mentioned the record. In the region indicated by Webster and Handley (1986) for this record, we found Lusitania (not Lucetania), indicating misspellings either in the original label of the specimen or in subsequent transcriptions.
- ¹⁵ According to Parlos et al. (2014), *Lonchophylla* (sensu Wetterer et al. 2000 and Baker et al. 2003) is paraphyletic, justifying the allocation of *L. thomasi* in a distinct genus.
- ¹⁶ The distribution of *Lonchophylla bokermanni* is currently restricted to the state of Minas Gerais. Populations of the state of Rio de Janeiro (and probably Espírito Santo), previously referred to this taxon, correspond to a new species (*L. peracchii*; Dias et al. [2013]).
- ¹⁷ Although the records of *Carollia castanea* for the Brazilian territory previous to the description of *C. benkeithi* (e.g., Uieda 1980; Nogueira et al. 1999) have been attributed to the latter species (e.g., McLellan and Koopman 2008), until this material is formally revised we opted to maintain the first formal citation of *C. benkeithi* for Brazil (McLellan and Koopman 2008) as the reference record. The collection number reported here is the formal accession number for the specimen cited by McLellan and Koopman (2008) as BDP 1793 (field number of Bruce Patterson). In the original description of *C. benkeithi*, Solari and Baker (2006) included Brazil in the occurrence of the species, but no specimen from Brazil was examined.
- ¹⁸ *Glyphonycteris daviesi* was first listed for Brazil in the species distribution map proposed by Koopman (1982), but a record with locality and voucher material was first provided by Pine et al. (1996).
- ¹⁹ Williams and Genoways (2008) reported author and date of *Glyphonycteris sylvestris* in parentheses, but the species was originally described in its current genus.
- ²⁰ Williams and Genoways (2008) did not use parenthesis while the author and date of publication as the author of *Trinycteris nicefori*, but its use is necessary in this case because *Trinycteris* was originally described as a subgenus of *Micronycteris*.
- ²¹ Allen (1916a) provided the first Brazilian record of *A. concolor*, but based his assessment on a single skin without a skull. Although unique among *Artibeus* spp. in presenting tricolored dorsal fur, *Artibeus concolor*, as currently understood, may represent two or more sibling species (Marques-Aguiar 2008). We, therefore, provisionally refer to Piccinini (1974), the subsequent Brazilian record.
- ²² Olfers (1818) described *Phyllostomus lituratus* (= *Artibeus lituratus*) based on the "chouve-souris obscure et rayée" described by Azara (1801) for Paraguay. Subsequently, on the same page, the author described *Phyllostomus frenatus* with the type locality "Brasilien". Because *Phyllostomus frenatus* is currently considered a junior synonym of *Artibeus lituratus*, the record of the former for Brazil is the first record of *A. lituratus* for the country.
- ²³ *Dermanura bogotensis* is treated by Marques-Aguiar (2008) as a subspecies of *Dermanura glauca* (referred as *Artibeus glaucus bogotensis*).
- ²⁴ Arroyo-Cabrales (2008) reported author and date of *Mesophylla macconnelli* in parentheses, but the species was originally described in its current genus.
- ²⁵ This is the first record of *Platyrrhinus angustirostris* for the Brazilian territory. The specimen reported here was collected by Júlio Dalponte in a mist net set at ground level at Parque Nacional do Juruema, in the state of Mato Grosso.
- ²⁶ *Vampyressa brocki* (= *Vampyriscus brocki*) was reported for Brazil by Koopman (1982), but without record of voucher material or locality. The first to provide these data were Voss and Emmons (1996).
- ²⁷ See Carter and Dolan (1978) and Patton and Gardner (2008) for explanations regarding the recognition of J.A. Wagner, instead of J. Natterer, as the authority for this species.
- ²⁸ The name *Natalus macrourus* has priority over the name *Natalus espiritosantensis* (see Garbino and Tejedor 2012).
- ²⁹ We followed Eger (2008) in referring to the year of availability of the name *Dysopes abrasus* (= *Cynomops abrasus*) as 1826, instead of 1827. Support for this assignment was made available by Sherborn (1915:2082).
- ³⁰ The identity of the specimens assigned to *Molossops greenhalli* (= *Cynomops greenhalli*) by Mares et al. (1981) was questioned by Eger (2008), who tentatively considered only the specimen reported by Peters et al. (2002) as a valid record to Brazil. This record of *Cynomops greenhalli* by Peters et al. (2002) is based on a specimen previously reported as *Molossops planirostris* (= *Cynomops planirostris*) by Mares et al. (1981). Bernard (2001a) reported on the occurrence of *Cynomops greenhalli* in the state of Amazonas, but no voucher material was informed.
- ³¹ Koopman (1978) compared the holotype of *Cynomops milleri* with adults of *C. paranus* (reported as *C. planirostris* from Amazonas, Brazil [but see Koopman 1994]), and attributed differences to age or geographic variation. Simmons and Voss (1998) recognized *C. milleri* as a junior synonym of *C. paranus* after concluding that differences in size used by Osgood (1914) to distinguish the holotypes of both forms correspond to sexual dimorphism. On the other hand, Eger (2008) treated *C. milleri* as a valid species, distinguishing it from *C. paranus* based on size. We follow Eger (2008) in recognizing *C. milleri* as a valid species. She reported *C. milleri* (USNM 393769) from Mato Grosso, Serra do Roncador, Brazil (Eger 2008:405), based on material collected by Pine et al. (1970). Although she used the same catalog number for a *C. paranus* specimen, it seems to be a typesetting error. Eger (2008) provided precise locations for both specimens (*C. milleri*, 264 km N of Xavantina; *C. paranus*, 280 km N of Xavantina), and according to the database of the Smithsonian's National Museum of Natural History, the catalog number of the specimen collected 280 km N of Xavantina is USNM 393767.
- ³² The material reported for the state of Espírito Santo by Ruschi (1951) as *Molossops planirostris espiritosantensis* corresponds to *Molossops molossus* (see comments in Peracchi et al. [2011b]). Regarding the year of the original publication of *C. planirostris*, we followed Eger (2008) in recognizing 1866, instead of 1865 (as printed in the description). In Peters' *Über die brasilianischen* (Peters 1866), pages 563 to the end were published in 1866

- (Gardner 2008:549).
- ³³ The first record of *Molossus coibensis* for Brazil is from Tapirapoan, state of Mato Grosso (Allen 1916b), type locality of *Molossus cherriei* J. A. Allen, 1916, later synonymized with *M. coibensis* by Dolan (1989).
- ³⁴ López-González and Presley (2001) cited *Molossus currentium* for Brazil based on a juvenile specimen, and this identification has been questioned (Tavares et al. 2008; Eger 2008). We recognize Tavares et al. (2010) as the only valid reference assigning this species to Brazil.
- ³⁵ In the description of *Nyctinomops macrotis* the publication date is printed as “Sept. 1839” (Gray 1840:1). However, the correct date seems to be 1840, as printed in the front page of the whole volume. Simmons (2005) also assigned 1840 as the date for this species, while Eger (2008) assigned 1839.
- ³⁶ The authorship of *Eptesicus furinalis* is restricted to d’Orbigny by some authors (e.g., Simmons 2005), but in the front page of the chapter on mammals (volume IV, part 2, in the series edited d’Orbigny), in which the original description was published, the names of both d’Orbigny and Gervais (1847) are printed.
- ³⁷ Koopman (1982) hatched part of the Brazilian territory in the species distribution map that the author proposed for *Histiotus montanus*, but likewise several subsequent authors (e.g., Fonseca et al. 1996; Taddei 1996; Marinho-Filho and Sazima 1998), he did not report locality or voucher material. At the best of our knowledge, Cherem et al. (2005) is the first to present a formal record for the taxon.
- ³⁸ The authorship of *Lasiurus blossevillii* has been historically attributed to Lesson and Garnot, but Gardner and Handley (2008) contested this authorship. The name *Vespertilio blossevillii* [sic] (original arrangement) first appeared in the 1826 edition of the *Bulletin des Sciences Naturelles et de Géologie*, in an article entitled *Mammifères nouveaux ou peu connus, décrits et figurés dans l’atlas zoologique du Voyage autour du Monde de la Corvette la Coquille; par MM. Lesson et Garnot*. The last sentence “par MM. Lesson et Garnot” seems to be the reason why several authors have attributed the species to Lesson and Garnot. As Gardner and Handley (2008) observed, however, this is not an indication of authorship for the article in question. The goal of the *Bulletin* where the name *V. blossevillii* first appeared was to disseminate published works by short abstracts, and authors listed after the title are, in fact, the authors of the complete publications. The authorship of the abstracts was regularly informed at their end, but the one describing *L. blossevillii* is not signed, justifying its recognition as anonymous (Gardner and Handley 2008). The case of *L. blossevillii* is further complicated because the abstract containing the name became available in 1826, before the publication from which it suppose to derive, by Lesson and Garnot (1827). Additionally, Lesson and Garnot (1827) are the authors of the whole Zoology volume of the *Voyage autour du Monde*, but only Lesson wrote the mammalian descriptions (see Tables des Matières in Lesson and Garnot 1827:360). The bat described by Lesson (in Lesson and Garnot 1827) is named *Vespertilio bonariensis*, but the species in question is clearly *L. blossevillii*. The abstracted description in the anonymous 1826 article is an almost *ipsis litteris* transcription of part of the description of *V. bonariensis*. Therefore, in agreement with Gardner and Handley (2008), we recognize Lesson as the sole author of the 1826 anonymous article (Lesson 1826), and consequently the sole author of *L. blossevillii*. Because the recognition of Lesson as the author of *L. blossevillii* was only possible through inference based on a subsequent publication (Tables des Matières—Lesson and Garnot 1827:360), we enclosed the author’s name and date in square brackets. The use of parentheses, in addition to the square brackets, is also warranted here because *L. blossevillii* was originally described in *Vespertilio* (misspelled as *Vespertilo* in the original publication).
- ³⁹ Sampaio et al. (2003) were apparently uncertain on the identity of the specimens reported as *Lasiurus castaneus*. These authors reported “*L. castaneus*” in Table 3, page 24, but “*Lasiurus cf. castaneus*” in Table 1, page 20. However, Gardner and Handley (2008) confirmed the record.
- ⁴⁰ *Lasiurus salinae* was reported by Gardner and Handley (2008) for Brazil based on the holotype of *Lasiurus enslenii* Lima, 1926 (a junior synonym of *L. salinae*).
- ⁴¹ Until the description of *Rhogeessa hussoni* by Genoways and Baker (1996), the only representative of the genus whose distribution included Brazil was *Rhogeessa tumida* H. Allen, 1866 (see LaVal 1973a; Koopman 1982, 1993). Genoways and Baker (1996) argued that the material of *R. hussoni* from Brazil should represent *R. io*, which was confirmed by Bickham and Ruedas (2008). The primary reference for the occurrence of the species in Brazil is, therefore, LaVal (1973a).
- ⁴² Although recorded for Brazil since 2010 (Passos et al. 2010), only recently *Myotis dinellii* was formally raised to the species level, distinct from *Myotis levis* (Miranda et al. 2013).
- ⁴³ *Myotis guaycuru* was recently confirmed as a junior synonym of *Myotis simus* by Moratelli et al. (2011b); therefore, the original description of *M. guaycuru* by Proença (1943) is the first record of the occurrence of *M. simus* in Brazil.

TABLE 2. List of bat species whose formal record for Brazil was considered doubtful by the Committee of the List of Brazilian Bats (see Materials and Methods). The sources cited correspond to the first record of these species in Brazil.

TAXON	SOURCE
Family Phyllostomidae	
<i>Artibeus amplus</i> Handley, 1987 ¹	Lim and Tavares (2012)
<i>Carollia castanea</i> H. Allen, 1890 ²	Uieda (1980)
<i>Choeroniscus godmani</i> Thomas, 1903 ³	Presley et al. (2008)
<i>Dermanura glauca</i> (Thomas, 1893) ⁴	Koopman (1993)
<i>Dermanura phaeotis</i> Miller, 1902 ⁵	Koopman (1982)
<i>Lonchorhina marinkellei</i> Hernández-Camacho & Cadena, 1978 ⁵	Koopman (1982)
<i>Lonchorhina orinocensis</i> Linares & Ojasti, 1971 ⁵	Koopman (1982)
<i>Platyrrhinus helleri</i> (Peters, 1866) ⁶	Handley (1967)
Family Molossidae	
<i>Eumops dabbenei</i> Thomas, 1914 ⁷	Koopman (1982)
Family Vespertilionidae	
<i>Myotis alter</i> Miller & G. M. Allen, 1928 ⁸	De Vivo et al. (2011)

- ¹ *Artibeus amplus* was reported for the Brazilian Amazon by Lim and Tavares (2012), but no voucher specimen was reported.
- ² *Carollia castanea* was until recently recorded in Brazil, but in a taxonomic revision of the genus, Solari and Baker (2006) concluded that its distribution does not include the Brazilian territory. The populations that comprise the limits of this territory are currently assigned to *C. benkeithi*.
- ³ Presley et al. (2008) reported *C. godmani* for the Brazilian Amazon, but it is not clear whether there is voucher material available. The authors mentioned that “accurate field identification of bats was facilitated by collecting a series of voucher specimens from the area prior to the study, but not at the sites of actual field work”. Those voucher specimens constitute material from Saldanha’s (2000) M.Sc. thesis (unpublished evidence).
- ⁴ Koopman (1993) first recorded *Dermanura glauca* (cited as *Artibeus glaucus*) for Brazil. However, the distribution presented by this author, and subsequently by Simmons (2005), includes the area of occurrence of *D. gnoma* and *D. bogotensis*, listed by both Koopman and Simmons as synonyms of *D. glauca*. In the absence of voucher specimens or locality records listed in these studies, there is no way to determine which of the three taxa could be attributed to the records made by Koopman (1993) and Simmons (2005) for the Brazilian territory. Several authors have reported *Artibeus glaucus* for Brazil (e.g., Marinho-Filho 1996; Marinho-Filho and Sazima 1998; Peracchi et al. 2006; Lorenzutti and Almeida 2006; Zortéa 2007; Paglia et al. 2012), but none of them have reported vouchers for the taxon (*sensu* Lim et al. 2008a).
- ⁵ Koopman (1982) hatched part of the Brazilian territory in the species distribution map proposed for *Artibeus phaeotis* (= *Dermanura phaeotis*), *Lonchorhina marinkellei*, and *Lonchorhina orinocensis*, but he did not describe voucher material or occurrence sites. These species were also reported by Taddei (1996) as occurring in Brazil, but, likewise, without supporting data.
- ⁶ *Platyrrhinus helleri* was until recently reported to occur in Brazil, but Velazco et al. (2010) reviewed the genus and reassigned Brazilian populations to either *P. fusciventris* or *P. incarum* (a subspecies raised to the species level).

- ⁷ Koopman (1982) hatched part of the Brazilian territory in the species distribution map proposed for *Eumops dabbenei*. Fonseca et al. (1996) and Taddei (1996) included this species in their lists. The record by Fonseca et al. (1996) was cited by McWilliams et al. (2002). Simmons (2005) also reported *E. dabbenei* to occur in Brazil. None of them made reference to specific locality information or voucher material. Gregorin and Taddei (2002) included the species in their key of molossids from Brazil, but emphasized that the occurrence is only expected. Fábian and Gregorin (2007), Eger (2008), and Peracchi et al. (2011a) did not report *E. dabbenei* to occur in Brazil.
- ⁸ The first formal record of *Myotis alter* from Brazil was published by Miller and Allen (1928) in the description of the taxon, but at the subspecific level, as *M. chiloensis alter*. Subsequently, *alter* has been treated either as a synonym of *chiloensis* (see Cabrera 1958) or as a synonym of *M. levis* (see LaVal 1973b; Simmons 2005; Wilson 2008). Aires (2008), in her Ph.D. dissertation, recognized *alter* as a valid species, which was followed by De Vivo et al. (2011). As both works do not match the ICZN's (1999) criteria to be considered valid publications, this nomenclatural act is not valid for the purposes of the zoological nomenclature (see ICZN 1999; Art. 8). Also, De Vivo et al. (2011) did not provide comments supporting the distinction between *alter* and *levis*, further leading us to include *M. alter* in the list of unreliable records.

TABLE 3. List of bat species whose formal record for Brazil was considered erroneous by the Committee of the List of Brazilian Bats (see Materials and Methods). The sources cited correspond to the first record of these species in Brazil.

TAXON	SOURCE
Family Phyllostomidae	
<i>Carollia subrufa</i> (Hahn, 1905) ¹	Handley (1967)
<i>Enchisthenes hartii</i> (Thomas, 1892) ²	Marques-Aguiar (1989)
<i>Sturnira bidens</i> (Thomas, 1915) ³	Marques-Aguiar and Oren (1987)
Family Mormoopidae	
<i>Pteronotus davyi</i> Gray, 1838 ⁴	Miranda-Ribeiro (1914)
Family Vespertilionidae	
<i>Eptesicus fuscus</i> (Palisot de Beauvois, 1796) ⁵	Piccinini, (1974)
<i>Lasiurus atratus</i> Handley, 1996 ⁶	Lim and Tavares (2012)

- ¹ Pine (1972) included the *Carollia subrufa* reported by Handley (1967) in the synonym of *C. brevicauda*. Most subsequent authors have not cited *C. subrufa* for Brazil (e.g., Koopman 1993; Taddei 1996; Simmons 2005; Tavares et al. 2008; McLellan and Koopman 2008; Peracchi et al. 2011a; Paglia et al. 2012). Considering that C.O. Handley Jr. revised the manuscript of Pine (1972), as he figures in the acknowledgements, we assume that Handley agreed with the change proposed by Pine, which justifies the inclusion of *C. subrufa* in the list of erroneous records.
- ² Marques-Aguiar (1989) indicated the occurrence of *Enchisthenes hartii* in the Brazilian Amazon, but did not maintain this record in subsequent publications (Marques-Aguiar 1994, 2008), leading us to believe that it was an erroneous record.
- ³ Gardner (2008) examined a specimen reported as *Sturnira bidens* by Marques-Aguiar and Oren (1987) and concluded that it is a representative of *S. lilium* without the external lower incisors.
- ⁴ Patton and Gardner (2008) revised the records of *Pteronotus davyi* for Brazil (Miranda-Ribeiro 1914; Vieira 1955; Mares et al. 1981; Willig 1983, 1985a, 1985b) and concluded that all cases are misidentifications of *P. gymnonotus*.
- ⁵ According to Mok et al. (1982), the specimen reported by Piccinini (1974) is a representative of *Eptesicus furinalis*.
- ⁶ Lim and Tavares (2012) referred to the specimens of *Lasiurus castaneus* reported by Sampaio et al. (2003) as representatives of *Lasiurus atratus*. As discussed earlier (see footnote 3; Table 1), we recognize the record of *L. castaneus* from Sampaio et al. (2003) as valid, based on the assessment of Gardner and Handley (2008).

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