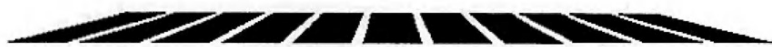


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REVISED CHECKLIST OF BOLIVIAN MAMMALS

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INTRODUCTION

The only complete monograph of the mammals of Bolivia (Anderson 1997) included records of 325 native species through 1994. Since then, there have been descriptions of new taxa (e.g., Anderson and Yates 2000; Emmons 1999; Silva 1998), new distributional records for and within Bolivia (e.g., Aguirre 1998; Brooks et al. 2002; Emmons 1997, 1998; Pacheco et al. 2001; Salazar-Bravo et al. 2002a; Vargas and Simonetti 2001; Wallace and Painter 1999), and taxonomic changes to species that occur in the country (e.g., Groves 2001; Lemos and Cerqueira 2002; Oliveira 1998; Patton et al. 2000; Rylands et al. 2000; Salazar-Bravo et al. 2001; Voss et al. 2001), some of which have been published in periodicals that are not widely available. The number of modifications to the list is sufficient to warrant a synthesis of these changes. In Bolivia, like anywhere else, there is a need to maintain a continually updated working classification, which may serve as a systematic framework and means of communication. Thus, our objective herein is to summarize the new additions to the mammalian fauna of Bolivia and the nomenclatorial and taxonomic changes

that have been published since Anderson's (1997) monograph was completed. We hope that this will aid scientific activities in the field, the laboratory, and the conservation arena.

The systematics of many South American mammals is currently being reevaluated, leading to rapid changes in the taxonomy and nomenclature of Bolivian mammals. We have followed newer taxonomic arrangements and nomenclature when we felt the arguments were convincing. The *Checklist of Mammals of the World* (Wilson and Reeder 1993) is currently in revision after only a decade, indicating the rapidity of these changes.

Except for a limited number of species, we have not attempted to verify the identifications provided by Anderson (1997) or other authors. A critical review of Anderson's *Mammals of Bolivia*, although necessary, is a task currently well beyond the scope of this paper.

DEPARTURES FROM ANDERSON (1997) AND OTHER NOTES

The sequence of species follows Anderson (1997) and Wilson and Reeder (1993) except for newer taxonomic changes discussed below. Exotic species were included in Anderson (1997) but only native species are included here. With a few exceptions (e.g., *Odocoileus virginianus peruvianus*), Anderson (1997) accepted only records documented by specimens, but we have included sight records that seem reliable, and have indicated those as such. Some records (e.g., *Dactylomys peruanus*) are reported herein for the first time for Bolivia.

DIDELPHIMORPHIA

Didelphidae—Sequence of subfamilies and genera follows Gardner (1993a).

Caluromys—*Caluromys philander* was reported for the first time in Bolivia based upon a sight record from Noel Kempff Mercado National Park (NKMNP) (Emmons 1998).

Didelphis—*Didelphis pernigra* is now considered a full species based upon material from Bolivia and elsewhere, rather than a subspecies of *D. albiventris* (Lemos and Cerqueira 2002).

Gracilinanus—Anderson (1997) included three subspecies under the species *Gracilinanus agilis*, but current research suggests the taxa known as *chacoensis* and *unduaviensis* are not synonyms of *Gracilinanus agilis*, and are better recognized as distinct species (R. Voss, pers. comm.).

Marmosops—The only specimen of *Marmosops parvidens* that documented the species' occurrence in Bolivia (AMNH 268938) was re-identified by Voss et al. (2001) as *Marmosops bishopi*. As a consequence, *M. parvidens* should be removed from the checklist of Bolivian mammals and *M. bishopi* added.

Anderson (1997) did not recognize subspecies of *Marmosops dorothea*, but earlier (Anderson 1993) considered *M. ocellatus* Tate 1931 to be a subspecies of *M. dorothea*. Recent research on the systematics of this genus has shown that *Marmosops ocellatus*

should be recognized as a full species, and that the names *Marmosops noctivagus keaysi* and *M. impavidus* have been mistakenly applied to Bolivian material currently regarded as *M. dorothea* (R. Voss, pers. comm.).

Micoureus—A specimen of *Micoureus* collected in NKMNP was recently identified as *Micoureus demerarae* by Patton et al. (2000). This is the first record of this species from Bolivia.

Monodelphis—Specimens of *Monodelphis brevicaudata* from west of the Rio Xingu and south of the Rio Amazonas (and therefore all those in Bolivia) are now considered to represent *Monodelphis glirina* (Voss et al. 2001), thus *M. brevicaudata* does not occur in the country.

PAUCITUBERCULATA

Anderson (1997) placed all marsupials in a single order, Marsupialia. We follow Gardner (1993b) in recognizing multiple orders and in placing Caenolestidae in the Order Paucituberculata.

XENARTHRA

McKenna and Bell (1997) included Dasypodidae (armadillos or quirquinchos and tatus) in the Order Cingulata and the anteaters and sloths in Order Pilosa in their classification scheme. However, the monophyly of Xenarthra is strongly supported by both molecular and morphological data (Delsuc et al. 2001, and references therein) while the morphological and molecular distinctness of the two major living groups within Xenarthra is clearly recognized (e.g., Delsuc et al. 2002). Thus, we believe that the best classification option is to follow current practice and recognize two suborders within Xenarthra.

McKenna and Bell (1997) also placed *Cyclopes* in a separate family, Cyclopedidae. Although this treatment has not yet been widely adopted, we follow it here because molecular (Delsuc et al. 2002, and references therein) and morphological data (Gaudin and Branham 1998; Reiss 1997) support the distinctive-

ness of silky anteaters, and because Delsuc et al. (2002) have estimated that *Cyclopes* diverged more than 35 Mya from the ancestors of both *Myrmecophaga* and *Tamandua*.

Anderson (1997) placed the two-toed sloths in family Choloepidae, but Webb (1985) argued persuasively and Gardner (1993c) followed suit in including them as subfamily Choloepinae in the family Megalonychidae along with 12 genera of fossil sloths.

CHIROPTERA

Emballonuridae

Saccopteryx—*Saccopteryx canescens* was reported for the first time in Bolivia from NKMNP by Emmons (1998).

Phyllostomidae

Phyllostominae

Glyphonycteris—Recent studies (Simmons and Voss 1998; Wetterer et al. 2000) have suggested that *Micronycteris daviesi* should be transferred to *Glyphonycteris*.

Lophostoma—*Tonatia brasiliense*, *Tonatia carrikeri*, and *Tonatia silvicola* should be transferred to *Lophostoma* (Lee et al. 2002).

Micronycteris—*Micronycteris microtis* has been recorded from NKMNP (Emmons 1998) and *Micronycteris sanborni* has been documented from eastern Santa Cruz Department (Brooks et al. 2002).

Phylloderma—Anderson (1997) treated *Phylloderma* as a junior synonym of *Phyllostomus* following Van den Bussche and Baker (1993). However, Wetterer et al. (2000) argued that a more inclusive phylogenetic analysis of the Phyllostomidae did not support the synonymy of *Phylloderma* and *Phyllostomus*, therefore we are treating these as two different genera.

Trinycteris—Recent studies suggested that *Micronycteris nicefori* belongs in genus *Trinycteris* (Simmons and Voss 1998; Wetterer et al. 2000).

Lonchophyllinae

Choeroniscus—Anderson (1997) included two species, *C. minor* and *C. intermedius*, but noted that the taxonomy was uncertain. These are now considered synonyms (Simmons and Voss 1998), and *C. minor* has priority.

Artibeus—The small species of *Artibeus* have sometimes been placed in *Dermanura* (e.g., Owen 1987). However as Wetterer et al. (2000) argue, recognizing *Dermanura* would eliminate a convenient way to refer to the monophyletic clade formed by the subgenera *Artibeus*, *Dermanura* and *Koopmania*, and thus it is better to maintain *Artibeus* (s.l.) as a more encompassing name; a criterion we have followed here.

Anderson (1997) followed Koopman (1993) in synonymizing *A. glaucus* and *A. gnomus*, however Handley (1987) provided strong evidence for the specific status of *A. gnomus*, and it is included here as such.

Enchisthenes—*Enchisthenes* is the appropriate generic name for the species formerly known as *Artibeus hartii* (Wetterer et al. 2000).

Mesophylla—Anderson (1997) included *Mesophylla macconnelli macconnelli*. Wetterer et al. (2000) considered *Mesophylla* as a junior synonym of *Ectophylla*, but Baker et al. (2000) showed that *Mesophylla* and *Ectophylla* are better considered different genera and we have left the list unchanged.

Platyrrhinus—This is a genus in dire need of revision. Anderson (1997) included *Platyrrhinus lineatus nigellus*. Emmons et al. (2001) included *P. l. nigellus* in *Platyrrhinus umbratus* from southern Peru, but Solari et al. (2001) treated it as *P. nigellus*. We continue to use *Platyrrhinus lineatus nigellus* until more definitive work is done, but suspect that further inquiry into the taxonomy of *Platyrrhinus* may indicate that *nigellus* deserves specific status.

Diaemus—*Diaemus youngi* was treated as *Desmodus youngii* in Anderson (1997). We follow most authors (e.g., Koopman 1993; Wetterer et al. 2000) in using *Diaemus youngi*.

Natalidae

Natalus—*Natalus stramineus* was recently first reported for Bolivia from NKMNP (Emmons 1998). However, Taddei and Uieda (2001) mention specimens collected as early as May and June 1983 but not reported earlier.

Vespertilionidae

Dasypterus—We have followed Barquez et al. (1999) in the use of *Dasypterus* for the species formerly known as *Lasiurus ega*.

Eptesicus—This genus needs a modern taxonomic revision. Based upon material from French Guiana and their analyses of type specimens of other species, Simmons and Voss (1998) suggested that *Eptesicus furinalis montosus* should be moved to *Eptesicus andinus*. *Eptesicus furinalis chapmani* should be considered a junior synonym of *Eptesicus furinalis gaumeri* (Simmons and Voss 1998).

Lasiurus—The subspecies of *Lasiurus blossevillii* in Bolivia is *L. b. blossevillii* rather than *L. b. frantzi*. Bolivian specimens used in genetic analyses of *L. blossevillii* form part of a clade with Argentinean populations of *L. b. blossevillii* (Morales and Bickham 1995).

Molossidae

Cynomops—The species formerly referred to as *Molossops abrasus* and *Molossops planirostris* are now placed in *Cynomops* (Barquez et al. 1999).

Eumops—We followed Barquez et al. (1999) and recognize *Eumops patagonicus* as a senior synonym of *Eumops bonariensis beckeri*.

PRIMATES

Along with a number of new treatments of certain genera, two major compendia on the taxonomy of primates have been published in the last three years (Groves 2001; Rylands et al. 2000). Although Groves participated in both publications, there are a number of inconsistencies between them. One of the points of disagreement is the number and composition of Neotropical primate families; Groves (2001) recognized four: Cebidae (including the subfamily Hapalinae for marmosets, tamarins and titis), Nyctipithecidae as a family name for night monkeys (*Aotus*), Pitheciidae, and Atelidae. Rylands et al. (2000), on the other hand, recognized five families: Callitrichidae, Cebidae, Aotidae, Pitheciidae, and Atelidae. Brandon-Jones and Groves (2002) however, examined further the family and subfamily nomenclature for the New World monkeys and concluded that Aotidae (not Nyctipithecidae), Callitrichinae (not Hapalinae), Alouattinae (not Mycetinae) were, after all, the correct names. Although problematic, they also urged the continued use of Saimirinae (not Chrysotrichinae) for the squirrel monkeys. We follow Rylands et al. (2000), McKenna and Bell (1997), and Brandon-Jones and Groves (2002) in recognizing the Callitrichidae.

Callitrichidae

Groves (2001) proposed recognizing Hapalinae as the subfamily that includes Callitrichines plus *Callimico* because of 19th Century use of Hapalidae as a family name. However, the replacement name Callitrichidae won general acceptance (Rosenberger 1981) except primarily for a series of publications by Hill in the 1960s (e.g., Hill 1962). Callitrichinae should thus be retained under Article 40.2 of the International Code of Zoological Nomenclature (Brandon-Jones and Groves 2002; International Commission on Zoological Nomenclature 1999). Anderson (1997) placed *Callimico* in a separate subfamily, Callimiconinae. We follow Rylands et al. (2000) and Groves (2001) and include this genus in the family Callitrichidae.

Callithrix—*Callithrix* and *Cebuella* were regarded as closely related by Hershkovitz (1977), who maintained *Cebuella* as a separate genus. However, first Moynihan (1976), and later Rosenberger (1981) and Natori (1994) noted the close morphological similarities between *Cebuella* and *Callithrix*, suggesting synonymy of these taxa. Molecular genetic analyses (most recently, Canavez et al. 1999; Neusser et al. 2001; Schneider et al. 2001; Tagliaro et al. 2000) have supported the conclusions based on morphological analyses. Thus, we follow Groves (2001) in treating *Cebuella* as a junior synonym of *Callithrix*.

Hershkovitz (1977) and Townsend (2001) considered *C. pygmaea* monotypic, but Napier (1976) and Van Roosmalen and Van Roosmalen (1997) presented evidence that two subspecies may be recognized. Recent molecular studies have also suggested the presence of high molecular diversity within *C. pygmaea*, comparable to that between species of other marmosets, lending support to the hypothesis of Van Roosmalen and Van Roosmalen (1997; see also Tagliaro et al. 2000). This being the case, *C. p. niveiventris* would be the subspecies in Bolivia. Buchanan-Smith et al. (2000) extended the distribution of *Cebuella* in Pando beyond the area shown by Anderson (1997).

Callithrix melanura—Recently, Rylands et al. (2000) distinguished two genera within *Callithrix* (*sensu lato*): an *argentata* group of mostly Amazonian species in the genus *Mico* and a *jacchus* group of mostly eastern Brazilian species in the genus *Callithrix*. This was due to their unwillingness to consider *Cebuella* as a junior synonym of *Callithrix*. To resolve the problem that the Amazonian marmosets are more closely related to *Cebuella* than to the Atlantic forest *jacchus* group marmosets, Rylands et al. (2000) placed them in a separate genus, *Mico* (used as a subgenus by Groves [2001]). However, recent genetic analyses (e.g., Schneider et al. 2001) have suggested a very close relationship between all *Callithrix* taxa and thus we follow Groves (2001) in maintaining *Callithrix* as the generic name for all the marmosets.

Saguinus—Three tamarins, *Saguinus*, were known from Bolivia: *Saguinus fuscicollis weddelli*, *S. i. imperator*, and *S. labiatus labiatus* (Anderson 1997). *S. f. crandalli* was reported by a reliable observer at the Rio Negro main camp in Pando (Emmons 2002).

Groves (2001) placed *crandalli* as a subspecies of *S. melanoleucus*, which we follow here, adding another species to the Bolivian fauna. Recent observations of *Saguinus imperator* along the banks of the Rio Muyumanu (Buchanan-Smith et al. 2000) confirm earlier sightings by Izawa and Bejarano (1981) and correspond to the subspecies *S. i. subgriseus* (Buchanan-Smith et al. 2000; Rylands et al. 1993). *S. i. imperator* occurs between Rios Purus and Acre (Rylands et al. 1993) and the records mentioned by Anderson (1997) and reports for localities north of Rio Tahuamanu (Buchanan-Smith et al. 2000) belong to this subspecies.

Cebidae

Cebinae

Cebus—Anderson (1997) listed *C. albifrons cuscinus* and *C. a. unicolor* from La Paz, Beni, and Pando Departments, but his subspecies identifications of Bolivian specimens were tentative and based on geographic grounds. *C. a. cuscinus* could be the form in extreme northwestern Bolivia, which would conform with its supposed distribution in neighboring Peru (Aquino and Encarnación 1994; Hershkovitz 1949). The white-fronted capuchin in northeastern Bolivia was formerly named *C. a. unicolor* but Defler and Hernández-Camacho (2002) synonymized this subspecies with *C. a. albifrons*. The identity of the subspecies of *Cebus albifrons* in Bolivia needs further confirmation. All tufted capuchins were traditionally considered subspecies of *Cebus apella*, but a spate of recent revisions have tended towards dividing them into a number of species. Aquino and Encarnación (1994) restricted *C. apella peruanus* to north of the Río Madre de Dios and *C. a. pallidus* to south of the Ríos Madre de Dios and Inambari in Peru. By implication, the Pando tufted capuchins would also be of the subspecies *peruanus*. Anderson (1997), however, attributed all northern and central Bolivian tufted capuchin monkeys to *C. a. pallidus*, including those in the Pando region north of the Madre de Dios, while restricting *C. a. paraguayanus* to south-central and southeastern Bolivia. Groves (2001) did not give detailed distributions, but according to his taxonomy, the northern Bolivian populations would be *C. libidinosus juruanus* (extending to the upper Rio Juruá) and the southern populations *C. l. pallidus* (in agreement with the pat-

tern indicated by Anderson 1997]). Further taxonomic considerations arise with a major revision of the genus by Silva Jr. (2001). He recognized only *C. macrocephalus* for the upper Amazon with the forms *peruanus* and *juruanus* treated as synonyms. According to his taxonomy, *Cebus cay* would be the correct name for the form in south-central and southeastern Bolivia (with *paraguayanus* as a junior synonym). In summary, therefore, the following names are current for the northern Bolivian tufted capuchins: *C. a. peruanus* according to Aquino and Encarnación (1994), *C. a. pallidus* following Anderson (1997), *C. l. juruanus* according to Groves (2001) and Rylands et al. (2000), and *C. macrocephalus* following the taxonomy of Silva Jr. (2001). In south-central and southeastern Bolivia, *C. a. paraguayanus* is the name given by Anderson (1997), *C. l. paraguayanus* by Groves (2001) and *C. cay* by Silva Jr. (2001). The only consensus is that there are two distinct forms of tufted capuchins in the country. Provisionally, we follow Rylands et al. (2000) and Groves (2001) and use *C. libidinosus* instead of *C. apella* and *C. l. juruanus* instead of *C. apella pallidus*.

Saimiri—*Saimiri boliviensis* is currently recognized as a full species (Boinski and Cropp 1999; Cropp and Boinski 2000; Groves 2001; Rylands et al. 2000) rather than as a subspecies of *S. sciureus* as in Anderson (1997).

Aotidae

Aotus—Recent sight records from two localities in NKMNP indicate the presence of *Aotus "infulatus"* (Emmons 1998). The taxon *infulatus* has been treated as both a full species (Groves 1993; Ford 1994) or as a subspecies of *A. azarae* (Groves 2001; Rylands et al. 2000). We tentatively include it as a subspecies of *A. azarae*. The specific epithet *azarae* (used by Groves 2001; Hershkovitz 1983) was spelled *azarai* by Groves (1993).

Pitheciidae

Callicebinae

Callicebus—The taxonomy of this genus is also in a state of flux. Hershkovitz (1990) documented a

specimen of *C. caligatus* from Pando, but this species is now considered a synonym of *C. cupreus* (Groves 2001; Rylands et al. 2000). Hershkovitz' (1990) revision indicated that *C. brunneus* occurs in the northern Pando region, with localities for *C. modestus* and *C. olallae* in small, poorly-defined ranges on the upper Beni. Van Roosmalen et al. (2002) proposed, however, that the titi monkey in the Pando north of the Rio Madre de Dios was *C. dubius* (first described by Hershkovitz [1988], but not recognized by Groves 2001), with *C. modestus* and *C. olallae* along the west (left) bank of the Rio Beni. *C. donacophilus* occupies the region south of the east (right) bank of the Beni, with *C. pallescens* (formerly a subspecies of *C. donacophilus*, see Anderson [1997]) in southern and southeastern Bolivia and extending into Paraguay.

Atelidae

Alouattinae

Alouatta—*Alouatta guariba beniensis* was included in Anderson (1997), but *beniensis* may pertain to *A. seniculus* instead (Mittermeier et al. 1988). The type specimen of *beniensis* was not examined by Anderson (1997), Mittermeier et al. (1988), nor Groves (2001), and thus the specific affiliation of *beniensis* cannot be resolved at this time. We tentatively include *beniensis* in *Alouatta guariba* following Groves (2001) and Hill (1962). Anderson (1997) recognized *A. seniculus sara*, but others (Groves 2001; Rylands et al. 2000) considered *A. sara* to be a full species, based partially upon "striking" karyotypic differences (Stanyon et al. 1995). We follow these authors in recognizing *A. sara* as a distinct species.

Atelinae

Ateles—Spider monkeys in Bolivia were formerly ascribed to *A. paniscus chamek* (see Kellogg and Goldman 1944), but Anderson (1997) recognized *chamek* as a full species. His conclusion is supported by morphometric (Froehlich et al. 1991), cytogenetic (Medeiros et al. 1997), molecular (Collins and Dubach 2000a; Collins and Dubach 2001), and biogeographic (Collins and Dubach 2000b; Collins 2001) studies, which have demonstrated that *Ateles chamek* is related to *A. belzebuth* and not to *A. paniscus*.

Lagothrix—One of the most striking new records for mammals in Bolivia is the presence of an apparently isolated population of *Lagothrix cf. lagothricha* from Madidi National Park (Wallace and Painter 1999). This population is more likely *Lagothrix cana tschudii* or possibly an undescribed form (Rylands et al. 2000). Until ongoing genetic studies (R. Wallace, pers. comm.) resolve the identity of this population we tentatively list it as *L. c. tschudii*.

CARNIVORA

Canidae

Lycalopex—Foxes formerly known as *Pseudalopex culpaeus* and *P. gymnocercus* (subgenus *Dusycyon*) are now placed in *Lycalopex* (Zunino et al. 1995).

Felidae

Anderson (1997) conservatively placed all members of this family except the jaguar (*Panthera onca*) into various subgenera of *Felis*. Wozencraft (1993) and others now treat these subgenera as genera.

Leopardus—Recent phylogenetic studies using mitochondrial DNA and morphology indicate that *Oreailurus jacobita* should be transferred to *Leopardus* (Johnson et al. 1998; Seymour 1999).

Oncifelis—Recent studies indicate that *Lynchailurus pajeros* and *Leopardus tigrinus* should be transferred to *Oncifelis* (Johnson et al. 1998; Seymour 1999). *Oncifelis geoffroyi euxantha* was included in Anderson (1997), but Johnson et al. (1999) suggested that *O. geoffroyi* has probably maintained a large panmictic population with no significant barriers to gene flow since it diverged from a common ancestor with *O. guigna*, and thus division of the species into subspecies is not warranted.

Anderson (1997) considered *O. pajeros garleppi* to be the subspecies of this cat in Bolivia, but its subspecific validity needs further study (see comments in García-Perea 1994 and Anderson 1997). It was not identified to subspecies in a recent compari-

son with *Leopardus jacobita* (García-Perea 2002); thus, we have indicated it as "ssp." in the list. An individual of *Oncifelis tigrinus* was captured, photographed, and radiotracked in Cotapata National Park and Area of Integrated Management [as *Leopardus tigrinus*], documenting its first record in Bolivia (Pacheco et al. 2001).

Puma—*Herpailurus* is now considered synonymous with *Puma* based on phylogenetic analyses (Bininda-Emonds et al. 1999; Mattern and McLennan 2000; Salles 1992). *Puma* Jardine 1834 has priority over *Herpailurus* Severtzov 1858, thus the jaguarundi becomes *Puma yagouaroundi*. The subspecies of *Puma concolor* were recently revised by Culver et al. (2000) who suggested that *Puma concolor osgoodi* be synonymized with *Puma concolor concolor*.

Mustelidae

Lontra—Phylogenetic studies (van Zyll de Jong 1972; 1987) indicate that *Lutra* should be restricted to Old World river otters and *Lontra* is appropriate for New World species previously included in *Lutra* (Larivière and Walton 1998; Larivière 1999; Wozencraft 1993). Thus, the Bolivian species becomes *Lontra longicaudis*. The subspecies in Bolivia is *L. l. enudris* according to van Zyll de Jong (1972) and Anderson (1997), but *L. l. longicaudis* according to the map in Larivière (1999). Larivière (1999) provided no details, and thus, we follow van Zyll de Jong (1972), the last reviewer of the genus.

Mephitidae

Skunks have long been treated as members of the subfamily Mephitinae of Mustelidae, but based on recent molecular phylogenetic analyses (Dragoo and Honeycutt 1997; Flynn et al. 2000), it now appears that skunks are better treated as members of a separate family, Mephitidae.

CETACEA

Iniidae

Anderson (1997) placed the Platanistidae in the order Odontoceti. However, recent phylogenetic analyses using fossil and molecular evidence (e.g., Luckett

and Hong 1998; Nikaido et al. 1999; Thewissen and Madar 1999) indicate that cetaceans form a monophyletic group, quite possibly descendants of mesonychids. Thus they are best treated as a single order, Cetacea. Hamilton et al. (2001) recommended that the proper name for the family including the Amazon River dolphins is Iniidae rather than Platanistidae. They also found evidence suggesting that the Bolivian River dolphin is a distinct species (*Inia boliviensis*) from the Amazon River dolphin (*Inia geoffroyi*).

ARTIODACTYLA

Tayassuidae

Grubb and Groves (1993) argued that the proper family name for peccaries is Dicotylidae rather than Tayassuidae, but Anderson (1997) countered that the family name Tayassuidae has "won general acceptance" and therefore should be the accepted family name. We agree, and retain Tayassuidae.

Pecari—The morphological differences between collared and white-lipped peccaries are sufficient to warrant placement in two different genera (Grubb 1993; Theimer and Keim 1998).

Cervidae

We use the genera recognized by Grubb (1993) and Grubb and Gardner (1998).

Blastoceros—*Blastoceros* was a subgenus of *Odocoileus* in Anderson (1997).

Mazama—Because of the need for taxonomic revision of *Mazama americana*, Anderson (1997) did not list subspecies. Grubb and Gardner (1998) listed 7 subspecies that may, or may not, occur in Bolivia. Cabrera (1957) indicated that *M. a. sarae* occurs in Bolivia. However, it seems prudent to wait for a taxonomic revision before listing subspecies. *Mazama chunyi* was described as a full species (Hershkovitz 1959) but treated as a subspecies of *M. bricenii* by Anderson (1997). It is consistently considered a full species by other authorities (e.g., Eisenberg and Redford 1999; Grubb 1993; Grubb and Gardner 1998).

Grubb (1993) spelled *Mazama gouazoubira* with a "p", but we accept Gardner's (1999) argument that the spelling of *M. gouazoubira* with a "b" should be maintained. The subspecies in Bolivia was given as *M. g. gouazoubira* by Anderson (1997) but *M. g. tschudii* by Grubb and Gardner (1998); further studies are needed and we have omitted subspecies.

Odocoileus—In the late 1890s, Philippi misidentified a skull of *Odocoileus* from Bolivia as *Hippocamelus antisensis*. Because of this error the species was not reported for another 80 years (Flueck 2000). Jungius (1974) published a photo of *Odocoileus* antlers from Bolivia, which was the basis of Anderson's (1997) inclusion of *Odocoileus virginianus peruvianus*, although the presence of *Odocoileus* in Bolivia was omitted in Grubb and Gardner (1998). Molina and Molinari (1999) in a taxonomic revision of *Odocoileus virginianus* from Venezuela proposed that the subspecies occurring in Peru and Bolivia, *O. v. peruvianus*, is sufficiently distinct to warrant elevating it to species status as *O. peruvianus*. The first complete specimen was recently obtained in northern Bolivia (Tarifa et al. 2001).

Ozotoceros—*Ozotoceros* was a subgenus of *Odocoileus* in Anderson (1997).

RODENTIA

Sciuridae

There has been no modern treatise on Neotropical sciurids since Moojen (1942), and the group is in need taxonomic revision.

Sciurus—*Sciurus argentinius* was reported based upon specimens from Chuquisaca and comparisons with specimens from northern Argentina (Emmons 1997).

Microsciurus—A specimen of *Microsciurus flaviventer* from Pando Department is the first specimen for Bolivia (Salazar-Bravo et al. 2002a).

Muridae

The organization of the taxa into tribes follows Smith and Patton (1999), modified slightly by unpublished results of one of the authors (JSB). They recognized an "Andean clade" which may warrant tribal status.

Nectomys—We provisionally refer all specimens from the foothills of the eastern Cordillera in Bolivia to *Nectomys apicalis* instead of *N. squamipes garleppii*. The name *Nectomys squamipes* is unavailable for Amazonian forms (Patton et al. 2000), and the large teeth (length of molar toothrow 7.1–7.4 mm) and other characters observed on specimens (e.g., University of Michigan Museum of Zoology 126771 and Museum of Southwestern Biology 56318, Voss et al. 2001) are appropriate for *N. apicalis*. To our knowledge all the available records of Bolivian *Nectomys* come from the foothills of the Andes.

Oecomys—The first report in Bolivia of *Oecomys* cf. *trinitatis* was from one site in NKMNP (Emmons 1998). *O. concolor* is the most similar species, but Emmons also listed *O. cf. concolor* at this site. This genus is currently undergoing taxonomic revision.

Oligoryzomys—Carleton and Musser (1989) divided the genus *Oligoryzomys* into five subsections, one of which is the *flavescens* group. An unnamed species in this group known only as *Oligoryzomys* sp. B is abundant at several localities on the eastern flank of the Andes.

Oryzomys—Although *O. legatus* has been considered a junior synonym of *O. russatus* from the Mata Atlantica of southeastern Brazil (Musser et al. 1998), it is a distinct species based on sequence data (Patton et al. 2000). *Oryzomys perenensis* was recently recognized as a distinct species in the *Oryzomys megacephalus* group based on karyotypic and sequence data (Patton et al. 2000—but see Musser et al. [1998] for a different treatment).

Rhipidomys—Anderson (1997) listed three species of *Rhipidomys* for Bolivia: *R. couesi austrinus*, *R. leucodactylus*, and *R. nitela*, but his book went to press before Tribe's (1996) revision was available. Tribe (1996) treated *R. austrinus* as a full species but *R.*

leucodactylus remained unchanged. Anderson (1997) doubted that his specimens of a small *Rhipidomys* were *R. nitela* but it was the only name available to him. Voss et al. (2001) discussed the status of *Rhipidomys nitela* in French Guiana, and argued that the name should be restricted to populations endemic to the Amazon Basin and not occurring "west of a north-south zoogeographic axis represented by the Rio Negro and the Rio Madeira", effectively removing *R. nitela* from the fauna of Bolivia. Tribe (1996) did not comment on the status of small-bodied *Rhipidomys* from Bolivia; it is unclear if he saw any specimens. Voss et al. (2001) argued that at least one of the animals currently assigned to *R. nitela* from Bolivia was misidentified in Anderson (1997), casting a shadow of doubt on the presence of small-bodied *Rhipidomys* in the country. However, there is an undescribed species from La Paz (*Rhipidomys* sp. 1, Tribe 1996).

Akodon—Emmons (1997) reported the first specimen of *Akodon budini* for Bolivia, which is also the first record for the subgenus *Hypsomys* in the country. *Akodon kofordi* was recently reported for the fauna of Bolivia based on specimens from Cochabamba Department (Salazar-Bravo et al. 2002a).

Bolomys—We continue to use the generic name *Bolomys*, instead of *Necomys* as suggested by Massoia and Pardiñas (1993). There are two reasons for this: 1) Massoia and Pardiñas (1993) concluded that *Bolomys* and *Necomys* were synonyms based on the lack of "difference" between the hemimandibles of *Necomys conifer* (a *nomen dubium*) and that of specimens of *Bolomys benefactus* and *B. obscurus*. In their analyses, however, they did not include lower jaws of other genera of akodontine rodents and therefore their conclusion is based on overall similarity (or lack of difference) rather than upon the distribution of character states. This practice, especially in the fossil record, is bound to be misleading, as has been suggested in the case of *Bensonmys* and *Calomys* (Steppan 1995). 2) Galliari and Pardiñas (2000) suggested that *Necomys* may not include *Bolomys amoenus*, the type species of the genus *Bolomys*; thus, until a revision of the genus *Bolomys* is available, we prefer using this generic name instead of *Necomys*.

Juscelinomys—*Juscelinomys* was reported in Bolivia for the first time from NKMNP (Emmons 1998),

and *Juscelinomys guaporensis* and *Juscelinomys huanchacae* were described based on one specimen each (Emmons 1999).

Oxymycterus—*Oxymycterus hiska* was recently reported for Bolivia (Oliveira 1998; Salazar-Bravo et al. 2002a). Oliveira (1998) made several taxonomic changes affecting Bolivian taxa: *Oxymycterus inca doris* was transferred to *Oxymycterus juliaca doris*, effectively adding one more species to the fauna of the country; *O. inca* consists of two subspecies in Bolivia, *O. i. inca* and *O. i. iris*, the former an addition to the fauna of Bolivia; *O. nigrifrons* was previously considered a subspecies of *O. paramensis* (Oliveira 1998).

Abrothrix—Anderson (1997) recognized *Chroeomys andinus*. However, we follow Smith and Patton (1999) who concluded that *andinus* should be included within *Abrothrix*.

Andalgalomys pearsoni—Anderson (1997) listed this species as *Graomys pearsoni dorbignyi*. We maintain the use of *Andalgalomys* following the recommendation of Steppan and Sullivan (2000).

Calomys—At least seven species of *Calomys* are known from the country, although the taxonomy of the genus is still unclear. *Calomys venustus*, listed by Anderson (1997), has its type locality in Cordoba Department, Argentina, and is endemic to that country. *C. venustus* is clearly differentiable from other populations in the “*Calomys callosus* complex” based upon chromosomal (Vitullo et al. 1990) and other data (Salazar-Bravo et al. 2001). The lowlands and southern Yungas *Calomys* form a reciprocally monophyletic clade and should be recognized as independent species (Salazar-Bravo et al. 2001, 2002b). These authors proposed that *C. callosus* is the species inhabiting the Chaco and associated habitats in southeastern Bolivia, and that *C. fecundus* is the appropriate name for populations of *Calomys* in the yungas of Chuquisaca, Tarija, and southern Santa Cruz. *Calomys boliviae* is available for specimens from the yungas of La Paz. However, if these two latter forms are found to represent one species, then the name *C. boliviae* should be used for the yungas *Calomys*. *C. fecundus* and *C. boliviae* replace what Anderson (1997) had called *C. venustus* for Bolivia because *C. venustus* is restricted to Argentina.

Phyllotis—Anderson (1997) recognized *Phyllotis chilensis* as a full species, but Steppan (1998) argued that it is better treated as a subspecies of *P. xanthopygus*.

Tapecomys—An “undescribed Phyllotine” from Tarija Department mentioned by Anderson (1997:469) was subsequently named *Tapecomys primus* by Anderson and Yates (2000).

Chinchillidae

Chinchilla—The taxonomy and nomenclature of *Chinchilla* is confusing and based upon few specimens. Anderson (1997) felt that a convincing case had not been made for more than a single species and considered all chinchillas as belonging to *Chinchilla chinchilla*. However, geographic variation is evident, and most authorities (e.g., Jiménez 1996; Valladares 2002; Woods 1993) recognize two species. We follow Woods (1993) in treating the Bolivian specimens as *C. brevicaudata*.

Caviidae

Cavia—The genus is under revision. Based on preliminary data there appear to be at least two species of wild caviés in Bolivia. However, it is unclear what the appropriate species names may be, or even if any available names would apply to wild Bolivian populations. Thus, we have decided to use the one species name that Anderson (1997) used with the understanding that it is probably incorrect. The currently accepted name for the native domesticated form is *C. porcellus* (Chauca de Zaldivar 1997).

Dasyproctidae

Myoprocta—Anderson (1997) included *Myoprocta pratti* as hypothetical based upon sight records (Emmons and Smith 1992, cited in Anderson 1997). In a recent published report Emmons gave more details about these sight records and mentioned that she saw acouchies in two localities in Pando (Emmons 2002). Also, Porter and Nacimiento (2000) have reported high densities of this species in Pando Department, so it seems safe to consider this species as a part of the Bolivian fauna.

Cuniculidae

The International Commission on Zoological Nomenclature (ICZN 1998) has ruled that *Cuniculus* Brisson 1762 is available and thus has priority over *Agouti* Lacépède 1799. We use Cuniculidae in place of Agoutidae for the monotypic family containing this genus, and *Cuniculus* in place of *Agouti*.

The first Bolivian specimen of the paca peluda (*Cuniculus taczanowskii*) was recently collected in Madidi National Park in northern La Paz Department (Boris Ríos-Uzeda and Rob Wallace, pers. comm.).

Ctenomyidae

Ctenomys—Several new species of tuco-tucos await description from material collected in Bolivia. Additionally, Mascheretti et al. (2000) suggested that specimens from Robore, Santa Cruz Department (2n=36) assigned to *C. boliviensis* by Anderson et al. (1987) are better assigned to *C. nattereri*, although it is unclear to us whether or not they studied the type material of the latter. In any case, *C. nattereri* would be new for the mammalian fauna of Bolivia.

Echimyidae

Dactylomys—All three species of *Dactylomys* are now known from Bolivia. *D. dactylinus* was collected from one locality in Pando and seen at one site in NKMNP (Emmons 2002; Patton et al. 2000). These were the first records from Bolivia. Three Bolivian specimens of *D. peruanus* from La Paz Department are currently housed at Louisiana State University Museum of Zoology (LSUMZ 22668, LSUMZ 23168, LSUMZ 23624). None of these specimens were included in Anderson (1997).

Makalata—*Makalata didelphoides* was treated as *Echimyus didelphoides* by Anderson (1997). *Makalata* is variously considered either a genus or as a subgenus of *Echimyus*, but Voss et al. (2001) argue convincingly that the proper name for this form is *Makalata*.

Proechimys—The recent description of *Proechimys gardneri* included three specimens from two localities in Pando (Silva 1998), which makes it a new species for Bolivia. The specimens described by Silva (1998) were cited by Emmons (2002) as "*Proechimys* sp. nov. 1".

REMARKS

This list of 356 species includes only species of native mammals known to occur in Bolivia, although at least 13 species of exotic mammals (including humans) are known from the country. Anderson (1997, his projection C) estimated approximately this number would be found through 2000 (Figure 1). The number of native species will increase in the near future because a number of species new to science are currently in the process of description, and because we expect additional collecting will extend the ranges of many species into Bolivia. Consequently, we expect that the number of native mammal species for Bolivia will surpass 390 within 10 years.

It is notable that most of the specimens from Bolivia have been collected near major roads or river systems, and consequently, there are many areas that have not been adequately sampled. This is partially because of the logistics of carrying the equipment necessary for collecting and preservation of specimens.

Collections have not been made in many areas because they are perceived to "lack" biological interest, such as parts of the high Andes. Some taxonomic groups have also been neglected. A good example would be high-elevation bats. Knowledge of this group is better for most of the tropical areas of the country than for higher elevations, where information is scarce or non-existent. For example, one entire department (Oruro) has no records of bats, but it is quite likely that this indicates lack of collecting more than real bat distributions.

Collecting in areas with difficult access or perceived low interest may also yield additional species to the mammalian fauna of Bolivia. Most of the new records for the country have been found away from the traditional collecting localities (Figure 2), a pattern recently discussed by Salazar-Bravo et al. (2002c).

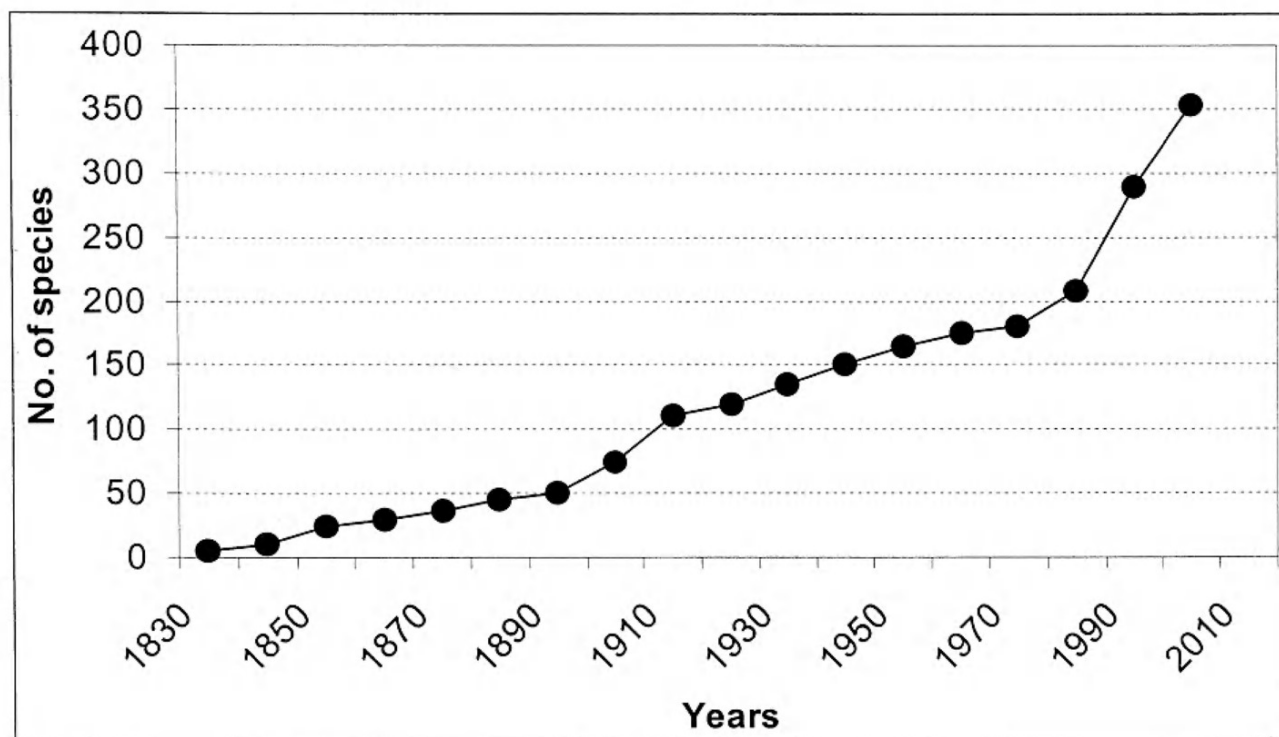


Figure 1. Cumulative numbers of living species of native mammals known to inhabit Bolivia. Data before 1990-2000 from Anderson (1997). Notice the sharp increase in the last 20 years.

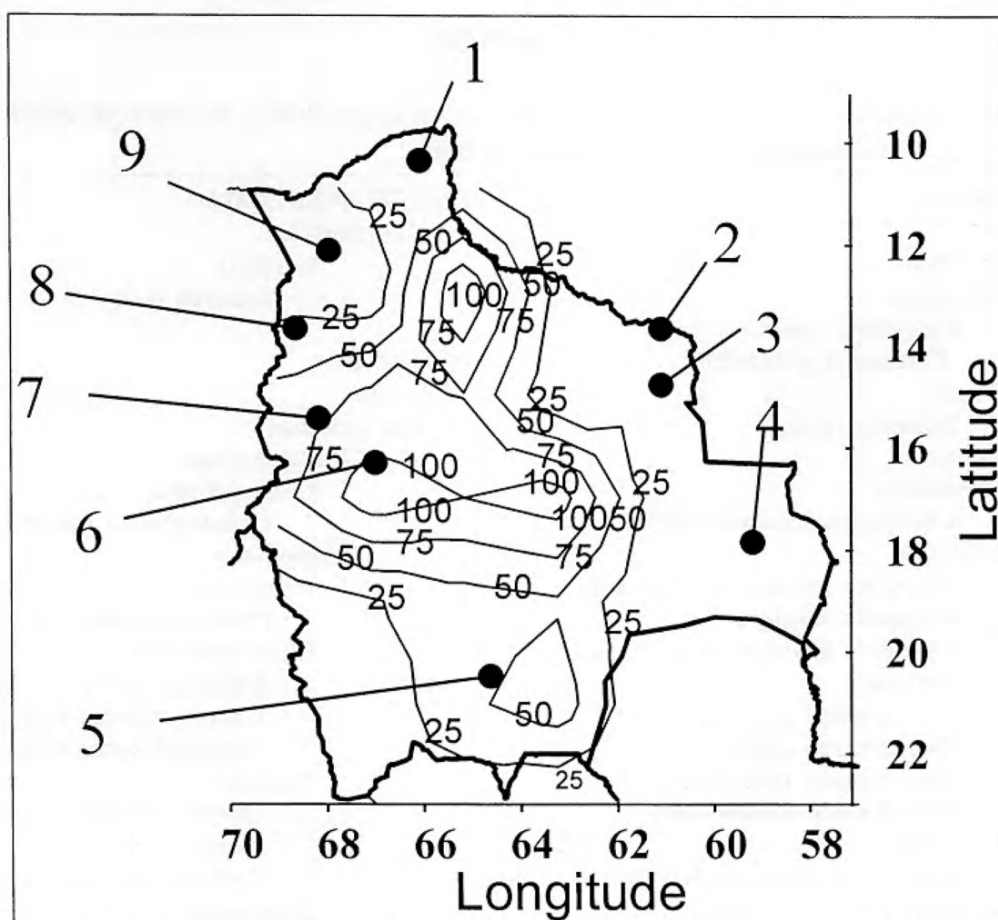


Figure 2. Geographic distribution of collecting localities for mammals in Bolivia with data available to 1994. The "contour lines" unite geographic areas with about the same number of trapping localities. Distribution of the newer records (those published between 1995-2001) are located outside the major roads and major navigable rivers and marked. Representative localities from where new records for Bolivian mammals (species within parentheses) have been reported: 1. San Juan del Nuevo Mundo (*Dactylomys dactylinus*, *Proechimys gardneri*); 2. Flor de Oro, Noel Kempf Mercado National Park (*Micoureus demerarae*, *Juscelinomys* spp., *Saccopteryx canescens*, *Natalus stramineus*); 3. El Refugio, Noel Kempff Mercado National Park (*Caluromys philander*, *Micronycteris microtis*); 4. Patuju (*Micronycteris sanborni*); 5. Rio Urucuti Basin (*Sciurus argentinus*, *Akodon* (*Hypsimys budini*)); 6. Tablas Monte (*Akodon kofordi*); 7. Estación Biológica Tunquini (*Oncifelis tigrinus*); 8. Madidi National Park (*Lagothrix cana tschudi*); 9. Santa Rosa (*Microsciurus flaviventer*).

CHECKLIST

To facilitate comparison between our list and that in Anderson (1997), we have presented it in the same order. Differences from Anderson (1997) are marked in bold.

DIDELPHIMORPHIA

Didelphidae

Caluromyinae

Caluromys

*Caluromys lanatus lanatus****Caluromys philander***

Glironia

Glironia venusta

Didelphinae

Chironectes

Chironectes minimus minimus

Didelphis

*Didelphis albiventris albiventris****Didelphis pernigra****Didelphis marsupialis marsupialis*

Gracilinanus

*Gracilinanus aceramarcae**Gracilinanus agilis****Gracilinanus chacoensis******Gracilinanus unduavensis***

Lutreolina

Lutreolina crassicaudata crassicaudata

Marmosa

*Marmosa lepida**Marmosa murina*

Marmosops

Marmosops bishopi***Marmosops ocellatus****Marmosops dorothea*

Metachirus

Metachirus nudicaudatus bolivianus

Micoureus

*Micoureus constantiae budini**Micoureus constantiae constantiae**Micoureus regina****Micoureus demerarae***

Monodelphis

*Monodelphis adusta****Monodelphis glirina****Monodelphis domestica**Monodelphis emiliae**Monodelphis kunsii**Monodelphis osgoodi*

Philander

Philander opossum canus

Thylamys

*Thylamys macrura**Thylamys pallidior**Thylamys pusilla**Thylamys venusta***PAUCITUBERCULATA**

Caenolestidae

Lestoros

*Lestoros inca***XENARTHRA****Cingulata**

Dasypodidae

Chlamyphorinae

Chlamyphorus

Chlamyphorus retusus retusus

Dasypodinae

Cabassous

Cabassous unicinctus squamicaudis

Chaetophractus

*Chaetophractus nationi**Chaetophractus vellerosus**Chaetophractus villosus*

Dasypus

*Dasypus kappleri beniensis**Dasypus novemcinctus novemcinctus**Dasypus septemcinctus*

Euphractus

Euphractus sexcinctus boliviae

Priodontes

Priodontes maximus

Tolypeutes

*Tolypeutes matacus***Pilosa**

Bradypodidae

Bradypus

*Bradypus variegatus***Cyclopedidae**

Cyclopes

*Cyclopes didactylus catellus***Megalonychidae**

Choloepinae

Choloepus

Choloepus hoffmanni

Myrmecophagidae

Myrmecophaga

Myrmecophaga tridactyla tridactyla

Tamandua

*Tamandua tetradactyla***CHIROPTERA**

Emballonuridae

Peropteryx

*Peropteryx kappleri**Peropteryx macrotis macrotis*

Checklist (cont.)

Rhynchonycteris	Glossophaginae
<i>Rhynchonycteris naso</i>	Anoura
Saccopteryx	<i>Anoura caudifer</i>
<i>Saccopteryx bilineata</i>	<i>Anoura cultrata</i>
<i>Saccopteryx leptura</i>	<i>Anoura geoffroyi geoffroyi</i>
<i>Saccopteryx canescens</i>	<i>Anoura geoffroyi peruana</i>
Noctilionidae	Choeroniscus
Noctilio	<i>Choeroniscus minor</i>
<i>Noctilio albiventris affinis</i>	Glossophaga
<i>Noctilio leporinus rufescens</i>	<i>Glossophaga soricina soricina</i>
Mormoopidae	Lichonycteris
Pteronotus	<i>Lichonycteris obscura</i>
<i>Pteronotus gymnonotus</i>	Caroliinae
<i>Pteronotus parnellii rubiginosus</i>	Carollia
<i>Pteronotus personatus personatus</i>	<i>Carollia brevicauda</i>
Phyllostomidae	<i>Carollia castanea</i>
Phyllostominae	<i>Carollia perspicillata</i>
Chrotopterus	Rhinophylla
<i>Chrotopterus auritus</i>	<i>Rhinophylla pumilio</i>
Glyphonycteris	Stenodermatinae
<i>Glyphonycteris daviesi</i>	Artibeus
Lonchorhina	<i>Artibeus anderseni</i>
<i>Lonchorhina aurita</i>	<i>Artibeus glaucus</i>
Lophostoma	<i>Artibeus gnomus</i>
<i>Lophostoma brasiliense</i>	<i>Artibeus jamaicensis fallax</i>
<i>Lophostoma carrikeri</i>	<i>Artibeus lituratus lituratus</i>
<i>Lophostoma silvicola</i>	<i>Artibeus obscurus</i>
Macrophyllum	Chiroderma
<i>Macrophyllum macrophyllum</i>	<i>Chiroderma salvini salvini</i>
Micronycteris	<i>Chiroderma trinitatum trinitatum</i>
<i>Micronycteris megalotis megalotis</i>	<i>Chiroderma villosum villosum</i>
<i>Micronycteris microtis</i>	Enchisthenes
<i>Micronycteris minuta</i>	<i>Enchisthenes hartii</i>
<i>Micronycteris sanborni</i>	Mesophylla
Mimon	<i>Mesophylla macconnelli macconnelli</i>
<i>Mimon crenulatum longifolium</i>	Platyrrhinus
Phylloderma	<i>Platyrrhinus brachycephalus</i>
<i>Phylloderma stenops boliviensis</i>	<i>Platyrrhinus dorsalis</i>
Phyllostomus	<i>Platyrrhinus helleri incarum</i>
<i>Phyllostomus discolor discolor</i>	<i>Platyrrhinus infuscus</i>
<i>Phyllostomus elongatus</i>	<i>Platyrrhinus lineatus lineatus</i>
<i>Phyllostomus hastatus hastatus</i>	<i>Platyrrhinus lineatus nigellus</i>
Tonatia	<i>Platyrrhinus vittatus</i>
<i>Tonatia saurophila maresi</i>	Pygoderma
Trachops	<i>Pygoderma bilabiatum magna</i>
<i>Trachops cirrhosus cirrhosus</i>	Sphaeronycteris
Trinycteris	<i>Sphaeronycteris toxophyllum</i>
<i>Trinycteris nicefori</i>	Sturnira
Vampyrum	<i>Sturnira erythromos</i>
<i>Vampyrum spectrum</i>	<i>Sturnira lilium lilium</i>
Lonchophyllinae	<i>Sturnira magna</i>
Lonchophylla	<i>Sturnira oporaphilum</i>
<i>Lonchophylla thomasi</i>	<i>Sturnira tildae</i>

Checklist (cont.)

- Uroderma
 Uroderma bilobatum bilobatum
 Uroderma bilobatum thomasi
 Uroderma magnirostrum
 Vampyressa
 Vampyressa bidens
 Vampyressa pusilla thyone
 Vampyroides
 Vampyroides caraccioli major
 Desmodontinae
 Desmodus
 Desmodus rotundus
Diaemus
 Diaemus youngi
 Diphylla
 Diphylla ecaudata
Natalidae
 Natalus
 Natalus stramineus
 Thyropteridae
 Thyroptera
 Thyroptera discifera discifera
 Thyroptera tricolor tricolor
 Vespertilionidae
 Vespertilioninae
 Dasypterus
 Dasypterus ega ega
 Eptesicus
 Eptesicus andinus
 Eptesicus furinalis gaumeri
 Eptesicus furinalis furinalis
 Histiotus
 Histiotus montanus laeophotis
 Histiotus velatus
 Lasiurus
 Lasiurus blossevillii blossevillii
 Lasiurus cinereus villosissimus
 Myotis
 Myotis albescens
 Myotis keaysi keaysi
 Myotis levis dinellii
 Myotis nigricans nigricans
 Myotis oxyotus oxyotus
 Myotis riparius
 Myotis simus
 Rhogeessa
 Rhogeessa tumida
 Molossidae
 Cynomops
 Cynomops abrasus
 Cynomops planirostris planirostris
- Eumops
 Eumops auripendulus auripendulus
 Eumops glaucinus glaucinus
 Eumops hansae
 Eumops patagonicus
 Eumops perotis perotis
 Eumops perotis trumbulli
 Molossops
 Molossops temmincki temmincki
 Molossus
 Molossus molossus crassicaudatus
 Molossus rufus
 Nyctinomops
 Nyctinomops aurispinosus
 Nyctinomops laticaudatus europs
 Nyctinomops laticaudatus laticaudatus
 Nyctinomops macrotis
 Promops
 Promops centralis occultus
 Promops nasutus ancilla
 Tadarida
 Tadarida brasiliensis brasiliensis
PRIMATES
 Callithricidae
 Callithricinae
 Callithrix
 Callithrix pygmaea niveiventris
 Callithrix melanura
 Saguinus
 Saguinus fuscicollis weddelli
 Saguinus imperator imperator
 Saguinus imperator subgriseus
 Saguinus melanoleucus crandalli
 Saguinus labiatus labiatus
 Callimico
 Callimico goeldii
 Cebidae
 Cebinae
 Cebus
 Cebus albifrons cuscinus
 Cebus albifrons albifrons
 Cebus libidinosus juruanus
 Cebus libidinosus paraguayanus
 Saimiri
 Saimiri boliviensis boliviensis
 Aotidae
 Aotus
 Aotus azarae azarae
 Aotus azarae boliviensis
 Aotus azarae infulatus
 Aotus nigriceps

Checklist (cont.)

Pitheciidae

Pithecia

*Pithecia irrorata irrorata***Callicebinae**

Callicebus

*Callicebus cupreus**Callicebus donacophilus**Callicebus dubius**Callicebus modestus**Callicebus olallae**Callicebus pallescens***Atelidae**

Alouattinae

Alouatta

*Alouatta caraya**Alouatta guariba**Alouatta sara*

Atelinae

Ateles

*Ateles chamek***Lagothrix***Lagothrix cana tschudii***CARNIVORA**

Canidae

Atelocynus

Atelocynus microtis

Cerdocyon

Cerdocyon thous entrerianus

Chrysocyon

*Chrysocyon brachyurus***Lycalopex***Lycalopex culpaeus andinus**Lycalopex gymnocercus gymnocercus*

Speothos

Speothos venaticus venaticus

Felidae

Felinae

Leopardus*Leopardus jacobita**Leopardus pardalis steinbachi**Leopardus wiedii boliviae***Oncifelis***Oncifelis geoffroyi ssp.**Oncifelis pajeros ssp.**Oncifelis tigrina***Puma***Puma concolor acrocodia**Puma concolor concolor**Puma yagouaroundi eyra*

Pantherinae

Panthera

*Panthera onca palustris**Panthera onca peruviana*

Mustelidae

Lutrinae

Lontra*Lontra longicaudis enudris*

Pteronura

Pteronura brasiliensis paranensis

Mustelinae

Eira

*Eira barbara barbara**Eira barbara peruana*

Galictis

*Galictis cuja luteola**Galictis vittata andina*

Mustela

*Mustela frenata boliviensis***Mephitidae**

Conepatus

Conepatus chinga rex

Procyonidae

Potosinae

Bassaricyon

Bassaricyon alleni

Potos

Potos flavus chapadensis

Procyoninae

Nasua

*Nasua nasua boliviensis**Nasua nasua dorsalis**Nasua nasua spadicea*

Procyon

Procyon cancrivorus cancrivorus

Ursidae

Ursinae

Tremarctos

*Tremarctos ornatus***CETACEA****Iniidae**

Inia

*Inia boliviensis***PERISSODACTYLA**

Tapiridae

Tapirus

*Tapirus terrestris spegazzinii***ARTIODACTYLA**

Tayassuidae

Catagonus

*Catagonus wagneri***Pecari***Pecari tajacu tajacu*

Checklist (cont.)

Tayassu	Oligoryzomys
<i>Tayassu pecari albirostris</i>	<i>Oligoryzomys andinus</i>
Camelidae	<i>Oligoryzomys chacoensis</i>
Lama	<i>Oligoryzomys destructor</i>
<i>Lama glama</i>	<i>Oligoryzomys</i> sp. B (flavescens group)
<i>Lama guanicoe guanicoe</i>	<i>Oligoryzomys microtis</i>
<i>Lama pacos</i>	Oryzomys
Vicugna	<i>Oryzomys legatus</i>
<i>Vicugna vicugna</i>	<i>Oryzomys levipes</i>
Cervidae	<i>Oryzomys nitidus</i>
Odocoileinae	<i>Oryzomys perenensis</i>
Blastoceros	<i>Oryzomys subflavus</i>
<i>Blastoceros dichotomus</i>	<i>Oryzomys yunganus</i>
Hippocamelus	Pseudoryzomys
<i>Hippocamelus antisensis</i>	<i>Pseudoryzomys simplex</i>
Mazama	Tribe Thomasomyini
<i>Mazama americana</i>	Rhipidomys
<i>Mazama chunyi</i>	<i>Rhipidomys austrinus</i>
<i>Mazama gouazoubira</i>	<i>Rhipidomys leucodactylus</i>
Odocoileus	<i>Rhipidomys</i> sp1
<i>Odocoileus peruvianus</i>	Thomasomys
Ozotoceros	<i>Thomasomys aureus aureus</i>
<i>Ozotoceros bezoarticus leucogaster</i>	<i>Thomasomys daphne australis</i>
RODENTIA	<i>Thomasomys ladewi</i>
Sciuridae	<i>Thomasomys oreas</i>
Sciurinae	<i>Thomasomys taczanowskii</i>
Sciurus	Tribe Akodontini
<i>Sciurus ignitus boliviensis</i>	Akodon
<i>Sciurus ignitus ignitus</i>	<i>Akodon aerosus baliolus</i>
<i>Sciurus spadiceus</i>	<i>Akodon albiventer berlepschii</i>
<i>Sciurus argentinius</i>	<i>Akodon boliviensis</i>
Microsciurus	<i>Akodon (Hypsims) budini</i>
<i>Microsciurus flaviventer</i>	<i>Akodon dayi</i>
Muridae	<i>Akodon fumeus</i>
Sigmodontinae	<i>Akodon kofordi</i>
Tribe Oryzomyini	<i>Akodon lutescens caenosus</i>
Holochilus	<i>Akodon lutescens lutescens</i>
<i>Holochilus sciureus amazonicus</i>	<i>Akodon lutescens puer</i>
Microryzomys	<i>Akodon mimus</i>
<i>Microryzomys minutus</i>	<i>Akodon pervalens</i>
Neacomys	<i>Akodon siberiae</i>
<i>Neacomys spinosus spinosus</i>	<i>Akodon simulator tartareus</i>
Nectomys	<i>Akodon subfuscus subfuscus</i>
<i>Nectomys apicalis</i>	<i>Akodon toba</i>
Oecomys	<i>Akodon varius</i>
<i>Oecomys bicolor</i>	Bolomys
<i>Oecomys concolor</i>	<i>Bolomys amoenus</i>
<i>Oecomys mamorae</i>	<i>Bolomys lactens lactens</i>
<i>Oecomys roberti</i>	<i>Bolomys lasiurus</i>
<i>Oecomys cf. trinitatus</i>	

Checklist (cont.)

Juscelinomys	Phyllotis
<i>Juscelinomys guaporensis</i>	<i>Phyllotis caprinus</i>
<i>Juscelinomys huanchacae</i>	<i>Phyllotis osilae osilae</i>
Kunsia	<i>Phyllotis osilae phaeus</i>
<i>Kunsia tomentosus tomentosus</i>	<i>Phyllotis wolffsohni</i>
Lenoxus	<i>Phyllotis xanthopygus rupestris</i>
<i>Lenoxus apicalis boliviae</i>	<i>Phyllotis xanthopygus chilensis</i>
Oxymycterus	Tapecomys
<i>Oxymycterus hiska</i>	<i>Tapecomys primus</i>
<i>Oxymycterus hucucha</i>	Tribe Ichthyomyini
<i>Oxymycterus inca inca</i>	Chibchanomys
<i>Oxymycterus inca iris</i>	<i>Chibchanomys</i> sp.
<i>Oxymycterus juliacae doris</i>	Incertae sedis
<i>Oxymycterus nigrifrons</i> ssp.1	Andinomys
<i>Oxymycterus paramensis jacentior</i>	<i>Andinomys edax edax</i>
<i>Oxymycterus paramensis paramensis</i>	Chinchillula
Tribe "andean clade"	<i>Chinchillula sahamae</i>
Abrothrix	Neotomys
<i>Abrothrix andinus dolichonyx</i>	<i>Neotomys ebriosus ebriosus</i>
Chroeomys	<i>Neotomys ebriosus vulturinus</i>
<i>Chroeomys jelskii bacchante</i>	Brethizontidae
<i>Chroeomys jelskii ochrotis</i>	Coendou
<i>Chroeomys jelskii pulcherrimus</i>	<i>Coendou prehensilis boliviensis</i>
<i>Chroeomys jelskii sodalis</i>	<i>Coendou bicolor simonsi</i>
Tribe Phyllotini	Chinchillidae
Andalgalomys	Chinchilla
<i>Andalgalomys pearsoni</i>	<i>Chinchilla brevicaudata</i>
Auliscomys	Lagidium
<i>Auliscomys boliviensis boliviensis</i>	<i>Lagidium viscacia cuscus</i>
<i>Auliscomys pictus</i>	<i>Lagidium viscacia cuvieri</i>
<i>Auliscomys sublimis leucurus</i>	<i>Lagidium viscacia perlutea</i>
<i>Auliscomys sublimis sublimis</i>	Lagostomus
Calomys	<i>Lagostomus maximus inmolis</i>
<i>Calomys callosus callosus</i>	Dinomyidae
<i>Calomys laucha</i>	Dinomys
<i>Calomys lepidus carillus</i>	<i>Dinomys branickii</i>
<i>Calomys lepidus ducillus</i>	Caviidae
<i>Calomys musculus</i>	Caviinae
<i>Calomys tener</i>	Cavia
<i>Calomys fecundus</i>	<i>Cavia porcellus</i>
<i>Calomys boliviae</i>	<i>Cavia tschudi nana</i>
Eligmodontia	Galea
<i>Eligmodontia puerulus</i>	<i>Galea musteloides auceps</i>
Galenomys	<i>Galea musteloides demissa</i>
<i>Galenomys garleppii</i>	<i>Galea musteloides musteloides</i>
Graomys	<i>Galea spixii campicola</i>
<i>Graomys domorum domorum</i>	Microcavia
<i>Graomys domorum taterona</i>	<i>Microcavia niata niata</i>
<i>Graomys griseoflavus griseoflavus</i>	<i>Microcavia niata pallidior</i>

Checklist (cont.)

Dolichotinae	Echimyidae
Dolichotis	Dactylomyinae
<i>Dolichotis salinicola salinicola</i>	Dactylomys
Hydrochaeridae	<i>Dactylomys boliviensis</i>
Hydrochaeris	<i>Dactylomys dactylinus</i>
<i>Hydrochaeris hydrochaeris hydrochaeris</i>	<i>Dactylomys peruanus</i>
Dasyproctidae	Echimyinae
Dasyprocta	Makalata
<i>Dasyprocta punctata boliviae</i>	<i>Makalata didelphoides</i>
<i>Dasyprocta punctata urucuma</i>	Isothrix
<i>Dasyprocta punctata yungarum</i>	<i>Isothrix bistrata</i>
Myoprocta	Eumysopinae
<i>Myoprocta pratti</i>	Mesomys
Cuniculidae	<i>Mesomys hispidus</i>
Cuniculus	Proechimys
<i>Cuniculus paca paca</i>	<i>Proechimys gardneri</i>
<i>Cuniculus taczanowskii</i>	<i>Proechimys brevicauda</i>
Ctenomyidae	<i>Proechimys hilda</i>
Ctenomys	<i>Proechimys longicaudatus</i>
<i>Ctenomys boliviensis boliviensis</i>	<i>Proechimys simonsi</i>
<i>Ctenomys conoveri</i>	<i>Proechimys steerei</i>
<i>Ctenomys frater frater</i>	Thrichomys
<i>Ctenomys frater mordosus</i>	<i>Thrichomys apereoides fosteri</i>
<i>Ctenomys goodfellowi</i>	Myocastoridae
<i>Ctenomys leucodon</i>	Myocastor
<i>Ctenomys lewisi</i>	<i>Myocastor coypus popelairi</i>
<i>Ctenomys minutus</i>	
<i>Ctenomys nattereri</i>	LAGOMORPHA
<i>Ctenomys opimus opimus</i>	Leporidae
<i>Ctenomys steinbachi</i>	Sylvilagus
Octodontidae	<i>Sylvilagus brasiliensis gibsoni</i>
Octodontomys	<i>Sylvilagus brasiliensis inca</i>
<i>Octodontomys gliroides</i>	<i>Sylvilagus brasiliensis paraguensis</i>
Abrocomidae	
Abrocoma	
<i>Abrocoma boliviensis</i>	
<i>Abrocoma cinerea cinerea</i>	

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LITERATURE CITED

- Aguirre, L. F. 1998. 106 species and counting: bat conservation comes to Bolivia, *Bats* 16:3-4.
- Anderson, S. 1993. Los mamíferos bolivianos: Notas de distribución y claves de identificación. Instituto de Ecología, Universidad Mayor de San Andrés, La Paz, Bolivia, 159 pp.
- Anderson, S. 1997. Mammals of Bolivia: taxonomy and distribution. *Bulletin of the American Museum of Natural History*, 231:1-652.
- Anderson, S., and T. L. Yates. 2000. A new genus and species of phyllotine rodent from Bolivia, *Journal of Mammalogy* 81:37-51.
- Aquino, R. and F. Encarnacion. 1994. Primates of Peru / Los Primates del Perú. *Primate Report* 40:1-127.
- Baker, R. J., C. A. Porter, J. C. Patton, and R. A. Van Den Bussche. 2000. Systematics of bats of the family Phyllostomidae based on RAG2 DNA sequences, *Occasional Papers Museum of Texas Tech University* 202:1-16.
- Barquez, R. M., M. A. Mares, and J. K. Braun. 1999. The bats of Argentina. *Special publications, Museum of Texas Tech University* 42:1-275.
- Bininda-Emonds, O. R. P., J. L. Gittleman, and A. Purvis. 1999. Building large trees by combining phylogenetic information: a complete phylogeny of the extant Carnivora (Mammalia), *Biological Reviews* 74:143-175.
- Boinski, S., and S. J. Cropp. 1999. Disparate data sets resolve squirrel monkey (*Saimiri*) taxonomy: Implications for behavioral ecology and biomedical usage, *International Journal of Primatology* 20:237-256.
- Brandon-Jones, D. and C. P. Groves. 2002. Neotropical primate family-group names replaced by Groves (2001) in contravention of Article 40 of the International Code of Zoological Nomenclature, *Neotropical Primates* 10(3). In press.
- Brooks, D. M., T. Tarifa, J. M. Rojas, R. J. Vargas, and H. Aranibar. 2002. A preliminary assessment of the mammalian fauna of the eastern Bolivian panhandle, *Mammalia* 65:509-520.
- Buchanan-Smith, H. M., S. M. Hardie, C. Cáceres, and M. J. Prescott. 2000. Distribution and forest utilization of *Saguinus* and other primates of the Pando department, northern Bolivia, *International Journal of Primatology* 21:353-379.
- Cabrera, A. 1957. Catalogo de los mamíferos de América del Sur. *Revista del Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" e Instituto Nacional de Investigaciones de las Ciencias Naturales, Zoología* 4:1-305.
- Canavez, F. C., M. A. M. Moreira, F. Simon, P. Parham, and H. N. Seuanez. 1999. Phylogenetic relationships of the Callitrichinae (Platyrrhini, Primates) based on beta(2)-microglobulin DNA sequences, *American Journal of Primatology* 48:225-236.
- Carleton, M. D. and G. G. Musser. 1989. Systematic studies of oryzomyine rodents (Muridae, Sigmodontinae): a synopsis of *Microryzomys*, *Bulletin of the American Museum of Natural History* 191:1-83.
- Chauca de Zaldivar, L. C. 1997. Producción de cuyes (*Cavia porcellus*). *Estudios FAO: Producción y Sanidad Animal* 138. Organización de las Naciones Unidas para la Agricultura y la Alimentación, Roma. 77pp.
- Collins, A. C. 2001. The importance of sampling for reliable assessment of phylogenetics and conservation among Neotropical Primates: A case study in Spider Monkeys (*Ateles*), *Primate Report* 61:9-30.
- Collins, A. C., and J. M. Dubach. 2000a. Phylogenetic relationships of Spider Monkeys (*Ateles*) based on mitochondrial DNA variation, *International Journal of Primatology* 21:381-420.

- Collins, A. C., and J. M. Dubach. 2000b. Biogeographic and ecological forces responsible for speciation in *Ateles*, International Journal of Primatology 21:421-444.
- Collins, A. C., and J. M. Dubach. 2001. Nuclear DNA variation in Spider Monkeys (*Ateles*), Molecular Phylogenetics and Evolution 19:67-75.
- Culver, M., W. E. Johnson, J. Pecon Slattery, and S. J. O'Brien. 2000. Genomic ancestry of the American puma (*Puma concolor*), Journal of Heredity 91:186-197.
- Cropp, S., and S. Boinski. 2000. The Central American squirrel monkey (*Saimiri oerstedii*): Introduced hybrid or endemic species?, Molecular Phylogenetics and Evolution 16:350-365.
- Defler, T. R. and J. I. Hernández-Camacho. 2002. The true identity and characteristics of *Simia albifrons* Humboldt, 1812: Description of neotype, Neotropical Primates 10:49-64.
- Delsuc, F., F. M. Catzeflis, M. J. Stanhope, and E. J. P. Douzery. 2001. The evolution of armadillos, anteaters and sloths depicted by nuclear and mitochondrial phylogenies: implications for the status of the enigmatic fossil Eurotamandua, Proceedings of the Royal Society Biological Sciences Series B 268:1605-1615.
- Delsuc, F., M. Scally, O. Madsen, M. J. Stanhope, W. W. De Jong, F. M. Catzeflis, M. S. Springer, E. J. P. Douzery. 2002. Molecular phylogeny of living xenarthrans and the impact of character and taxon sampling on the placental tree rooting, Molecular Biology and Evolution 19:1656-1671.
- Dragoo, J. W., and R. L. Honeycutt. 1997. Systematics of mustelid-like carnivores, Journal of Mammalogy 78:426-443.
- Eisenberg, J. F., and K. H. Redford. 1999. Mammals of the Neotropics, Volume 3, The central Neotropics: Ecuador, Peru, Bolivia, Brazil. The University of Chicago Press, Chicago.
- Emmons, L. 1997. Mammals of the Rio Urucuti basin, south central Chuquisaca, Bolivia, Pp. 30-33, App. 4-5 in A rapid assessment of the humid forest of south central Chuquisaca, Bolivia (T. S. Schulenberg and K. Awbrey, eds.). Conservation International, RAP working papers 8, Washington, D.C.
- Emmons, L. 1998. Mammal fauna of the Parque Nacional Noel Kempf Mercado, Pp. 129-135, App. 3 in A biological assessment of Parque Nacional Noel Kempf Mercado, Bolivia (T. J. Killeen and T. S. Schulenberg, eds.). Conservation International, RAP working papers 10, Washington, D.C.
- Emmons, L. H. 1999. Two new species of *Juscelinomys* (Rodentia: Muridae) from Bolivia, American Museum Novitates 3280:1-15.
- Emmons, L. H. 2002. Mammal fauna of northeastern Pando, Bolivia, 1992. Pp. 79-82, App. 5 in Informes de las evaluaciones biológicas Pampas del Heath, Perú, Alto Madidi, Bolivia y Pando, Bolivia (J. R. Montambault, ed.). Conservation International, RAP Bulletin of Biological Assessment 24, Washington, D.C.
- Emmons, L. H., L. Luna, and M. Romo. 2001. Mammals of the northern Vilcabamba mountain range, Peru, Pp. 105-109, App. 16 in Biological and social assessments of the Cordillera de Vilcabamba, Peru (L. E. Alonso, A. Alonso, T. S. Schulenberg and F. Dallmeier, eds.), Conservation International, RAP working papers 12 and SI/MAB series 6, Washington, D.C.
- Flueck, W. T. 2000. Observaciones sobre las clasificaciones erróneas de huemul, taruca y *Cervus brachyceros* hechas por Philippi (1894). Pp. 59-66 in El huemul Patagónico: Un misterioso cérvido al borde de la extinción (N. I. Diaz and J. A. Smith-Flueck eds.), Literature of Latin America, Buenos Aires.
- Flynn, J. J., M. A. Nedbal, J. W. Dragoo, and R. L. Honeycutt. 2000. Whence the red panda?, Molecular Phylogenetics and Evolution 17:190-199.
- Ford, S. M. 1994. Taxonomy and distribution of the owl monkey. Pp. 1-57 in *Aotus: The Owl Monkey* (J. F. Baer, R. E. Weller, and I. Kakoma eds.), Academic Press, San Diego, California.
- Froelich, J. W., J. Supriarna, and P. H. Froehlich. 1991. Morphometric analyses of *Ateles*: Systematic and biogeographic implications, American Journal of Primatology 25:1-22.
- Galliani, C. A., and U. F. J. Pardiñas. 2000. Taxonomy and distribution of the sigmodontine rodents of genus *Necomys* in central Argentina and Uruguay, Acta Theriologica 45:211-232.
- García-Perea, R. 1994. The Pampas cat group (Genus *Lynchailurus* Severtzov, 1858) (Carnivora: Felidae), a systematic and biogeographic review, American Museum Novitates 3096: 1-36.
- García-Perea, R. 2002. Andean mountain cat, *Oreailurus jacobita*, morphological description and comparison with other felines from the altiplano, Journal of Mammalogy 83:110-124.
- Gardner, A. L. 1993a. Order Didelphimorphia. Pp. 15-23 in Mammal species of the world, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Gardner, A. L. 1993b. Order Paucituberculata. Pp. 25 in Mammal species of the world, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Gardner, A. L. 1993c. Order Xenarthra. Pp. 63-68 in Mammal species of the world, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Gardner, A. L. 1999. *Cervus gouazoubira* Fischer, 1814 (currently *Mazama gouazoubira*; Mammalia, Artiodactyla): Proposed conservation as the correct original spelling, Bulletin of Zoological Nomenclature 56:262-265.

- Gaudin, T. J. and D. G. Branham. 1998. The phylogeny of the Myrmecophagidae (Mammalia, Xenarthra, Vermilingua) and the relationship of *Eurotamandua* to the Vermilingua, *Journal of Mammalian Evolution* 5:237-265.
- Groves, C. P. 1993. Order Primates. Pp. 243-277 in *Mammal species of the world*, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Groves, C. P. 2001. Primate taxonomy. Smithsonian Institution Press, Washington, D.C. viii + 350 pp.
- Grubb, P. 1993. Order Artiodactyla, Pp. 377-414 in *Mammal Species of the World* (D. E. Wilson and D. M. Reeder, eds.), Smithsonian Institution Press, Washington, D.C.
- Grubb, P., and A. L. Gardner. 1998. List of species and subspecies of the families Tragulidae, Moschidae and Cervidae, Pp. 6-16 in *Deer: status survey and conservation action plan* (A. McCarthy, R. Blouch, D. Moore and C. M. Wemmer, eds.), IUCN, Gland, Switzerland.
- Grubb, P., and C. P. Groves. 1993. The Neotropical Peccaries – Dicotylidae in Pigs, peccaries, and hippos: status survey and conservation action plan (W. L. R. Oliver, ed.), IUCN, Gland, Switzerland.
- Handley, C. O., Jr. 1987. New species of mammals from northern South America: Fruit-eating bats, genus *Artibeus* Leach, *Fieldiana Zoology* n.s. 39:163-172.
- Hamilton, H., S. Caballero, A. G. Collins, and R. L. Brownell, Jr. 2001. Evolution of river dolphins, *Proceedings of the Royal Society Biological Sciences Series B* 268:549-556.
- Hershkovitz, P. 1949. Mammals of northern Colombia. Preliminary report No. 4: Monkeys (Primates), with taxonomic revisions of some forms, *Proceedings of the U. S. National Museum* 98:323-427.
- Hershkovitz, P. 1959. A new species of South American brocket, genus *Mazama* (Cervidae), *Proceedings of the Biological Society of Washington* 72:45-54.
- Hershkovitz, P. 1977. Living New World monkeys (Platyrrhini), Volume 1. The University of Chicago Press, Chicago.
- Hershkovitz, P. 1983. Two new species of night monkeys, genus *Aotus* (Cebidae, Platyrrhini): A preliminary report on *Aotus* taxonomy, *American Journal of Primatology* 4: 209-243.
- Hershkovitz, P. 1988. Origin, speciation and distribution of South American Titi monkeys genus *Callicebus* (Family Cebidae, Platyrrhini), *Proceedings of the Academy of Natural Sciences of Philadelphia* 140:240-272.
- Hershkovitz, P. 1990. Titis, New World monkeys of the genus *Callicebus* (Cebidae, Platyrrhini): a preliminary taxonomic review, *Fieldiana Zoology* 55:i-vi + 1-109.
- Hill, W. C. O. 1962. Primates: comparative anatomy and taxonomy. Cebidae, Part B, Edinburgh University Press, John Wiley, New York.
- International Commission on Zoological Nomenclature. 1998. Opinion 1894, *Bulletin of Zoological Nomenclature* 55: 64-71.
- International Commission on Zoological Nomenclature. 1999. International Code of Zoological Nomenclature, Fourth Edition. The International Trust for Zoological Nomenclature, London.
- Izawa, I., and G. Bejarano. 1981. Distribution ranges and patterns of nonhuman Primates in western Pando, Bolivia, *Kyoto University Overseas Research Report New World Monkeys* 1981:1-12.
- Jiménez, J. E. 1996. The extirpation and current status of wild chinchillas *Chinchilla lanigera* and *C. brevicaudata*. *Biological Conservation* 77:1-6.
- Johnson, W.E., M. Culver, J. A. Iriarte, E. Eizirik, K. L. Seymour, and S. J. O'Brien. 1998. Tracking the evolution of the elusive Andean mountain cat (*Oreailurus jacobita*) from mitochondrial DNA, *Journal of Heredity* 89:227-232.
- Johnson, W. E., et al. 1999. Disparate phylogeographic patterns of molecular genetic variation in four closely related South American small cat species, *Molecular Ecology* 8:S79-S94.
- Jungius, H. 1974. Beobachtungen am Weisswedelhirsch und an anderen Cerviden in Bolivien, *Zeitschrift für Säugetierkunde* 39:373-383.
- Kellogg R. and E. A. Goldman. 1944. Review of the spider monkeys, *Proceedings of the U. S. National Museum* 96: 1-45.
- Koopman, K. F. 1993. Order Chiroptera. Pp. 137-241 in *Mammal species of the world*, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Larivière, S. 1999. *Lontra longicaudis*, *Mammalian Species* 609:1-5.
- Larivière, S. and L. R. Walton. 1998. *Lontra canadensis*, *Mammalian Species* 587:1-8.
- Lee, T. E., S. R. Hoofer, and R. A. Van Den Bussche. 2002. Molecular phylogenetics and taxonomic revision of the genus *Tonatia* (Chiroptera: Phyllostomidae), *Journal of Mammalogy* 83:49-57.
- Lemos, B., and R. Cerqueira. 2002. Morphological differentiation in the white-eared opossum group (Didelphidae: *Didelphis*), *Journal of Mammalogy* 83:354-369.
- Luckett, W. P., and N. Hong. 1998. Phylogenetic relationships between the orders Artiodactyla and Cetacea: A combined assessment of morphological and molecular evidence, *Journal of Mammalian Evolution* 5:127-182.
- Mascheretti, S., P. M. Mirol, M. D. Gimenez, C. J. Bidau, J. R. Contreras, and J. B. Searle. 2000. Phylogenetics of the speciose and chromosomally variable rodent genus *Ctenomys* (Ctenomyidae, Octodontoidea), based on mitochondrial cytochrome b sequences, *Biological Journal of the Linnean Society* 70:361-376.
- Massoia, E., and U. F. J. Pardiñas. 1993. El estado sistemático de algunos muroideos estudiados por Ameghino en 1889. Revalidación del género *Necromys* (Mammalia, Rodentia, Cricetidae), *Ameghiniana* 30:407-418.

- Mattern, M. Y., and D. A. McLennan. 2000. Phylogeny and speciation of felids, *Cladistics* 16:232-253.
- McKenna, M. C. and S. K. Bell. 1997. Classification of mammals above the species level. Columbia University Press, New York.
- Medeiros, M. A., R. M. S. Barros, J. C. Pieczarka, C. Y. Nagamachi, M. Ponsa, M. García, F. García, and J. Egozcue. 1997. Radiation and speciation of spider monkeys, genus *Ateles*, from the cytogenetic viewpoint, *American Journal of Primatology* 42:167-178.
- Mittermeier, R. A., A. B. Rylands, and A. F. Coimbra-Filho. 1988. Systematics: Species and subspecies – an update. Pp. 13-75 in *Ecology and Behavior of Neotropical Primates*, Volume 2 (R. A. Mittermeier, A. B. Rylands, A. F. Coimbra-Filho, and G. A. B. da Fonseca eds.), World Wildlife Fund, Washington, D.C.
- Moojen, J. 1942. Sobre os "ciurideos" das colecoes do Museu Nacional, do Departamento de Zoologia de S. Paulo e do Museu Paraense Emilio Goeldi, *Boletim do Museu Nacional (Rio de Janeiro)*, nov. ser. (Zool.) 1:1-52.
- Molina, M., and J. Molinari. 1999. Taxonomy of Venezuelan white-tailed deer (*Odocoileus*, Cervidae, Mammalia), based on cranial and mandibular traits, *Canadian Journal of Zoology-Revue Canadienne De Zoologie* 77:632-645.
- Morales, J. C., and J. W. Bickham. 1995. Molecular systematics of the genus *Lasiurus* (Chiroptera, Vespertilionidae) based on restriction site maps of the mitochondrial ribosomal genes, *Journal of Mammalogy* 76:730-749.
- Moynihan, M. 1976. The New World primates. Adaptive radiation and the evolution of social behavior, languages, and intelligence. Princeton University Press, Princeton, N.J.
- Musser, G. G., M. D. Carleton, E. M. Brothers, and A. L. Gardner. 1998. Systematic studies of oryzomyine rodents (Muridae, Sigmodontinae): Diagnoses and distributions of species formerly assigned to *Oryzomys* "capito", *Bulletin of the American Museum of Natural History* 236:1-376.
- Napier, P. H. 1976. Catalogue of the Primates in the British Museum (Natural History). Part I. Families Callitrichidae and Cebidae. British Museum (Natural History), London.
- Natori, M. 1994. Craniometrical variations among eastern Brazilian marmosets and their systematic relationships, *Primates* 35:167-176.
- Neusser, M., R. Stanyon, F. Bigoni, J. Wienberg, and S. Mueller. 2001. Molecular cytogenetics of New World monkeys (Platyrrhini) - comparative analysis of five species by multi-color chromosome painting gives evidence for a classification of *Callimico goeldii* within the family of Callitrichidae, *Cytogenetics and Cell Genetics* 94:206-215.
- Nikaido, M., A. P. Rooney, and N. Okada. 1999. Phylogenetic relationships among cetartiodactyls based on insertions of short and long interspersed elements: Hippopotamuses are the closest extant relatives of whales, *Proceedings of the National Academy of Sciences, USA* 96:10261-10266.
- Oliveira, J. A. De. 1998. Morphometric assessment of species groups in the South American rodent genus *Oxymycterus* (Sigmodontinae), with taxonomic notes based on the analysis of type material. PhD Dissertation, Texas Tech University, Lubbock, Texas.
- Owen, R. D. 1987. Phylogenetic analyses of the bat subfamily Stenodermatinae (Mammalia: Chiroptera). Special publications, Museum of Texas Tech University 26:1-65.
- Pacheco, L. F., J. F. Guerra, S. L. Deem, and C. P. Frías. 2001. Primer registro de *Leopardus tigrinus* (Shreber, 1775) en Bolivia, *Ecología en Bolivia* 36:75-78.
- Patton, J. L., M. N. F. Da Silva, and J. R. Malcolm. 2000. Mammals of the Rio Juruá and the evolutionary and ecological diversification of Amazonia, *Bulletin of the American Museum of Natural History* 244:1-306.
- Porter, L., and E. Nacimiento. 2000. Other large mammals, Pp. 43-44, App. 5 in *Bolivia: Pando, Río Tahuamanu*. (W. S. Alverson, D. K. Moskovits and J. M. Shopland, eds.). The Field Museum. Rapid Biological Inventories Report 1, Chicago, Illinois.
- Reiss, K. Z. 1997. Myology of the feeding apparatus of myrmecophagid anteaters (Xenarthra: Myrmecophagidae), *Journal of Mammalian Evolution* 4:87-117.
- Rosenberger, A. L. 1981. Systematics: The higher taxa. Pp. 9-27 in *Ecology and Behavior of Neotropical Primates*, Volume 1 (A. F. Coimbra-Filho and R. A. Mittermeier eds.), Academia Brasileira de Ciencias, Rio de Janeiro.
- Rylands, A. B., A. F. Coimbra-Filho, and R. A. Mittermeier. 1993. Systematics, geographic distribution, and some notes on the conservation status of the Callitrichidae. Pp. 11-77, in: A. B. Rylands (ed.) *Marmosets and Tamarins: Systematics, behaviour, and ecology*. Oxford University Press. Oxford.
- Rylands, A. B., H. Schneider, A. Langguth, R. A. Mittermeier, C. P. Groves and E. Rodriguez-Luna. 2000. An assessment of the diversity of New World Primates, *Neotropical Primates* 8:61-93.
- Salazar-Bravo, J., J. W. Dragoo, D. S. Tinnin, and T. L. Yates. 2001. Phylogeny and evolution of the Neotropical rodent genus *Calomys*: Inferences from mitochondrial DNA sequence data, *Molecular Phylogenetics and Evolution* 20:173-184.
- Salazar-Bravo, J., E. Yensen, T. Tarifa, and T. L. Yates. 2002a. Distributional records of Bolivian mammals, *Mastozoología Neotropical* 9:70-78.

- Salazar-Bravo, J., J. W. Dragoo, M. D. Bowen, C. J. Peters, T. G. Ksiazek, and T. L. Yates. 2002b. Natural nidality in Bolivian hemorrhagic fever and the systematics of the reservoir species, *Infection, Genetics and Evolution* 1:191-199.
- Salazar-Bravo, J., T. L. Yates, and M. Zalles. 2002c. Mamíferos de Bolivia. Pp. 65-113 in *Diversidad y conservación de los mamíferos de Latinoamérica* (G. Ceballos and J. Simmonetti eds.), CONABIO-UNAM. Mexico, D.F.
- Salles, L. O. 1992. Felid phylogenetics: extant taxa and skull morphology (Felidae, Aeluroidea), *American Museum Novitates* 3047:1-67.
- Schneider, H., F. C. Canavez, I. Sampaio, M. A. M. Moreira, C. H. Tagliaro, and H. N. Seunanz. 2001. Can molecular data place each neotropical monkey in its own branch?, *Chromosoma* 109:515-523.
- Seymour, K. L. 1999. Taxonomy, morphology, paleontology and phylogeny of the South American small cats (Mammalia: Felidae). PhD Dissertation, University of Toronto, Ontario, Canada.
- Solari, S., E. Vivar, P. Velasco, and J. J. Rodríguez. 2001. Small mammals of the southern Vilcabamba region, Peru, Pp. 110-116, App. 19 in *Biological and social assessments of the Cordillera de Vilcabamba, Peru* (L. E. Alonso, A. Alonso, T. S. Schulenberg and F. Dallmeier, eds.), Conservation International, RAP working papers 12 and SI/MAB series 6, Washington, D.C.
- Silva Jr. J. de S. 2001. Especiação nos macacos-prego e caiararas, gênero *Cebus* Erxleben, 1777 (Primates, Cebidae). Doctoral thesis, Universidade Federal do Rio de Janeiro, Rio de Janeiro. 377 pp.
- Silva, M. N. da 1998. Four new species of spiny rats of the genus *Proechimys* (Rodentia: Echimyidae) from the western Amazon of Brazil, *Proceedings of the Biological Society of Washington* 111:436-471.
- Simmons, N. B., and R. Voss. 1998. The mammals of Paracou, French Guiana. A neotropical lowland rainforest fauna, Part 1: Bats, *Bulletin of the American Museum of Natural History* 237:1-219.
- Smith, M. F., and J. L. Patton. 1999. Phylogenetic relationships and the radiation of sigmodontine rodents in South America: Evidence from cytochrome b, *Journal of Mammalian Evolution* 6:89-128.
- Stanyon, R., S. Tofanelli, M. A. Morescalchi, G. Agoramoorthy, O. A. Ryder, and J. Wienberg. 1995. Cytogenetic analysis shows extensive genomic rearrangements between Red Howler (*Alouatta seniculus*, Linnaeus) subspecies, *American Journal of Primatology* 35:171-183.
- Steppan, S. J. 1995. Revision of the tribe Phyllotini (Rodentia: Sigmodontinae), with a phylogenetic hypothesis for the Sigmodontinae, *Fieldiana. Zoology, new series* 80:1-112.
- Steppan, S. J. 1998. Phylogenetic relationships and species limits within *Phyllotis* (Rodentia: Sigmodontinae): Concordance between mtDNA sequence and morphology, *Journal of Mammalogy* 79: 573-593.
- Steppan, S. J., and J. Sullivan. 2000. The emerging statistical perspective in systematics: a comment on Mares and Braun, *Journal of Mammalogy* 81:260-270.
- Taddei, V. A., and W. Uieda. 2001. Distribution and morphometrics of *Natalus stramineus* from South America (Chiroptera, Natalidae), *Iheringia Serie Zoologia* 91:123-132.
- Tagliaro, C. H., M. P. Cruz Schneider, H. Schneider, I. Sampaio, and M. Stanhope. 2000. Molecular studies of *Callithrix pygmaea* (Primates, Platyrrhini) based on transferrin intronic and ND1 regions: implications for taxonomy and conservation, *Genetics and Molecular Biology* 23:729-737.
- Tarifa, T., J. Rechberger, R. B. Wallace and A. Núñez. 2001. Confirmación de la presencia de *Odocoileus virginianus* (Artiodactyla, Cervidae) en Bolivia y datos preliminares sobre su ecología y su simpatria con *Hippocamelus antisensis*, *Ecología en Bolivia* 35:41-49.
- Theimer, T. C., and P. Keim. 1998. Phylogenetic relationships of peccaries based on mitochondrial cytochrome b DNA sequences, *Journal of Mammalogy* 79:566-572.
- Thewissen, J. G. M., and S. I. Madar. 1999. Ankle morphology of the earliest cetaceans and its implications for the phylogenetic relations among ungulates, *Systematic Biology* 48:21-30.
- Townsend, W. R. 2001. *Callithrix pygmaea*, *Mammalian Species* 665:1-6.
- Tribe, C. J. 1996. The Neotropical rodent genus *Rhipidomys* (Cricetidae: Sigmodontinae) - a taxonomic revision. PhD Dissertation. University College of London, London.
- Valladares, J. P. 2002. Divergencia molecular de las especies silvestres y cepas domesticadas del género *Chinchilla* (Rodentia: Chinchillidae) basada en el gen para citocromo b, *Mastozoología Neotropical* 9:96-98.
- Van den Bussche, R. A. and R. J. Baker. 1993. Molecular phylogenetics of the New World bat genus *Phyllostomus* based on cytochrome b DNA sequence variation, *Journal of Mammalogy* 74:793-802.
- Van Roosmalen, M. G. M., and T. Van Roosmalen. 1997. An eastern extension of the geographical range of the Pygmy Marmoset, *Cebuella pygmaea*, *Neotropical Primates* 5: 3-6.
- Van Roosmalen, M. G. M., T. Van Roosmalen, and R. Mittermeier. 2002. A taxonomic review of titi monkeys, genus *Callicebus* Thomas, 1903, with the description of two new species, *Callicebus bernhardi* and *Callicebus stephennashi* from Amazonia, *Neotropical Primates* 10(suppl.):1-52.

- Van Zyll de Jong, C. G. 1972. A systematic review of the Nearctic and Neotropical river otters (Genus *Lutra*, Mustelidae, Carnivora), Life Sciences Contributions Royal Ontario Museum 80:1-104.
- Van Zyll de Jong, C. G. 1987. A phylogenetic study of the Lutrinae (Carnivora: Mustelidae) using morphological data, Canadian Journal of Zoology 65:2536-2544.
- Vargas, J., and J. A. Simonetti. 2001. New distributional records of small mammals at Beni Biosphere Reserve, Bolivia, Mammalian Biology 66:379-382.
- Vitullo, A. D., M. B. Espinosa, and M. S. Merani. 1990. Cytogenetics of vesper mice, *Calomys* (Rodentia, Cricetidae): Robertsonian variation between *Calomys callidus* and *Calomys venustus*, Zeitschrift für Säugetierkunde 55:99-105.
- Voss, R. S., D. P. Lunde, and N. B. Simmons. 2001. The mammals of Paracou, French Guiana. A neotropical lowland rainforest fauna, Part 2: Nonvolant species, Bulletin of the American Museum of Natural History 263:1-236.
- Wallace, R. B., and R. L. E. Painter. 1999. A new primate record for Bolivia: an apparently isolated population of common woolly monkeys representing a southern range expansion for the genus *Lagothrix*, Neotropical Primates 7:111-112.
- Webb, S. D. 1985. The interrelationships of tree sloths and ground sloths. Pp. 105-112, in The evolution and ecology of armadillos, sloths, and vermilinguas. (G.G. Montgomery, editor). Smithsonian Institution Press, Washington, D.C.
- Wetterer, A. L., M. V. Rockman, and N. B. Simmons. 2000. Phylogeny of phyllostomid bats (Mammalia: Chiroptera): Data from diverse morphological systems, sex chromosomes and restriction sites, Bulletin of the American Museum of Natural History 248:1-200.
- Wilson, D. E., and D. M. Reeder (eds.). 1993. Mammal species of the world: a taxonomic and geographic reference, 2nd ed. Smithsonian Institution Press, Washington.
- Woods, C. A. 1993. Suborder Hystricognathi. Pp. 771-806 in Mammal species of the world, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Wozencraft, W. C. 1993. Order Carnivora. Pp. 279-348 in Mammal species of the world, Second edition (D. E. Wilson and D. M. Reeder eds.), Smithsonian Institution Press, Washington.
- Zunino, G. E., O. B. Vaccaro, M. Canevari, and A. L. Gardner. 1995. Taxonomy of the genus *Lycalopex* (Carnivora; Canidae) in Argentina, Proceedings of the Biological Society of Washington 108:729-747.

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