OCCASIONAL PAPERS

Museum of Texas Tech University

Number 229 01 December 2003

REVISED CHECKLIST OF NORTH AMERICAN MAMMALS NORTH OF MEXICO, 2003

ROBERT J. BAKER, LISA C. BRADLEY, ROBERT D. BRADLEY, JERRY W. DRAGOO, MARK D. ENGSTROM, ROBERT S. HOFFMANN, CHERI A. JONES, FIONA REID, DALE W. RICE, AND CLYDE JONES

Since the first checklist of scientific and vernacular names of species of North American mammals was published by Jones et al. (1973), the checklist has been updated periodically (Jones et al., 1975; 1979; 1982; 1986; 1992; 1997). The publication of this revision marks the 30th anniversary of the checklist. From the beginning, it was hoped that the checklist would provide a useful reference for many scientific endeavors in general, both in the field and in the laboratory, and that it would be useful to students in particular. Since the publication six years ago of the most recent revision of the checklist (Jones et al., 1997), demand for copies essentially has eliminated the original supply. In addition, some significant taxonomic changes have been published in the primary literature on mammals since that time. As in previous revisions of the checklist, we have attempted to include all species of Recent mammals known to occur in North America (and its adjacent waters) to the north of Mexico and in the recognized published literature through 2003. The checklist represents a general consensus among the authors, but does not necessarily imply complete agreement among them on all issues.

THIRTY YEARS OF CHANGE

After 30 years and 8 checklists, it seemed appropriate to review and summarize the changes that have occurred in the recognized fauna of North America north of Mexico since the first checklist was published in 1973. Table 1 illustrates the number of orders, families, genera, and species recognized in each revision of the checklist in the Occasional Papers (O.P.) series. From 1973 to 2003, there has been an increase at every taxonomic level (orders, 11 to 12; families, 41 to 46; genera, 141 to 166; species, 403 to 474). Many of the changes in the species classification were made to ensure monophyly of taxa. The greatest percentage change has been in the number of genera (17.7%). The increase in the number of species (71, or 15%) reflects taxonomic changes (46), distributional changes (5), the addition of introduced, non-native mammals to the list (19), and the recognition of humans as a component of the native fauna (1).

Table 1. Changes in the number of taxa for North American mammals north of Mexico as recorded on the checklist published in the Occasional Papers of the Museum, Texas Tech University.

Year (O.P. #)	Orders	Families	Genera	Species
1973 (12)	11	41	141	403
1975 (28)	11	41	141	404
1979 (62)	11	42	142	412
1982 (80)	11	42	141	417
1986 (107)	10	43	148	425
1992 (146)	12	44	156	447
1997 (173)	12	45	164	462
2003 (229)	12	46	166	474

During the last 30 years, the science of mammalogy has changed dramatically as rapid advancements in laboratory techniques, including the study of individuals at the molecular level, have been developed and refined. Technological advances undoubtedly will continue to influence our understanding of the systematic relationships of species and will be reflected in continuing changes to the taxonomy and classification of mammals. Although changes in taxonomy require the student to adapt constantly to a new list of names and a new understanding of species relationships, it clearly should be the goal of all mammalogists to achieve the most accurate classification possible.

Recent advances in molecular biology have provided resolution to questions related to species identification, reproductive isolation and hybridization with proof of the presence/absence of F1 and backcrossed individuals within local populations. This new level of resolution, in combination with the application of the Genetic Species Concept (Avise and Walker, 1999; Bradley and Baker, 2001; Dobzhansky, 1950; Mayden, 1997; Mayr, 1969; Simpson, 1943), suggests that there are many species of mammals that are currently unrecognized (Bradley and Baker, 2001) on lists such as those provided herein and in Wilson and Reeder (1993). Some estimates are that there will be an increase of 25% (Baker, 2002) in number of species in the class Mammalia, but this may indeed be an underestimation. Our understanding of the systematics of mammals is probably the greatest in North America north of Mexico (the focus of this checklist) and it remains open to speculation how many additional species will ultimately be recognized within the North American faunal groups. An example of a cryptic species that was defined by gene sequence data is *Notiosorex cockrumi* (Baker et al., 2003). The more common situation will probably involve examples where subspecific differences have been described and the application of molecular data indicates the presence of more than one species. Examples covered on this checklist include *Neotoma macrotis* (Matocq, 2002), *Neotoma leucodon* (Edwards et al., 2001), *Canis lycaon* (Wilson et al., 2000; Wilson et al., 2003) and within the *Neotoma lepida* complex (Patton and Alvarez-Castañeda, *in press*). Undoubtedly, there will be many other examples within the shrews, rodents and possibly other taxa.

It might be predicted that vagile species such as bats would be the least likely to have well defined phylogroups and unrecognized biological species. At a recent meeting of the North American Symposium on Bat Research (8-11 October 2003 in Lincoln, NE) two papers presented on bat species with a wide geographic range suggest geographically distinct phylogroups. These were studies on *Myotis lucifugus* presented by Tanya A. Dewey of the University of Michigan and on *Antrozous pallidus* presented by Sarah E. Weyandt of Oklahoma State University. At this time it is not possible to understand how many if any of those phylogroups represent currently unrecognized species but it is probable that some do. The significant observation here is that the work of Dewey and Weyandt document that potentially vagile species of bats are divided into well-defined phylogroups based on gene sequence data. Further, these phylogroups need to be interrogated relative to specific status to better understand the biodiversity of the mammals north of Mexico.

TAXONOMIC DIVERSITY

Orders.—Although the overall number of orders (11) remained stable from 1973 to 1982, changes to the recognized orders occurred in 1979, when Mysticeti and Odontoceti were recognized as orders (eliminating the order Cetacea), and Pinnipedia was reduced to a suborder of Carnivora. In 1986, the order Cetacea was restored, and Mysticeti and Odontoceti were reduced to suborders, thus reducing the overall count of orders to ten. In 1992, Primates and Perissodactyla were added to the checklist. The recognized orders have remained unchanged since that time.

Families.—In 1979, the walrus was recognized as belonging to a distinct family, Odobenidae. In 1982, the number of families did not change, but Kogiidae was reduced from familial status and Phocoenidae was recognized as a family separate from Delphinidae. In 1986, Kogiidae was restored as a family, bringing the total count to 43. In 1992, the families Cercopithecidae and Equidae were added to reflect the presence of the introduced rhesus monkey and the feral horse and ass in the North American fauna. Also in 1992, Cricetidae was abandoned as a family, and all New World rats, mice, and voles were recognized as belonging to the family Muridae. In 1997, the skunks were grouped as the family Mephitidae. On the current checklist, the family Hominidae was added, bringing the total number of families to 46.

Genera.—In 1975, the number of genera was unchanged from 1973, but *Idionycteris* was recognized as a distinct genus, and the bobcat and lynx were returned to the genus *Felis*, eliminating the genus *Lynx*. The addition of the genus *Feresa* brought the number of recognized genera to 142 in 1979. In 1982, *Arborimus* was recognized as distinct at the generic level, *Microsorex* was reduced from generic rank, and *Tamias* was recognized as the generic name for all chipmunks, eliminating the genus *Eutamias*. On the subsequent checklist, *Arborimus* was not recognized as a distinct genus, but eight new genera appeared on the checklist as the result of taxonomic changes (*Brachylagus*, *Chaetodipus*, *Pusa*, *Pagophilus*, *Histriophoca*), distributional changes (*Lagenodelphis*), and the addition of exotic species (*Boselaphus*, *Antilope*). Eight additional genera were recognized in 1992, bringing the number of recognized genera to 156. Of the eight new genera, three were added as the result of taxonomic changes (*Nyctinomops*, *Lynx*, *Panthera*), and five were added to reflect the presence of introduced mammals (*Macaca*, *Equus*, *Oryx*, *Hemitragus*, *Capra*). In 1997, taxonomic changes added six genera to the checklist (*Arborimus*, *Puma*, *Leopardus*, *Herpailurus*, *Axis*, *Dama*), and the discovery of *Molossus molossus* in Florida and reports of *Peponocephala electra* in Florida and Maryland added two genera. On the current checklist, the genus *Alopex* was deleted and the genera *Homo*, *Eubalaena*, and *Neotamias* were added, bringing the total recognized genera to 166.

Species.—Total species increased by one from 1973 to 1975; 3 species were added and 2 were deleted from the checklist as the result of taxonomic changes. In 1979, 14 species were added to the checklist and 6 were removed, bringing the total species count to 412. Thirteen additions and eight deletions to the 1982 checklist brought the species count to 417. All of the changes in 1982 were the result of taxonomic revisions, with the exception of the addition of a cetacean based on a new record for North America. In 1986, taxonomic revisions added 12 names to the list and deleted 9; one cetacean was added based on a new record; and 4 introduced species were added. The total species count rose dramatically from 1986 to 1992 (from 425 to 447); taxonomic revisions accounted for 14 additions and 3 deletions, and 11 introduced or feral species were added to the list. The 1997 checklist included 4 additional introduced species and 2 new species (one bat and one cetacean) based on recent discoveries in North America, and taxonomic revisions added 15 names and deleted 6, bringing the checklist total to 462 species. On the current checklist, 15 additions and 4 deletions were reported as the result of taxonomic changes, and the addition of modern man to the list added one species, bringing the total to 474 species.

DEPARTURES FROM JONES ET AL. (1997) AND OTHER NOTES

The changes that have been made in the scientific names from those listed in Jones et al. (1997) are discussed below. Some other pertinent comments are included that might help to explain the current list of recognized species. Readers should note that although Wilson and Ruff (1999) was a more recent publication than the last checklist (Jones et al., 1997), Wilson and Ruff (1999) relied heavily on Wilson and Reeder (1993) as the basis for their book. Thus, there are numerous discrepancies between Wilson and Ruff (1999) and the current checklist. For clarification, we have noted these discrepancies throughout the following notes. We referred primarily to Rice (1998) for marine mammal designations. With a few exceptions, common names are adapted from Wilson and Cole (2000) for terrestrial mammals and Rice (1998) for marine mammals.

INSECTIVORES

Soricidae.—The taxonomy of the *Sorex cinereus* group has a long and confusing history. Most recently, Demboski and Cook (2003) attempted to resolve the phylogenetic relationships among 8 members of the group using molecular data analyses. Demboski and Cook (2003) based their study of the group on the morphological phylogeny presented by van Zyll de Jong (1991). Although the results of Demboski and Cook (2003) generally supported the phylogeny of van Zyll de Jong (1991), we note that the taxonomy of the entire *Sorex cinereus* group remains unresolved, and additional clarification is needed on the composition and nomenclature of this group.

Of particular concern are three species of the *Sorex cinereus* group – *haydeni*, *fontinalis*, and *jacksoni*. Brunet et al. (2002) contended that *Sorex haydeni* does not warrant specific status. Demboski and Cook (2003), however, refuted this change. We have chosen to retain specific status for *haydeni* at this time. Likewise, we continue to recognize *fontinalis* as a species based on the electrophoretic analyses presented by George (1988). Van Zyll de Jong (1999) and Demboski and Cook (2003), however, relegated *Sorex fontinalis* to subspecific status. In 1997 (Jones et al., 1997), we accepted the results of the karyological analyses of Rausch and Rausch (1995), which reduced *Sorex jacksoni* to subspecific status. Both van Zyll de Jong (1999) and Demboski and Cook (2003), however, continued to recognize *jacksoni* as a species. Based on the data of Demboski and Cook (2003), we have chosen once again to recognize *S. jacksoni* as a species on the current checklist.

We follow Alexander (1996) in elevating *Sorex monticolus neomexicanus* to a distinct species. Note that George (1999), however, retained *neomexicanus* as a subspecies. We follow Stewart et al. (2002) in elevating *Sorex arcticus maritimensis* to specific status.

Notiosorex cockrumi, Cockrum's desert shrew, has been added to the checklist. Baker et al. (2003) described this new species based on nuclear and mitochondrial sequence data.

In his account of *Sorex palustris*, Harris (1999) recognized *alaskanus* as a subspecies of *palustris*. Based on the works of Carraway (1995), George (1988), and Hutterer (1993), however, we continue to recognize *Sorex alaskanus* as a species.

We continue to recognize *Sorex pribilofensis* as the correct name for the Pribilof Island Shrew, following van Zyll de Jong (1991), Rausch and Rausch (1997), and Demboski and Cook (2003). Note that Hoffmann (1999), however, referred to the subspecies *S. hydrodromus pribilofensis*.

Wilson and Ruff (1999) failed to provide an account for *Sorex yukonicus*. This species was described by Dokuchaev (1997), and we continue to recognize the species.

BATS

Phyllostomidae.—Several unconfirmed reports of new bat records have come from the Florida Keys region, including the possible occurrence of *Artibeus jamaicensis*, *Phyllonycteris poeyi*, and *Erophylla sezekorni*. None of these reports have been substantiated through any scientific outlets, however, and we refrain from adding any of these species to the current checklist.

Vespertilionidae.—As summarized by Piaggio et al. (2002), the systematic relationship between *Myotis lucifugus* and *Myotis occultus* has been the subject of multiple studies, with often conflicting results and conclusions. Based on this most recent study, utilizing mitochondrial gene sequencing analyses, Piaggio et al. (2002) concluded that *Myotis occultus* represents an evolutionarily distinct monophyletic lineage and warrants specific status. We have accepted that conclusion and included *Myotis occultus* as a species on the current checklist.

Shump (1999) did not recognize *Lasiurus blossevillii* as a valid species, and continued to recognize *blossevillii* as a South American subspecies of *Lasiurus borealis*. We continue, however, as do most authors, to accept the results of Baker et al. (1988) and recognize *Lasiurus blossevillii* as a valid North American species.

Similarly, Kurta (1999) did not recognize the specific status of *Lasiurus xanthinus*, and placed it as a subspecies of *Lasiurus ega*. As on the 1992 checklist (Jones et al., 1992), however, we continue to recognize *Lasiurus xanthinus* as specifically distinct based on chromosomal and electrophoretic data (Baker et al., 1988).

Several authors have argued for the recognition of *Corynorhinus* as a separate genus for the New World big-eared bats and the restriction of *Plecotus* to the Old World forms of this group (Frost and Timm,1992; Tumlison and Douglas, 1992). In the last revision of this checklist (Jones et al., 1997), we retained the name *Plecotus*, but noted that the problem warranted additional study. Recent works by Bogdanowicz et al. (1998) and Hoofer and Van Den Bussche (2001) have provided further support for the monophyly of the Old World genus *Plecotus* and the New World genus *Corynorhinus*. Therefore, we recognize *Corynorhinus* as the genus for the two North American species.

Molossidae.--Although Wilson and Ruff (1999) did not include an account for *Molossus molossus*, we continue to list this species based on its discovery in the Florida Keys (Frank, 1997).

LAGOMORPHS

Leporidae.—We follow Ruedas (1998) who, based on a morphological analysis of 26 characters, elevated *Sylvilagus robustus* to specific status. Ruedas (1998) also suggested that *S. f. holzneri* and *S. f. cognatus* may warrant specific status, but he refrained from naming them as such. We continue to recognize *holzneri* and *cognatus* as subspecies pending further studies of this group.

Halanych et al. (1999) questioned the validity of *Lepus othus*, given its minimal genetic distinctness from *Lepus arcticus*. As Halanych et al. (1999) emphasized, however, further studies are necessary to resolve the taxonomic status of the arctic hare group. Thus, we have retained *Lepus othus* on the current checklist.

RODENTS

Sciuridae.—Jameson (1999) concluded, based on the evolutionary relationships of chipmunk ectoparasites, that the subgenera *Neotamias*, *Tamias*, and *Eutamias* should be elevated to three separate genera. Recently, this conclusion was supported by Piaggio and Spicer (2001) based on their analyses of cytochrome *b* sequence data. We have revised the current checklist to reflect this change. Of the North American chipmunks, only the eastern chipmunk, *Tamias striatus*, is assigned to the genus *Tamias*. All other North American chipmunks are assigned to the genus *Neotamias*.

Arbogast (1999) suggested, based on cytochrome *b* analyses, that *Glaucomys sabrinus oregonensis* may warrant specific status. Further investigation by Arbogast, however, did not find fixed allozymic differences between *oregonensis* and the remaining conspecific populations of *G. sabrinus* (B. Arbogast, pers. comm.). Although it may yet be determined that *G. s. oregonensis* is a cryptic species, the evidence does not warrant elevation to specific status at this time.

Arbogast et al. (2001) also investigated the taxonomy of *Tamiasciurus*, and found little differences between the 3 recognized species (*mearnsi*, *douglasii*,

and *hudsonicus*) based either on mitochondrial DNA (mtDNA) or allozyme analyses. Arbogast et al. (2001) proposed that the recognition of a single, phenotypically variable species, *T. hudsonicus*, comprised of 3 subspecies (*hudsonicus*, *douglasii*, and *mogollonensis*), may best reflect the currently available genetic and morphologic data. Pending further supportive data, however, we have chosen not to accept this reorganization of *Tamiasciurus*.

Geomyidae.—We follow Jolley et al. (2000) in recognizing *Geomys streckeri* as a species.

Heteromyidae.—As in 1997 (Jones et al., 1997), we continue to accept the conclusion of Lee et al. (1996) that *Chaetodipus eremicus* warrants specific status. Note that Price (1999), however, continues to recognize *Chaetodipus eremicus* as a subspecies of *C. penicillatus*.

We follow the recommendation of Riddle et al. (2000a) that the western populations of *Chaetodipus baileyi* be recognized as a distinct species, *C. rudinoris*. We also follow the conclusion of Riddle et al. (2000b) that *Peromyscus fraterculus* (previously assigned as a subspecies of *P. eremicus*) warrants specific status.

We continue to relegate *elephantinus* to subspecific status under *Dipodomys venustus* based on the genic and bacular data presented by Best et al. (1996). More recently, Best (1999) recognized *D. elephantinus* as a species, but readers should be aware that this account was written at the request of Don Wilson and Sue Ruff, and reflects the taxonomy proposed by Wilson and Reeder (1993); it does not reflect the taxonomy supported by the most recent available data (pers. comm., Troy Best).

Muridae.—Hogan et al. (1997) suggested that some of the currently recognized subspecies of *Peromyscus maniculatus* may warrant specific status. We agree that this group needs further study and clarification, but no changes are warranted at this time.

Edwards et al. (2001) examined the molecular phylogenetics of the *Neotoma albigula* species group, and concluded that *Neotoma albigula* is comprised of two cryptic species. The eastern form was designated as *Neotoma leucodon*, the Eastern white-throated woodrat. Matocq (2002) elevated *Neotoma macrotis*, the large-eared woodrat, to a species separate from *N. fuscipes* based on morphological and molecular analyses.

The taxonomy of the *Neotoma lepida* group is complex, and recent research indicates that *lepida* actually may be comprised of at least two species (Patton and Alvarez-Castañeda, in press). Those authors also suggested that the western form of *lepida* should probably be given specific status, although they hesitated to make a formal designation pending further research. Further, it is not clear if *devia* represents a valid species. Given the uncertainty of the taxonomy of the *lepida* group, we have not made any changes to the current checklist until further data are available.

Following Frey (1999) and Frey and Moore (1990), we recognize the Mogollon vole, *Microtus mogollonensis*, as a species distinct from *M. mexicanus*. Batzli (1999) recognized the brown lemming by the specific name *Lemmus sibiricus*, but acknowledged that *trimucronatus* may be the correct name for the species. We recognize the name *trimucronatus* following Jarrell and Fredga (1993). We continue to follow the taxonomy presented on the last checklist (Jones et al., 1997) for the *Dicrostonyx* group. See Engstrom (1999), however, for an alternative view.

CARNIVORES

Canidae.—Recent molecular evidence (Wilson et al., 2000; Wilson et al., 2003) provided support for the recognition of the eastern Canadian wolf as a species distinct from the gray wolf. The species *Canis lycaon* is therefore added to the checklist.

At this time we continue to recognize the arid land foxes as distinct species, *Vulpes velox* and *V. macrotis*, following Mercure et al. (1993). While noting that the status of this species is questionable, Thacker and Flinders (1999) chose to follow Wilson and Reeder (1993) in recognizing one species, *Vulpes velox*. Readers are referred to Dragoo and Wayne (2003) for a review of the systematics of the species.

We follow Geffen et al. (1992) and Mercure et al. (1993) in recognizing the arctic fox as *Vulpes lagopus*. Karyology, DNA hybridization, and allozyme

electrophoretic data all indicate a close relationship of the arctic fox, kit fox, and swift fox and conflicts with the previous assignment of generic distinctness for the arctic fox.

Phocidae.—We have chosen to follow Rice (1998) in the taxonomic classification of the species in this group. Note that the various authors of Wilson and Ruff (1999), however, differed in their classification.

Mephitidae.—Based on external and cranial morphology and molecular data, Dragoo et al. (2003) recently revised the taxonomy of the genus *Conepatus*. Two species, *Conepatus leuconotus* and *C. mesoleucus*, and their subspecies were determined to represent only a single species, *C. leuconotus*.

Felidae.—We follow Wozencraft (1993) in recognizing the correct spelling for the scientific name of the jaguarundi as *Herpailurus yaguarondi* rather than *yagouaroundi*.

CETACEANS

Balaenopteridae.—Based on Dizon et al. (1996), we chose in 1997 (Jones et al., 1997) to recognize *Balaenoptera brydei* and *B. edeni* as two distinct species, with the smaller *B. edeni* being restricted to the coastal waters of the eastern Indian Ocean and the western Pacific Ocean (Jones et al., 1997). Additional studies have supported that arrangement (Wada and Numachi, 1991; Dizon et al., 1998), and we continue to recognize *B. brydei* on the current checklist. Rice (1999), however, retained the more conservative arrangement of *B. edeni* as a single species, although he acknowledged that questions remain regarding the taxonomy of *B. brydei/edeni*. See Rice (1998) for a more thorough discussion.

Balaenidae.—The taxonomy of this family remains in dispute. Most authors recognize two genera, *Balaena* and *Eubalaena*, but others include both species in *Balaena* (see Clapham, 1999). We have chosen to recognize both genera. Further, the number of species within the genus *Eubalaena* is a matter of controversy. The most common taxonomic arrangement recognizes two species: *Eubalaena glacialis*, the northern right whale, and *E. australis*, the southern right whale. Rosenbaum et al. (2000), however, found that the North Atlantic, North Pacific, and Southern Hemisphere populations were each diagnosable by the presence of unique nucleotides at three or four base-pair positions in the control region of the mtDNA. By invoking an extreme version of the phylogenetic species concept, they suggested that each population should be ranked as a full species: *E. glacialis*, *E. japonica*, and *E. australis*, respectively. However, these nucleotide substitutions have no discernable phenotypic expression, and are probably selectively neutral; they cannot be construed as evidence of either prezygotic or postzygotic isolating mechanisms. No other consistent differences have been found between the three populations, so under the biological species concept all three must be regarded as members of a single biological species, *Eubalaena glacialis*.

Delphinidae.—Wilson and Ruff (1999) did not include an account for *Peponocephala electra*. This species was added to the checklist in 1997 based on reports of the species from Texas and Maryland (Barron and Jefferson, 1993).

LeDuc et al. (1999) proposed a revised classification of the Delphinidae based on a molecular systematics analysis. Under their system, *Lagenorhynchus acutus* becomes *Leucopleurus acutus*, and *Lagenorhynchus obliquidens* becomes *Sagmatias obliquidens*. However, we follow most cetologists (Perrin et al., 2002) in holding these changes in abeyance, pending further studies.

Ziphiidae.—Dalebout et al. (2002) described a new species of beaked whale, *Mesoplodon perrini*, based on molecular studies of five animals stranded on the coast of California. All of the North American specimens previously identified as *M. hectori* are now recognized as *M. perrini*. *M. hectori* is removed from the checklist because, as it is now understood, *M. hectori* occurs only in the southern hemisphere.

Kogiidae.—Wilson and Ruff (1999) did not recognize the family Kogiidae for the pygmy sperm whales. We follow Rice (1998) in continuing to recognize this family.

ARTIODACTYLS

Suidae.—The genetic history of the stocks that gave rise to *Sus scrofa* populations in North America represent two different histories. Wild boar have been introduced that have not been through any artificial selection process and probably are indistinguishable from native populations in Europe and Asia. Alternatively, there have been many releases of artificially selected breeds of pigs that have established feral populations. What is present in free-ranging herds is an interbreeding combination of these stocks in various degrees of genetic recombination. In most areas, feral pigs are primarily derivatives of domestic stocks.

Cervidae.—We have accepted the recommendation of Geist (1998), further supported by Randi et al. (2001), that the wapiti of North America and eastern Asia be recognized as specifically distinct (*Cervus canadensis*) from the red deer of western Eurasia (*Cervus elaphus*).

Bovidae.—Although he noted the controversy surrounding the generic placement of the American bison, Shaw (1999) continued to classify the species in the genus *Bison*. Shaw (1999) provided no supporting data for this arrangement, however, whereas several studies have supported the placement of *Bison* in synonomy with *Bos* (see Jones et al., 1997). Thus, we continue to recognize the American bison as *Bos bison*.

CHECKLIST

Although several authors, including Wilson and Ruff (1999), have adopted a different sequence for the phylogeny of mammals, we have chosen to present this checklist in the same phylogenetic sequence as on the previous checklist (Jones et al., 1997), and to again arrange the species alphabetically within each genus. The intent of this arrangement is to facilitate use of the checklist and comparison with previous revisions of the checklist. As in previous revisions, non-native species are identified by an asterisk.

ORDER DIDELPHIMORPHIA – Opossums
Family Didelphidae – Opossums
Didelphis virginiana ..... Virginia Opossum

ORDER INSECTIVORA – Insectivores
Family Soricidae – Shrews
Sorex alaskanus ..... Glacier Bay Water Shrew
Sorex arcticus ..... Arctic Shrew
Sorex arizonae ..... Arizona Shrew
Sorex bairdii ..... Baird's Shrew
Sorex bendirii ..... Pacific Water or Marsh Shrew
Sorex cinereus ..... Cinereus or Masked Shrew
Sorex dispar ..... Long-tailed or Rock Shrew
Sorex fontinalis ..... Maryland Shrew
Sorex fumeus ..... Smoky Shrew
Sorex gaspensis ..... Gaspé Shrew
Sorex haydeni ..... Hayden's or Prairie Shrew
Sorex hoyi ..... Pygmy Shrew
Sorex jacksoni ..... St. Lawrence Island Shrew
Sorex longirostris ..... Southeastern Shrew
Sorex lyelli ..... Mt. Lyell Shrew
Sorex maritimensis ..... Maritime Shrew
Sorex merriami ..... Merriam's Shrew
Sorex monticolus ..... Dusky or Montane Shrew
Sorex nanus ..... Dwarf Shrew
Sorex neomexicanus ..... New Mexico Shrew

Sorex ornatus ..... Ornate Shrew
Sorex pacificus ..... Pacific Shrew
Sorex palustris ..... American Water Shrew
Sorex preblei ..... Preble's Shrew
Sorex pribilofensis ..... Pribilof Island Shrew
Sorex sonomae ..... Fog Shrew
Sorex tenellus ..... Inyo Shrew
Sorex trowbridgii ..... Trowbridge's Shrew
Sorex tundrensis ..... Tundra Shrew
Sorex ugyunak ..... Barren Ground Shrew
Sorex vagrans ..... Vagrant Shrew
Sorex yukonicus ..... Alaska Tiny Shrew
Blarina brevicauda ..... Northern Short-tailed Shrew
Blarina carolinensis ..... Southern Short-tailed Shrew
Blarina hylophaga ..... Elliot's Short-tailed Shrew
Cryptotis parva ..... Least Shrew
Notiosorex cockrumi ..... Cockrum's Desert Shrew
Notiosorex crawfordi ..... Crawford's Desert Shrew

Family Talpidae – Moles
Neurotrichus gibbsii ..... American Shrew Mole
Scapanus latimanus ..... Broad-footed Mole
Scapanus orarius ..... Coast Mole
Scapanus townsendii ..... Townsend's Mole
Parascalops breweri ..... Hairy-tailed Mole
Scalopus aquaticus ..... Eastern Mole
Condylura cristata ..... Star-nosed Mole

ORDER CHIROPTERA – Bats
Family Mormoopidae – Leaf-chinned Bats
Mormoops megalophylla ..... Ghost-faced Bat
Family Phyllostomidae – New World Leaf-nosed Bats
Macrotus californicus ..... California Leaf-nosed Bat
Choeronycteris mexicana ..... Mexican Long-tongued Bat
Leptonycteris curasoae ..... Southern Long-nosed Bat
Leptonycteris nivalis ..... Mexican Long-nosed Bat
Diphylla ecaudata ..... Hairy-legged Vampire Bat
Family Vespertilionidae – Vesper Bats
Myotis auriculus ..... Southwestern Myotis
Myotis austroriparius ..... Southeastern Myotis
Myotis californicus ..... California Myotis
Myotis ciliolabrum ..... Western Small-footed Myotis
Myotis evotis ..... Long-eared Myotis
Myotis grisescens ..... Gray Myotis
Myotis keenii ..... Keen's Myotis
Myotis leibii ..... Eastern Small-footed Myotis
Myotis lucifugus ..... Little Brown Myotis
Myotis occultus ..... Arizona Myotis
Myotis septentrionalis ..... Northern Long-eared Myotis
Myotis sodalis ..... Indiana Bat or Social Myotis
Myotis thysanodes ..... Fringed Myotis
Myotis velifer ..... Cave Myotis
Myotis volans ..... Long-legged Myotis
Myotis yumanensis ..... Yuma Myotis
Lasiurus blossevillii ..... Western Red Bat
Lasiurus borealis ..... Eastern Red Bat
Lasiurus cinereus ..... Hoary Bat
Lasiurus ega ..... Southern Yellow Bat

Lasiurus intermedius ..... Northern Yellow Bat
Lasiurus seminolus ..... Seminole Bat
Lasiurus xanthinus ..... Western Yellow Bat
Lasionycteris noctivagans ..... Silver-haired Bat
Pipistrellus hesperus ..... Western Pipistrelle
Pipistrellus subflavus ..... Eastern Pipistrelle
Eptesicus fuscus ..... Big Brown Bat
Nycticeius humeralis ..... Evening Bat
Euderma maculatum ..... Spotted Bat
Corynorhinus rafinesquii ..... Rafinesque's Big-eared Bat
Corynorhinus townsendii ..... Townsend's Big-eared Bat
Idionycteris phyllotis ..... Allen's Big-eared Bat
Antrozous pallidus ..... Pallid Bat

Family Molossidae – Free-tailed Bats
Tadarida brasiliensis ..... Brazilian Free-tailed Bat
Nyctinomops femorosaccus ..... Pocketed Free-tailed Bat
Nyctinomops macrotis ..... Big Free-tailed Bat
Eumops glaucinus ..... Wagner's Bonneted Bat
Eumops perotis ..... Western Bonneted Bat
Eumops underwoodi ..... Underwood's Bonneted Bat
Molossus molossus ..... Velvety Free-tailed Bat

ORDER PRIMATES - Primates
Family Cercopithecidae – Old World Monkeys
*Macaca fuscata** ..... Japanese Macaque
*Macaca mulatta** ..... Rhesus Macaque
Family Hominidae – Great Apes and Humans
Homo sapiens ..... Modern Man

ORDER XENARTHRA – Armadillos, Anteaters, and Sloths
Family Dasypodidae – Armadillos
Dayspus novemcinctus ..... Nine-banded Armadillo

ORDER LAGOMORPHA – Pikas, Hares, and Rabbits
Family Ochotonidae - Pikas
Ochotona collaris ..... Collared Pika
Ochotona princeps ..... American Pika
Family Leporidae – Hares and Rabbits
Brachylagus idahoensis ..... Pygmy Rabbit
Sylvilagus aquaticus ..... Swamp Rabbit
Sylvilagus audubonii ..... Desert Cottontail
Sylvilagus bachmani ..... Brush Rabbit
Sylvilagus floridanus ..... Eastern Cottontail
Sylvilagus nuttallii ..... Mountain Cottontail
Sylvilagus obscurus ..... Appalachian Cottontail
Sylvilagus palustris ..... Marsh Rabbit
Sylvilagus robustus ..... Davis Mountains Cottontail
Sylvilagus transitionalis ..... New England Cottontail
*Oryctolagus cuniculus** ..... European Rabbit
Lepus alleni ..... Antelope Jackrabbit
Lepus americanus ..... Snowshoe Hare
Lepus arcticus ..... Arctic Hare
Lepus californicus ..... Black-tailed Jackrabbit
Lepus callotis ..... White-sided Jackrabbit
*Lepus europaeus** ..... European Hare
Lepus othus ..... Alaskan Hare
Lepus townsendii ..... White-tailed Jackrabbit

ORDER RODENTIA – Rodents

Family Aplodontiidae – Mountain Beaver

Aplodontia rufa ..... Sewellel or Mountain Beaver

Family Sciuridae – Squirrels

Neotamias alpinus ..... Alpine Chipmunk
Neotamias amoenus ..... Yellow-pine Chipmunk
Neotamias canipes ..... Gray-footed Chipmunk
Neotamias cinereicollis ..... Gray-collared Chipmunk
Neotamias dorsalis ..... Cliff Chipmunk
Neotamias merriami ..... Merriam's Chipmunk
Neotamias minimus ..... Least Chipmunk
Neotamias obscurus ..... California Chipmunk
Neotamias ochrogenys ..... Yellow-cheeked Chipmunk
Neotamias palmeri ..... Palmer's Chipmunk
Neotamias panamintinus ..... Panamint Chipmunk
Neotamias quadrimaculatus ..... Long-eared Chipmunk
Neotamias quadrivittatus ..... Colorado Chipmunk
Neotamias ruficaudus ..... Red-tailed Chipmunk
Neotamias rufus ..... Hopi Chipmunk
Neotamias senex ..... Allen's Chipmunk
Neotamias siskiyou ..... Siskiyou Chipmunk
Neotamias sonomae ..... Sonoma Chipmunk
Neotamias speciosus ..... Lodgepole Chipmunk
Neotamias townsendii ..... Townsend's Chipmunk
Neotamias umbrinus ..... Uinta Chipmunk
Tamias striatus ..... Eastern Chipmunk
Marmota broweri ..... Alaska Marmot
Marmota caligata ..... Hoary Marmot
Marmota flaviventris ..... Yellow-bellied Marmot
Marmota monax ..... Woodchuck
Marmota olympus ..... Olympic Marmot
Marmota vancouverensis ..... Vancouver Marmot
Ammospermophilus harrisii ..... Harris's Antelope Squirrel
Ammospermophilus interpres ..... Texas Antelope Squirrel
Ammospermophilus leucurus ..... White-tailed Antelope Squirrel
Ammospermophilus nelsoni ..... Nelson's Antelope Squirrel
Spermophilus armatus ..... Uinta Ground Squirrel
Spermophilus beecheyi ..... California Ground Squirrel
Spermophilus beldingi ..... Belding's Ground Squirrel
Spermophilus brunneus ..... Idaho Ground Squirrel
Spermophilus canus ..... Columbia Plateau Ground Squirrel
Spermophilus columbianus ..... Columbian Ground Squirrel
Spermophilus elegans ..... Wyoming Ground Squirrel
Spermophilus franklinii ..... Franklin's Ground Squirrel
Spermophilus lateralis ..... Golden-mantled Ground Squirrel
Spermophilus mexicanus ..... Mexican Ground Squirrel
Spermophilus mohavensis ..... Mohave Ground Squirrel
Spermophilus mollis ..... Great Basin Ground Squirrel
Spermophilus parryii ..... Arctic Ground Squirrel
Spermophilus richardsonii ..... Richardson's Ground Squirrel
Spermophilus saturatus ..... Cascade Ground Squirrel
Spermophilus spilosoma ..... Spotted Ground Squirrel
Spermophilus tereticaudus ..... Round-tailed Ground Squirrel
Spermophilus townsendii ..... Townsend's Ground Squirrel
Spermophilus tridecemlineatus ..... Thirteen-lined Ground Squirrel
Spermophilus variegatus ..... Rock Squirrel
Spermophilus washingtoni ..... Washington Ground Squirrel

Cynomys gunnisoni ..... Gunnison's Prairie Dog
Cynomys leucurus ..... White-tailed Prairie Dog
Cynomys ludovicianus ..... Black-tailed Prairie Dog
Cynomys parvidens ..... Utah Prairie Dog
Sciurus aberti ..... Abert's Squirrel
Sciurus arizonensis ..... Arizona Gray Squirrel
*Sciurus aureogaster** ..... Mexican Gray Squirrel
Sciurus carolinensis ..... Eastern Gray Squirrel
Sciurus griseus ..... Western Gray Squirrel
Sciurus nayaritensis ..... Mexican Fox Squirrel
Sciurus niger ..... Eastern Fox Squirrel
Tamiasciurus douglasii ..... Douglas's Squirrel
Tamiasciurus hudsonicus ..... Red Squirrel
Glaucomys sabrinus ..... Northern Flying Squirrel
Glaucomys volans ..... Southern Flying Squirrel

Family Geomyidae – Pocket Gophers

Thomomys bottae ..... Botta's Pocket Gopher
Thomomys bulbivorus ..... Camas Pocket Gopher
Thomomys clusius ..... Wyoming Pocket Gopher
Thomomys idahoensis ..... Idaho Pocket Gopher
Thomomys mazama ..... Western Pocket Gopher
Thomomys monticola ..... Mountain Pocket Gopher
Thomomys talpoides ..... Northern Pocket Gopher
Thomomys townsendii ..... Townsend's Pocket Gopher
Thomomys umbrinus ..... Southern Pocket Gopher
Geomys arenarius ..... Desert Pocket Gopher
Geomys attwateri ..... Attwater's Pocket Gopher
Geomys breviceps ..... Baird's Pocket Gopher
Geomys bursarius ..... Plains Pocket Gopher
Geomys knoxjonesi ..... Jones's Pocket Gopher
Geomys personatus ..... Texas Pocket Gopher
Geomys pinetis ..... Southeastern Pocket Gopher
Geomys streckeri ..... Strecker's Pocket Gopher
Geomys texensis ..... Llano Pocket Gopher
Cratogeomys castanops ..... Yellow-faced Pocket Gopher

Family Heteromyidae – Pocket Mice and Kangaroo Rats

Perognathus alticolus ..... White-eared Pocket Mouse
Perognathus amplus ..... Arizona Pocket Mouse
Perognathus fasciatus ..... Olive-backed Pocket Mouse
Perognathus flavescens ..... Plains Pocket Mouse
Perognathus flavus ..... Silky Pocket Mouse
Perognathus inornatus ..... San Joaquin Pocket Mouse
Perognathus longimembris ..... Little Pocket Mouse
Perognathus merriami ..... Merriam's Pocket Mouse
Perognathus parvus ..... Great Basin Pocket Mouse
Chaetodipus baileyi ..... Bailey's Pocket Mouse
Chaetodipus californicus ..... California Pocket Mouse
Chaetodipus eremicus ..... Chihuahuan Desert Pocket Mouse
Chaetodipus fallax ..... San Diego Pocket Mouse
Chaetodipus formosus ..... Long-tailed Pocket Mouse
Chaetodipus hispidus ..... Hispid Pocket Mouse
Chaetodipus intermedius ..... Rock Pocket Mouse
Chaetodipus nelsoni ..... Nelson's Pocket Mouse
Chaetodipus penicillatus ..... Sonoran Desert Pocket Mouse
Chaetodipus rudinoris ..... Baja Pocket Mouse
Chaetodipus spinatus ..... Spiny Pocket Mouse
Microdipodops megacephalus ..... Dark Kangaroo Mouse
Microdipodops pallidus ..... Pale Kangaroo Mouse

Dipodomys agilis ..... Agile Kangaroo Rat
Dipodomys californicus ..... California Kangaroo Rat
Dipodomys compactus ..... Gulf Coast Kangaroo Rat
Dipodomys deserti ..... Desert Kangaroo Rat
Dipodomys elator ..... Texas Kangaroo Rat
Dipodomys heermanni ..... Heermann's Kangaroo Rat
Dipodomys ingens ..... Giant Kangaroo Rat
Dipodomys merriami ..... Merriam's Kangaroo Rat
Dipodomys microps ..... Chisel-toothed Kangaroo Rat
Dipodomys nitratoides ..... Fresno Kangaroo Rat
Dipodomys ordii ..... Ord's Kangaroo Rat
Dipodomys panamintinus ..... Panamint Kangaroo Rat
Dipodomys simulans ..... Dulzura Kangaroo Rat
Dipodomys spectabilis ..... Banner-tailed Kangaroo Rat
Dipodomys stephensi ..... Stephen's Kangaroo Rat
Dipodomys venustus ..... Narrow-faced Kangaroo Rat
Liomys irroratus ..... Mexican Spiny Pocket Mouse

Family Castoridae – Beavers
Castor canadensis ..... American Beaver

Family Muridae – Mice, Rats, and Voles
Oryzomys couesi ..... Coues's Rice Rat
Oryzomys palustris ..... Marsh Rice Rat
Reithrodontomys fulvescens ..... Fulvous Harvest Mouse
Reithrodontomys humulis ..... Eastern Harvest Mouse
Reithrodontomys megalotis ..... Western Harvest Mouse
Reithrodontomys montanus ..... Plains Harvest Mouse
Reithrodontomys raviventris ..... Salt-marsh Harvest Mouse
Peromyscus attwateri ..... Texas Mouse
Peromyscus boylii ..... Brush Mouse
Peromyscus californicus ..... California Mouse
Peromyscus crinitus ..... Canyon Mouse
Peromyscus eremicus ..... Cactus Mouse
Peromyscus fraterculus ..... Baja Mouse
Peromyscus gossypinus ..... Cotton Mouse
Peromyscus gratus ..... Osgood's Mouse
Peromyscus keeni ..... Keen's Mouse
Peromyscus leucopus ..... White-footed Mouse
Peromyscus maniculatus ..... Deer Mouse
Peromyscus melanotis ..... Black-eared Mouse
Peromyscus merriami ..... Merriam's Mouse
Peromyscus nasutus ..... Northern Rock Mouse
Peromyscus pectoralis ..... White-ankled Mouse
Peromyscus polionotus ..... Oldfield Mouse
Peromyscus truei ..... Piñon Mouse
Podomys floridanus ..... Florida Mouse
Ochrotomys nuttalli ..... Golden Mouse
Baiomys taylori ..... Northern Pygmy Mouse
Onychomys arenicola ..... Mearns's Grasshopper Mouse
Onychomys leucogaster ..... Northern Grasshopper Mouse
Onychomys torridus ..... Southern Grasshopper Mouse
Sigmodon arizonae ..... Arizona Cotton Rat
Sigmodon fulviventer ..... Tawny-belled Cotton Rat
Sigmodon hispidus ..... Hispid Cotton Rat
Sigmodon ochrognathus ..... Yellow-nosed Cotton Rat
Neotoma albigula ..... Western White-throated Woodrat
Neotoma cinerea ..... Bushy-tailed Woodrat
Neotoma devia ..... Arizona Woodrat
Neotoma floridana ..... Eastern Woodrat

Neotoma fuscipes ..... Dusky-footed Woodrat
Neotoma lepida ..... Desert Woodrat
Neotoma leucodon ..... Eastern White-throated Woodrat
Neotoma macrotis ..... Large-eared Woodrat
Neotoma magister ..... Appalachian Woodrat
Neotoma mexicana ..... Mexican Woodrat
Neotoma micropus ..... Southern Plains Woodrat
Neotoma stephensi ..... Stephens's Woodrat
*Rattus norvegicus** ..... Norway or Brown Rat
*Rattus rattus** ..... Black or House Rat
*Mus musculus** ..... House Mouse
Clethrionomys californicus ..... Western Red-backed Vole
Clethrionomys gapperi ..... Southern Red-backed Vole
Clethrionomys rutilus ..... Northern Red-backed Vole
Arborimus albipes ..... White-footed Vole
Arborimus longicaudus ..... Red Tree Vole
Arborimus pomo ..... Sonoma Tree Vole
Phenacomys intermedius ..... Western Heather Vole
Phenacomys ungava ..... Eastern Heather Vole
Microtus abbreviatus ..... Insular Vole
Microtus breweri ..... Beach Vole
Microtus californicus ..... California Vole
Microtus canicaudus ..... Gray-tailed Vole
Microtus chrotorrhinus ..... Rock Vole
Microtus longicaudus ..... Long-tailed Vole
Microtus mogollonensis ..... Mogollon Vole
Microtus miurus ..... Singing Vole
Microtus montanus ..... Montane Vole
Microtus ochrogaster ..... Prairie Vole
Microtus oeconomus ..... Tundra Vole
Microtus oregoni ..... Creeping Vole
Microtus pennsylvanicus ..... Meadow Vole
Microtus pinetorum ..... Woodland Vole
Microtus richardsoni ..... Water Vole
Microtus townsendii ..... Townsend's Vole
Microtus xanthognathus ..... Yellow-cheeked or Taiga Vole
Lemmiscus curtatus ..... Sagebrush Vole
Neofiber alleni ..... Round-tailed Muskrat
Ondatra zibethicus ..... Common Muskrat
Lemmus trimucronatus ..... Brown Lemming
Synaptomys borealis ..... Northern Bog Lemming
Synaptomys cooperi ..... Southern Bog Lemming
Dicrostonyx exsul ..... St. Lawrence Island Collared Lemming
Dicrostonyx groenlandicus ..... Peary Land Collared Lemming
Dicrostonyx hudsonius ..... Labrador Collared Lemming
Dicrostonyx kilangmiutak ..... Victoria Collared Lemming
Dicrostonyx nelsoni ..... Nelson's Collared Lemming
Dicrostonyx nunatakensis ..... Ogilvie Mountain Collared Lemming
Dicrostonyx richardsoni ..... Richardson's Collared Lemming
Dicrostonyx rubricatus ..... Bering Collared Lemming
Dicrostonyx unalascensis ..... Unalaska Collared Lemming

Family Zapodidae – Jumping Mice

Zapus hudsonius ..... Meadow Jumping Mouse
Zapus princeps ..... Western Jumping Mouse
Zapus trinotatus ..... Pacific Jumping Mouse
Napaeozapus insignis ..... Woodland Jumping Mouse

Family Erethizontidae – New World Porcupines

Erethizon dorsatum ..... North American Porcupine

Family Myocastoridae – Coypus
*Myocastor coypus** ..... Nutria or Coypu

ORDER CARNIVORA – Carnivores
Family Canidae – Dogs, Foxes, and Wolves
*Canis familiaris** ..... Feral Dog
Canis latrans ..... Coyote
Canis lupus ..... Gray Wolf
Canis lycaon ..... Eastern Timber Wolf
Canis rufus ..... Red Wolf
Vulpes lagopus ..... Arctic Fox
Vulpes macrotis ..... Kit Fox
Vulpes velox ..... Swift Fox
Vulpes vulpes ..... Red Fox
Urocyon cinereoargenteus ..... Common Gray Fox
Urocyon littoralis ..... Island Gray Fox
Family Ursidae – Bears
Ursus americanus ..... American Black Bear
Ursus arctos ..... Grizzly or Brown Bear
Ursus maritimus ..... Polar Bear
Family Otariidae – Eared Seals
Callorhinus ursinus ..... Northern Fur-Seal
Arctocephalus townsendi ..... Guadalupe Fur-Seal
Eumetopias jubatus ..... Northern or Steller's Sea-Lion
Zalophus californianus ..... California Sea-Lion
Family Odobenidae – Walrus
Odobenus rosmarus ..... Walrus
Family Phocidae – Earless, True, or Hair Seals
Phoca largha ..... Spotted Seal
Phoca vitulina ..... Harbor Seal
Pusa hispida ..... Ringed Seal
Halichoerus grypus ..... Gray Seal
Pagophilus groenlandicus ..... Harp Seal
Histriophoca fasciata ..... Ribbon Seal
Erignathus barbatus ..... Bearded Seal
Cystophora cristata ..... Hooded Seal
Monachus tropicalis ..... Caribbean or West Indian Monk Seal
Mirounga angustirostris ..... Northern Elephant Seal
Family Procyonidae – Raccoons, Ringtails, and Coatis
Bassariscus astutus ..... Ringtail
Procyon lotor ..... Northern Raccoon
Nasua narica ..... White-nosed Coati
Family Mustelidae – Weasels, Otters, and Badgers
Martes americana ..... American Marten
Martes pennanti ..... Fisher
Mustela erminea ..... Ermine or Short-tailed Weasel
Mustela frenata ..... Long-tailed Weasel
Mustela nigripes ..... Black-footed Ferret
Mustela nivalis ..... Least Weasel
*Mustela putorius** ..... European Ferret
Mustela vison ..... American Mink
Gulo gulo ..... Wolverine
Taxidea taxus ..... American Badger
Lontra canadensis ..... Northern River Otter
Enhydra lutris ..... Sea Otter
Family Mephitidae – Skunks
Spilogale gracilis ..... Western Spotted Skunk
Spilogale putorius ..... Eastern Spotted Skunk

Mephitis macroura ..... Hooded Skunk
Mephitis mephitis ..... Striped Skunk
Conepatus leuconotus ..... White-backed Hog-nosed Skunk

Family Felidae – Cats
*Felis catus** ..... Feral Cat
Puma concolor ..... Mountain Lion or Puma
Leopardus pardalis ..... Ocelot
Leopardus wiedii ..... Margay
Herpailurus yaguarondi ..... Jaguarundi
Lynx canadensis ..... Canada Lynx
Lynx rufus ..... Bobcat
Panthera onca ..... Jaguar

ORDER CETACEA – Whales
Family Eschrichtiidae – Gray Whale
Eschrichtius robustus ..... Gray Whale
Family Balaenopteridae – Rorquals
Balaenoptera acutorostrata ..... Northern Minke Whale
Balaenoptera borealis ..... Sei Whale
Balaenoptera brydei ..... Bryde's Whale
Balaenoptera musculus ..... Blue Whale
Balaenoptera physalus ..... Fin Whale
Megaptera novaeangliae ..... Humpback Whale
Family Balaenidae – Right Whales
Eubalaena glacialis ..... Right Whale
Balaena mysticetus ..... Bowhead Whale
Family Monodontidae – Beluga and Narwhal
Delphinapterus leucas ..... White Whale or Beluga
Monodon monoceros ..... Narwhal
Family Delphinidae – Dolphins
Steno bredanensis ..... Rough-toothed Dolphin
Tursiops truncatus ..... Bottlenose Dolphin
Stenella attenuata ..... Pantropical Spotted Dolphin
Stenella clymene ..... Clymene Dolphin
Stenella coeruleoalba ..... Striped Dolphin
Stenella frontalis ..... Atlantic Spotted Dolphin
Stenella longirostris ..... Spinner Dolphin
Delphinus capensis ..... Long-beaked Saddleback Dolphin
Delphinus delphis ..... Short-beaked Saddleback Dolphin
Lagenodelphis hosei ..... Fraser's Dolphin
Lagenorhynchus acutus ..... Atlantic White-sided Dolphin
Lagenorhynchus albirostris ..... White-beaked Dolphin
Lagenorhynchus obliquidens ..... Pacific White-sided Dolphin
Grampus griseus ..... Risso's Dolphin or Grampus
Peponocephala electra ..... Melon-headed Whale
Feresa attenuata ..... Pygmy Killer Whale
Pseudorca crassidens ..... False Killer Whale
Globicephala macrorhynchus ..... Short-finned Pilot Whale
Globicephala melas ..... Long-finned Pilot Whale
Orcinus orca ..... Killer Whale
Lissodelphis borealis ..... Northern Right-whale Dolphin
Family Phocoenidae – Porpoises
Phocoena phocoena ..... Harbor Porpoise
Phocoenoides dalli ..... Dall's Porpoise
Family Ziphiidae – Beaked Whales
Berardius bairdii ..... North Pacific Bottlenose Whale
Ziphius cavirostris ..... Goose-beak Whale

Hyperoodon ampullatus ..... North Atlantic Bottlenose Whale
Mesoplodon bidens ..... Sowerby's Beaked Whale
Mesoplodon carlhubbsi ..... Hubb's Beaked Whale
Mesoplodon densirostris ..... Blainville's Beaked Whale
Mesoplodon europaeus ..... Gervais's Beaked Whale
Mesoplodon ginkgodens ..... Ginkgo-toothed Whale
Mesoplodon mirus ..... True's Beaked Whale
Mesoplodon perrini ..... Perrin's Beaked Whale
Mesoplodon stejnegeri ..... Stejneger's Beaked Whale

Family Kogiidae – Pygmy Sperm Whales
Kogia breviceps ..... Pygmy Sperm Whale
Kogia sima ..... Dwarf Sperm Whale

Family Physeteridae – Sperm Whales
Physeter macrocephalus ..... Sperm Whale

ORDER SIRENIA – Sea Cows

Family Trichechidae – Manatees
Trichechus manatus ..... West Indian or Caribbean Manatee

ORDER PERISSODACTYLA – Odd-toed Ungulates

Family Equidae – Horses and Asses
*Equus asinus** ..... Feral Ass
*Equus caballus** ..... Feral Horse

ORDER ARTIODACTYLA – Even-toed Ungulates

Family Suidae – Pigs
*Sus scrofa** ..... Feral Pig or Wild Boar

Family Tayassuidae – Peccaries
Pecari tajacu ..... Collared Peccary

Family Cervidae – Deer
*Axis axis** ..... Axis Deer
*Dama dama** ..... Fallow Deer
Cervus canadensis ..... Wapiti or Elk
*Cervus nippon** ..... Sika Deer
*Cervus unicolor** ..... Sambar Deer
Odocoileus hemionus ..... Mule or Black-tailed Deer
Odocoileus virginianus ..... White-tailed Deer
Alces alces ..... Moose
Rangifer tarandus ..... Caribou

Family Antilocapridae – Pronghorn
Antilocapra americana ..... Pronghorn

Family Bovidae – Cattle, Antelope, Sheep, and Goats
Bos bison ..... American Bison
*Bos taurus** ..... Domestic Cattle
*Boselaphus tragocamelus** ..... Nilgai
*Oryx gazella** ..... Gemsbok
*Antilope cervicapra** ..... Blackbuck
*Hemitragus jemlahicus** ..... Himalayan Tahr
*Capra hircus** ..... Goat
*Capra ibex** ..... Ibex
Oreamnos americanus ..... Mountain Goat
Ovibos moschatus ..... Muskox
*Ovis aries** ..... European Mouflon Sheep
Ovis canadensis ..... Mountain or Bighorn Sheep
Ovis dalli ..... Dall's or Thinhorn Sheep
*Ammotragus lervia** ..... Barbary Sheep or Aoudad

ACKNOWLEDGMENTS

The authors thank Robert C. Dowler and Frederick B. Stangl, Jr., for their timely and valuable reviews of this manuscript, and Jackie Chavez for her patience and dedication to producing a quality product. We would like to thank Tanya E. Dewey and Sarah E. Weyandt for use of their unpublished materials. This publication was supported in part by Texas Tech University for studies of biodiversity.

LITERATURE CITED

Alexander, L. F. 1996. A morphometric analysis of geographic variation within *Sorex monticolus* (Insectivora: Soricidae). University of Kansas Publication, Museum of Natural History, 88:1-54.

Arbogast, B. S. 1999. Mitochondrial DNA phylogeography of the New World flying squirrels (*Glaucomys*): implications for Pleistocene biogeography. Journal of Mammalogy, 80:142-155.

Arbogast, B. S., R. A. Browne, and P. D. Weigl. 2001. Evolutionary genetics and Pleistocene biogeography of North American tree squirrels (*Tamiasciurus*). Journal of Mammalogy, 82:302-319.

Avise, J. C., and D. Walker. 1999. Species realities and numbers in sexual vertebrates: perspectives from an asexually transmitted genome. Proceeding of the National Academy of Sciences of the USA, 96:992-995.

Baker, R. J., M. B. O'Neill, and L. R. McAliley. 2003. A new species of desert shrew, *Notiosorex*, based on nuclear and mitochondrial sequence data. Occasional Papers, The Museum of Texas Tech University, 222:1-12.

Baker, R. J., J. C. Patton, H. H. Genoways, and J. W. Bickham. 1988. Genic studies of Lasiurus (Chiroptera: Vespertilionidae). Occasional Papers, The Museum of Texas Tech University, 117:1-15.

Baker, R. J. 2002. Editor's comment, P. *i*, *in* A new Central American species from the *Carollia brevicauda* complex (R. J. Baker, S. Solari, and F. G. Hoffmann, authors). Occasional Papers, The Museum of Texas Tech University, 217:1-11.

Barron, G. L., and T. A. Jefferson. 1993. First records of the melon-headed whale (*Peponocephala electra*) from the Gulf of Mexico. Southwestern Naturalist, 38:82-85.

Batzli, G. O. 1999. Brown lemming, *Lemmus sibiricus*. Pp. 653-654, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Best, T. L., R. K. Chesser, D. A. McCullough, and G. D. Baumgardner. 1996. Genic and morphometric variation in kangaroo rats, genus *Dipodomys*, from coastal California. Journal of Mammalogy, 77:785-800.

Best, T. L. 1999. Narrow-faced kangaroo rat, *Dipodomys venustus*. Pp. 545-546, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Bogdanowicz, W., S. Kasper, and R. D. Owen. 1998. Phylogeny of plecotine bats: reevaluation of morphological and chromosomal data. Journal of Mammalogy, 79:78-90.

Bradley, R. D., and R. J. Baker. 2001. A test of the Genetic Species Concept: cytochrome-*b* sequences and mammals. Journal of Mammalogy, 82:960-973.

Brunet, A. K., R. M. Zink, K. M. Kramer, R. C. Blackwell-Rago, S. L. Farrell, T. V. Line, and E. C. Birney. 2002. Evidence of introgression between masked shrews (*Sorex cinereus*), and prairie shrews (*S. haydeni*), in Minnesota. American Midland Naturalist, 147:116-122.

Carraway, L. N. 1995. A key to Recent Soricidae of the western United States and Canada based primarily on dentaries. Occasional Papers of the Natural History Museum, University of Kansas, 175:1-49.

Clapham, P. 1999. Family Balaenidae. P. 241, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Dalebout, M. L., J. G. Mead, C. S. Baker, A. N. Baker, and A. L. van Helden. 2002. A new species of beaked whale *Mesoplodon perrini* sp. n. (Cetacea: Ziphiidae) discovered through phylogenetic analyses of mitochondrial DNA sequences. Marine Mammal Science, 18:577-608.

Demboski, J. R., and J. A. Cook. 2003. Phylogenetic diversification within the *Sorex cinereus* group (Soricidae). Journal of Mammalogy, 84:144-158.

Dizon, A., C. A. Lux, R. G. LeDuc, J. Urban R., M. Henshaw, and R. Brownell, Jr. 1996. An interim phylogenetic anaylysis of sei and Bryde's whales mitochondrial DNA control region sequences. Report of the International Whaling Commission, 46:669.

Dizon, A., C. A. Lux, R. G. LeDuc, J. Urban R., M. Henshaw, C. S. Baker, F. Cipriano, and R. Brownell, Jr. 1998. Molecular phylogeny of the Bryde's whale/sei whale complex: Separate species status for the pygmy Bryde's form? Report of the International Whaling Commission, 47:398.

Dobzhansky, T. 1950. Mendelian populations and their evolution. American Naturalist, 74:312-321.

Dokuchaev, N. E. 1997. A new species of shrew (Soricidae, Insectivora) from Alaska. Journal of Mammalogy, 78:811-817.

Dragoo, J. W., R. L. Honeycutt, and D. J. Schmidly. 2003. Taxonomic status of white-backed hog-nosed skunks, genus *Conepatus* (Carnivora: Mephitidae). Journal of Mammalogy, 84:159-176.

Dragoo, J. W., and R. K. Wayne. 2003. Systematics and population genetics of swift and kit foxes. Pp. 207-222, *in* The swift fox: ecology and conservation of swift foxes in a changing world (M. A. Sovada and L. Carbyn, eds.), Canadian Plains Research Center, University of Regina, Regina, Saskatchewan.

Edwards, C. W., C. F. Fulhorst, and R. D. Bradley. 2001. Molecular phylogenetics of the *Neotoma albigula* species group: further evidence of a paraphyletic assemblage. Journal of Mammalogy, 82:267-279.

Engstrom, M. D. 1999. Collared lemmings, *Dicrostonyx*. Pp. 658-659, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Frank, P. A. 1997. First record of *Molossus molossus tropidorhynchus* Gray (1839) from the United States. Journal of Mammalogy, 78:103-105.

Frey, J. K. 1999. Mogollon vole, *Microtus mogollonesis*. Pp. 634-635, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Frey, J. K., and D. W. Moore. 1990. Nongeographic variation in the Mexican vole (*Microtus mexicanus*). Transactions of the Kansas Academy of Science, 93:97-109.

Frost, D. R., and R. M. Timm. 1992. Phylogeny of plecotine bats (Chiroptera: Vespertilionidae): summary of the evidence and proposal of a logically consistent taxonomy. American Museum Novitates, 3034:1016.

Geffen, E., A. Mercure, D. J. Girman, D. W. Macdonald, and R. K. Wayne. 1992. Phylogenetic relationships of the fox-like canids. Journal of Zoology, 228:27-39.

Geist, V. 1998. Deer of the world: their evolution, behavior, and ecology. Stackpole Books, Mechanicsburg, Pennsylvania. 421 pp.

George, S. B. 1988. Systematics, historical biogeography, and evolution of the genus *Sorex*. Journal of Mammalogy, 78:103-105.

George, S. B. 1999. Montane shrew, *Sorex monticolus*. Pp. 31-33, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Halanych, K. M., J. R. Demboski, B. J. van Vuuren, D. R. Klein, and J. A. Cook. 1999. Cytochrome *b* phylogeny of North American hares and jackrabbits (*Lepus*, Lagomorpha) and the effects of saturation in outgroup taxa. Molecular Phylogeny and Evolution, 11:213-221.

Harris, A. H. 1999. Water shrew, *Sorex palustris*. Pp. 38-39, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Hoffmann, R. S. 1999. Pribilof Island shrew, *Sorex hydrodromus*. Pp. 27-28, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Hogan, K. M., S. K. Davis, and I. F. Greenbaum. 1997. Mitochondrial-DNA analysis of the systematic relationships within the *Peromyscus maniculatus* species group. Journal of Mammalogy, 78:733-743.

Hoofer, S. R., and R. A. Van Den Bussche. 2001. Phylogenetic relationships of plecotine bats and allies based on mitochondrial ribosomal sequences. Journal of Mammalogy, 82:131-137.

Hutterer, R. 1993. Order Insectivora. Pp. 69-130, *in* Mammal species of the world: a taxonomic and geographic reference (D. E. Wilson and D. M. Reeder, eds.), Smithsonian Institution Press, Washington, D.C., xviii + 1206 pp.

Jameson, E. W., Jr. 1999. Host-ectoparasite relationships among North American chipmunks. Acta Theriologica, 44:225-231.

Jarrell, G. H., and K. Fredga. 1993. How many kinds of lemmings? A taxonomic overview. Pp. 45-57, *in* The biology of the lemmings (N. C. Stenseth and R. A. Ims, eds.), Linnean Society Symposium Series, no. 15, Academic Press, London, 683 pp.

Jolley, T. W., R. L. Honeycutt, and R. D. Bradley. 2000. Phylogenetic relationships of pocket gophers (genus *Geomys*) based on the mitochondrial 12S rRNA gene. Journal of Mammalogy, 81:1025-1034.

Jones, C., R. S. Hoffmann, D. W. Rice, M. D. Engstrom, R. D. Bradley, D. J. Schmidly, C. A. Jones, and R. J. Baker. 1997. Revised checklist of North American mammals north of Mexico, 1997. Occasional Papers, The Museum of Texas Tech University, 173:1-19.

Jones, J, K., Jr., D. C. Carter, and H. H. Genoways. 1973. Checklist of North American mammals north of Mexico. Occasional Papers, The Museum of Texas Tech University, 12:1-14.

Jones, J, K., Jr., D. C. Carter, and H. H. Genoways. 1975. Revised checklist of North American mammals north of Mexico. Occasional Papers, The Museum of Texas Tech University, 28:1-14.

Jones, J, K., Jr., D. C. Carter, and H. H. Genoways. 1979. Revised checklist of North American mammals north of Mexico, 1979. Occasional Papers, The Museum of Texas Tech University, 62:1-17.

Jones, J, K., Jr., D. C. Carter, H. H. Genoways, R. S. Hoffmann, and D. W. Rice. 1982. Revised checklist of North American mammals north of Mexico, 1982. Occasional Papers, The Museum of Texas Tech University, 80:1-22.

Jones, J, K., Jr., D. C. Carter, H. H. Genoways, R. S. Hoffmann, D. W. Rice, and C. Jones. 1986. Checklist of North American mammals north of Mexico, 1986. Occasional Papers, The Museum of Texas Tech University, 107:1-22.

Jones, J, K., Jr., R. S. Hoffmann, D. W. Rice, C. Jones, R. J. Baker, and M. D. Engstrom. 1992. Revised checklist of North American mammals north of Mexico, 1991. Occasional Papers, The Museum of Texas Tech University, 146:1-23.

Kurta, A. 1999. Southern yellow bat, *Lasiurus ega*. Pp. 107-109, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

LeDuc, R. G., W. F. Perrin, and A. E. Dizon. 1999. Phylogenetic relationships among the delphinoid cetaceans based on full cytochrome *b* sequences. Marine Mammal Science, 15:619-648.

Lee, T. E., Jr., B. R. Riddle, and P. L. Lee. 1996. Speciation in the desert pocket mouse (*Chaetodipus penicillatus* Woodhouse). Journal of Mammalogy, 77:58-68.

Matocq, M. D. 2002. Morphological and molecular analysis of a contact zone in the *Neotoma fuscipes* species complex. Journal of Mammalogy, 83:866-883.

Mayden, R. L. 1997. A hierarchy of species concepts: the denouement in the saga of the species problem. Pp. 381-424, *in* Species: the units of biodiversity. (M. F. Claridge, H. A. Dawah, and M. R. Wilson, eds.). Chapman and Hall, New York.

Mayr, E. 1969. Principles of systematic zoology. McGraw-Hill, New York.

Mercure, A., K. Ralls, K. P. Koepfli, and R. K. Wayne. 1993. Genetic subdivisions among small canids: mitochondrial DNA differentiation of swift, kit, and arctic foxes. Evolution, 47:1313-1328.

Patton, J. L., and S. T. Alvarez-Castañeda. In press. Phylogeography of the desert woodrat, *Neotoma lepida*, with comments on systematics and biogeographic history. Pp. xx-xx, *in* Contribuciones mastozoologicas en honor de Bernardo Villa (V. Sánchez-Cordero and R. Medellín, eds.), Instituto de Biología, Universidad Nacional Autónoma de México, Mexico, D. F.

Perrin, W. F., B. Würsig, and J. G. S. Thewissen, (eds.). 2002. Encyclopedia of marine mammals. Academic Press, San Diego, 1414 pp.

Piaggio, A. J., and G. S. Spicer. 2001. Molecular phylogeny of the chipmunks inferred from mitochondrial cytochrome *b* and cytochrome oxidase II gene sequences. Molecular Phylogeny and Evolution, 20:335-350.

Piaggio, A. J., E. W. Valdez, M. A. Bogan, and G. S. Spicer. 2002. Systematics of *Myotis occultus* (Chiroptera: Vespertilionidae) inferred from sequences of two mitochondrial genes. Journal of Mammalogy, 83:386-395.

Price, M. V. 1999. Desert pocket mouse, *Chaetodipus penicillatus*. Pp. 516-517, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Randi, E., N. Mucci, F. Claro-Hergueta, A. Bonnet, and E. J. P. Douzery. 2001. A mitochondrial DNA control region phylogeny for the Cervinae: speciation in *Cervus* and its implications for conservation. Animal Conservation, 4:1-11.

Rausch, R. L., and V. R. Rausch. 1995. The taxonomic status of the shrew of St. Lawrence Island, Bering Sea (Mammalia: Soricidae). Proceedings of the Biological Society of Washington, 108:717-728.

Rausch, R. L, and V. R. Rausch. 1997. Evidence for specific independence of the shrew (Mammalia: Soricidae) of St. Paul Island (Pribilof Islands, Bering Sea). Zeitschrift fur Saugetierkunde, 62:193-202.

Rice, D. W. 1998. Marine mammals of the world: systematics and distribution. Society of Marine Mammalogy, Special Publication, 4:1-231.

Rice, D. W. 1999. Bryde's whale, *Balaenoptera edeni*. Pp. 249-251, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Riddle, B. R., D. J. Hafner, and L. F. Alexander. 2000a. Comparative phylogeography of Baileys' Pocket Mouse (*Chaetodipus baileyi*) and the *Peromyscus eremicus* species group: historical vicariance of the Baja California Peninsular Desert. Molecular Phylogeny and Evolution, 17:161-172.

Riddle, B. R., D. J. Hafner, and L. F. Alexander. 2000b. Phylogeography and systematics of the *Peromyscus eremicus* species group and the historical biogeography of North American warm regional deserts. Molecular Phylogeny and Evolution, 17:145-160.

Rosenbaum, H. C., R. L. Brownwell, Jr., M. W. Brown, C. Schaeff, V. Portway, B. N. White, S. Malik, L. A. Pastene, N. J. Patenaude, C. S. Baker, M. Goto, P. B. Best, P. J. Clapham, P. Hamilton, M. Moore, R. Payne, V. Rowntree, C. T. Tynan, J. L. Bannister, and R. DeSalle. 2000. World-wide genetic differentiation of *Eubalaena*: questioning the number of right whale species. Molecular Ecology, 9:1793-1802.

Ruedas, L. A. 1998. Systematics of *Sylvilagus* Gray, 1867 (Lagomorpha: Leporidae) from southwestern North America. Journal of Mammalogy, 79:1355-1378.

Shaw, J. H. 1999. American bison, *Bison bison*. Pp. 342-343, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Shump, K. A. 1999. Red bat, *Lasiurus borealis*. Pp. 105-106, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Simpson, G. G. 1943. Criteria for genera, species, and subspecies in zoology and paleontology. Annals of the New York Academy of Science, 44:145-178.

Stewart, D. T., N. D. Perry, and L. Fumagalli. 2002. The maritime shrew, *Sorex maritimensis* (Insectivora: Soricidae): a newly recognized Canadian endemic. Canadian Journal of Zoology, 80:94-99.

Thacker, R. K., and J. T. Flinders. 1999. Kit or swift fox, *Vulpes velox*. Pp. 148-150, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Tumlison, R., and M. E. Douglas. 1992. Parsimony analysis and the phylogeny of the plecotine bats (Chiroptera: Vespertilionidae). Journal of Mammalogy, 73:276-285.

van Zyll de Jong, C. G. 1991. Speciation in the *Sorex cinereus* group. Pp. 65-73, *in* The biology of the Soricidae (J. S. Findley and T. L. Yates, eds.), Museum of Southwestern Biology, Albuquerque, New Mexico.

van Zyll de Jong, C. G. 1999. Cinereus shrew, *Sorex cinereus*. Pp. 20-21, *in* The Smithsonian book of North American mammals (D. E. Wilson and S. Ruff, eds.), Smithsonian Institution Press, Washington, D.C., xxv + 750 pp.

Wada, S., and K. Numachi. 1991. Allozyme analyses of genetic differentiation among the populations and species of *Balaenoptera*. Report of the International Whaling Commission, (Special Issue 13):125-154.

Wilson, D. E., and F. R. Cole. 2000. Common names of mammals of the world. Smithsonian Institution Press, Washington, D. C., xiv + 204 pp.

Wilson, D. E., and D. M. Reeder (eds.). 1993. Mammal species of the world: a taxonomic and geographic reference. Smithsonian Institution Press, Washington, D.C., xviii + 1206 pp.

Wilson, D. E., and S. Ruff (eds.). 1999. The Smithsonian book of North American mammals. Smithsonian Institution Press, Washington, D. C., xxv + 750 pp.

Wilson, P. J., S. Grewal, I. D. Lawford, J. N. M. Heal, A. G. Granacki, D. Pennock, J. B. Theberge, M. T. Theberge, D. R. Voigt, W. Waddell, R. E. Chambers, P. C. Paquet, G. Goulet, D. Cluff, and B. N. White. 2000. DNA profiles of the eastern Canadian wolf and the red wolf provide evidence for a common evolutionary history independent of the gray wolf. Canadian Journal of Zoology, 78:2156-2166.

Wilson, P. J., S. Grewal, T. McFadden, R. C. Chambers, and B. N. White. 2003. Mitochondrial DNA extracted from North American wolves killed in the 1800s is not of gray wolf origin. Canadian Journal of Zoology, 81:936-940.

Wozencraft, W. C. 1993. Order Carnivora. Pp. 279-348, *in* Mammal species of the world: a taxonomic and geographic reference (D. E. Wilson and D. M. Reeder, eds.), Smithsonian Institution Press, Washington, D.C., xviii + 1206 pp.

Addresses of authors:

ROBERT J. BAKER
Department of Biological Sciences
Museum of Texas Tech University
Texas Tech University
Lubbock, TX 79409-3131
e-mail: rjbaker@ttu.edu

LISA C. BRADLEY
Museum of Texas Tech University
Texas Tech University
Lubbock, TX 79409-3191
e-mail: lisa.bradley@ttu.edu

ROBERT D. BRADLEY
Department of Biological Sciences
Museum of Texas Tech University
Texas Tech University
Lubbock, TX 79409-3131
e-mail: robert.bradley@ttu.edu

JERRY W. DRAGOO
Museum of Southwestern Biology
University of New Mexico
Albuquerque, NM 87131-1091
e-mail: jdragoo@unm.edu

MARK D. ENGSTROM
Royal Ontario Museum
100 Queen's Park
Toronto, Ontario
M5S 2C6 CANADA
e-mail: marke@rom.on.ca

ROBERT S. HOFFMANN
Smithsonian Institution
P.O. Box 37012
Div. Mamm., Natl. Mus. Nat. Hist. MRC108
Washington, D.C. 20013-7012
e-mail: hoffmann.robert@nmnh.si.edu

CHERI A. JONES
Department of Zoology
Denver Museum of Natural History
2001 Colorado Blvd.
Denver, CO 80205
e-mail: cjones@dmns.org

FIONA REID
CBCB, Royal Ontario Museum
100 Queen's Park
Toronto, Ontario
M5S 2C6 CANADA
e-mail: fionar@globalserve.net

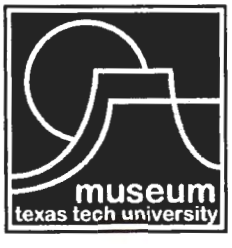
DALE W. RICE
14334 Edgewater Lane
Seattle WA 98125-3844
e-mail: dale.rice@noaa.gov

CLYDE JONES
Department of Biological Sciences
Museum of Texas Tech University
Texas Tech University
Lubbock, TX 79409-3131
e-mail: cjmajones@aol.com

PUBLICATIONS OF THE MUSEUM OF TEXAS TECH UNIVERSITY

The Museum of Texas Tech University has a catalog of Occasional Papers which may be viewed online at www.nsrl.ttu.edu. To do so, you must have Adobe Acrobat® installed on your computer. If you do not have Adobe Acrobat®, please visit http://www.adobe.com/products/acrobat/readermain.html. If you are still experiencing difficulty downloading Occasional Papers, please contact the Webmaster. If there is continued difficulty, contact the Webmaster and a single hard copy can be provided to you via mail at no charge.

Institutional subscriptions are available through the Museum of Texas Tech University, attn: NSRL Publications Secretary, Box 43191, Lubbock, TX 79409-3191. Individuals may also purchase separate numbers of the Occasional Papers directly from the Museum of Texas Tech University.



ISSN 0149-175X

Museum of Texas Tech University, Lubbock, TX 79409-3191