

MEXICAN MAMMAL SYNONYMIES: LEARNING THE STORY OF THE MAMMALS FROM THE NAME

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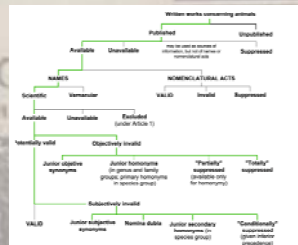
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INTRODUCTION

México is one of the megadiverse¹ countries, meaning that overall all those countries hold around 70% of the World's biological diversity, and at least 10% of the World species are known from each of those countries. Among the several zoological groups, Mexican mammals, with 525 species, ranks third among the most diverse mammal fauna in the world, after Indonesia and Brazil (Groombridge & Jenkins, 2002). The high number of Mexico's endemic mammals (161, 30%), places it third position after Indonesia and Australia.



The International Code of Zoological Nomenclature (ICZN, 1999) has one fundamental aim, which is to provide the maximum universality and continuity in the scientific names of animals compatible with the freedom of scientists to classify animals according to taxonomic judgments (Ride, 1999). "Like all language, zoological nomenclature reflects the history of those who have produced it, and is the result of varying and conflicting practices. . . biological nomenclature has to be an exact tool that will convey a precise meaning for persons in all generations" (Bradley, 1961).



Since 1758, Mexican mammals have been described and redescribed under several scientific names. This has created an enormous task for mammalogists and wildlife managers as they try to sort out the valid names for each species and subspecies. Many of the obsolete and unavailable names are still in general use. In 1964 the senior author began a compilation of all scientific names that have been applied to Mexican mammals in an attempt to create a reference that would place these names in their proper context. The several co-authors have joined the senior author to accomplish that task.

OBJECTIVES

- Record the complete nomenclature of the Mexican mammals
- List of all of the synonymies that include both objective and subjective synonymy.
- Learn about species diversity by state, and the reference literature for them.
- Record the available literature from 1758 throughout 2008 for Mexican mammals.

¹The concept of "megadiversity" was created to prioritize conservation efforts globally. There are other concepts of prioritization that do not take political divisions into account, but use natural regions (ecoregions) or groups of species (plants, birds, mammals) to select the highest priority sites worldwide. Regardless of the criteria used, Mexico has particular importance among the world's rich natural and cultural assets.

METHODS

We have reviewed most of the printed literature dealing with Mexican mammals, including all those that refer taxa that occur in México, but have a wider distribution. Originally the information on each scientific name and the distribution of each species was recorded in a card file. However, with the development of electronic storage capabilities, most of this information has been converted and is stored and processed electronically. At least one of the co-authors have reviewed most of the citations. A major support for the project came from the National Commission for the Knowledge and Use of Biodiversity (CONABIO) since, in order to create the Mammal Authority Database for the Biotica® Program (Project CS-005), they provided funds necessary to accomplish the original endeavour, including literature search in México, the United States, and Europe. Currently the manuscript that compiles all of the available information is being prepared (look nearby this position for a preliminary dummy of the book).

RESULTS

We reviewed most of the suitable printed papers, with a final list of 12 orders, 168 genera (13 endemics), and 479 species (164 are endemics); from those 218 are monotypic and 261 polytypic, including 854 subspecies. For the 479 species, 432 are of continental range, 21 are of island range, and 26 are mixed from both ranges. We included information only for the Mexican terrestrial mammals, and for *Enhydra* and *Lontra*, but excluded all of the taxa from the orders Cetacea and Sirenia.

We searched at 4,469 publications, accounting for 13,299 synonymies, either objectives or subjective. An average of 27 synonymies by species was found, with some that did not have any other than the actual description name (some mice and rats with very restricted distribution), and others with more than 50 synonymies, including all those wide-distributed mammals.

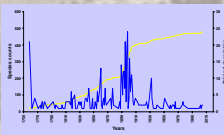
One example showing the provided information on the available synonymy for a taxon shared by the Old and New worlds is for the gray squirrel *Sciurus griseus*:

WESTERN GRAY SQUIRREL

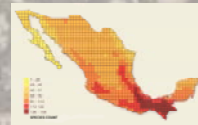
Sciurus griseus Ord

1818. *Sciurus griseus* Ord. J. Phys., Chim., Hist. et des Arts, 87: 152. Localidad tipo: "The Dalles of the Columbia [River]"; Wasco Co., Oregon.
1841. *Sciurus leporinus* Audubon y Bachman, Proc. Acad. Nat. Sci. Philadelphia, 1: 101. Localidad tipo: "Northern parts of California."
1848. *Sciurus (Sorex) Paucis*. Mammalia and ornithology, in: United States Exploring Expedition... 8: 55. Localidad tipo: "Southern parts of Oregon."
1852. *Sciurus leucurus* LeComte, Proc. Acad. Nat. Sci. Philadelphia, 6: 149. Localidad tipo: "California"; probablemente los cerros de la Sierra central cercana al Rio Calaveras, Calaveras Co. (Grinnell, 1935: 134).
1897. *Sciurus (Mastomys) leucurus* Trossard, Catalogue mammaliaum tam sivealiatum quam fossillium, Fasc. 2: 425.
1904. *Sciurus (Hesperosciurus) griseus*: Elliott, Field Columbian Mus., Zool. Ser., 4: 130.
1905. *Sciurus (Hesperosciurus) griseus*: Elliott, Field Columbian Mus., Zool. Ser., 6: 78.

We have reviewed over 3000 papers for the range period between 1758 and 2008. The distribution of species names for such a period is as follows:



In regard to the taxonomic representation, Rodentia and Chiroptera are the most diverse orders in México, similar to what it occurs world-wide (Wilson & Reeder, 2005). Chiapas, Oaxaca, Veracruz, Jalisco, Michoacan, and Puebla, are the states with the highest specific diversity, while Distrito Federal (where México City is located), Guanajuato, Tlaxcala and Aguascalientes are the states with the least.



CONCLUSIONS

"Learning about the names of the Mexican mammals" have given the opportunity to know and discuss about the many Mexican mammal species, and certainly it has provided useful in regard to searching for Mexican specimens in museums abroad. This would be a useful item to be included in the Encyclopedia of Life project.

Acknowledgments

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