



**Challenges faced in  
modernizing old specimen  
databases and getting  
them online**

**Andrew Smith – [asmith@unl.edu](mailto:asmith@unl.edu)**

# Puerto Montt (12 km ESE)

The screenshot displays a Google Maps interface with a route from Puerto Montt to Carretera Austral 13760. The route is highlighted in blue and follows the coast, passing through Cardonal, Los Notros, and Chamiza. A pop-up box on the route indicates a travel time of 14 minutes and a distance of 12.0 km. The left sidebar shows the starting point as 'arretera Austral 13760, Puerto Mor' and the destination as 'Río Puelche 21, Puerto Montt, X Re'. The sidebar also includes a 'Leave now' dropdown and an 'OPTIONS' section. The bottom of the map shows the Google logo, map data copyright (©2015 Google), and various utility icons like a person, a person with a backpack, and a person with a suitcase. The user's email address 'asmith@unl.edu' is visible in the top right corner.

via Carr Austral/Ruta 7 **14 min**  
12 min without traffic 12.0 km  
[DETAILS](#)

Carretera Austral 13760

14 min  
12.0 km

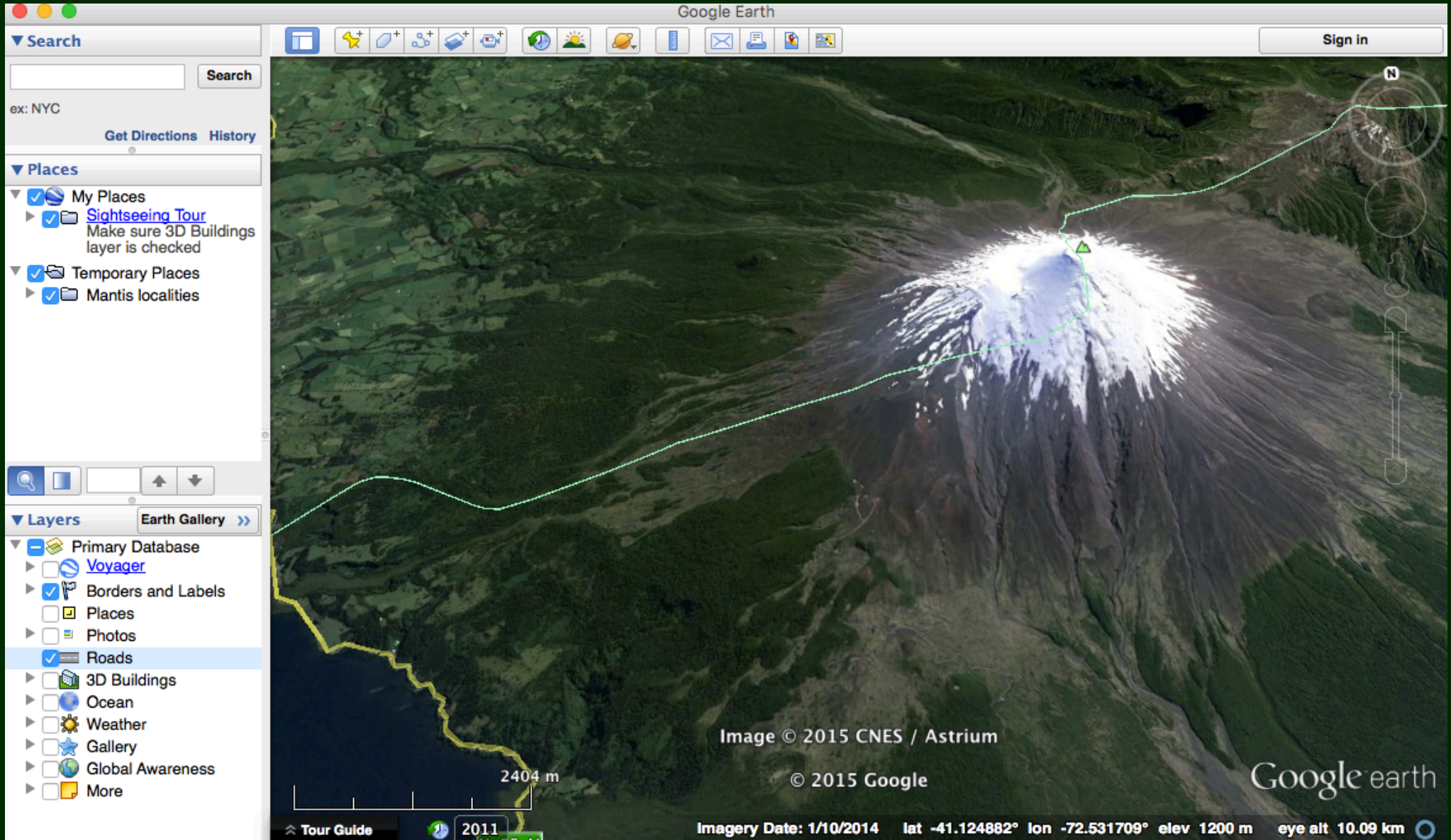
Drag to change location or click to see details

Google

Map data ©2015 Google Terms Privacy Send feedback 2 km

**Andrew Smith – asmith@unl.edu**

# Volcan Osorno road, 1200 m



Andrew Smith – [asmith@unl.edu](mailto:asmith@unl.edu)

Mexico	Baja California	1 km N (km 115) Rancho El Progreso
Mexico	Baja California	1 km N (km 115) Rancho El Progreso
Mexico	Baja California	1 km N (km 115) Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 km N Rancho El Progreso
Mexico	Baja California	1 mi E Mission Santo Domingo
Mexico	Baja California	1 mi N Meling Ranch
Mexico	Baja California	1 mi S Bahia Los Angeles
Mexico	Baja California	1 mi S Bahia Los Angeles
Mexico	Baja California	1 mi S Bahia Los Angeles
Mexico	Baja California	1 mi W El Progreso
Mexico	Baja California	1 mi W Progreso, Hwy 1
Mexico	Baja California	10 km S Valle de la Trinidad
Mexico	Baja California	10 km S Valle de la Trinidad
Mexico	Baja California	10 km S Valle de la Trinidad
Mexico	Baja California	10 mi E El Rosario
Mexico	Baja California	10 mi N Cataviña
Mexico	Baja California	10 mi NE Col. Guerrero on Rio Santo Domingo
Mexico	Baja California	10 mi S Catavina
Mexico	Baja California	10 mi S of El Rosario
Mexico	Baja California	10 mi S San Matias Pass
Mexico	Baja California	10.3 mi SW Los Medanos
Mexico	Baja California	11 km S Rancho El Progreso
Mexico	Baja California	11 km S Rancho El Progreso
Mexico	Baja California	11 rd mi E San Telmo
Mexico	Baja California	11 rd mi E San Telmo
Mexico	Baja California	12 mi S San Felipe
Mexico	Baja California	13 km NNW Rosarito, km 40
Mexico	Baja California	13 km NNW Rosarito, km 40
Mexico	Baja California	13 km NW Rancho El Progreso
Mexico	Baja California	13 km NW Rosarito
Mexico	Baja California	13 km NW Rosarito
Mexico	Baja California	13 km S San Matias

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**The Dynastine Scarab Beetles  
of Honduras, Nicaragua and  
El Salvador**

(Coleoptera: Scarabaeidae: Dynastinae)

*Brett C. Ratcliffe  
Ronald D. Cave*



Bulletin of the  
University of Nebraska State Museum

Volume 21  
2006

**20498 specimen records**

**The Dynastine Scarab Beetles  
of Mexico, Guatemala, and Belize**

(Coleoptera: Scarabaeidae: Dynastinae)

*Brett C. Ratcliffe  
Ronald D. Cave  
Enio B. Cano*



Bulletin of the  
University of Nebraska State Museum

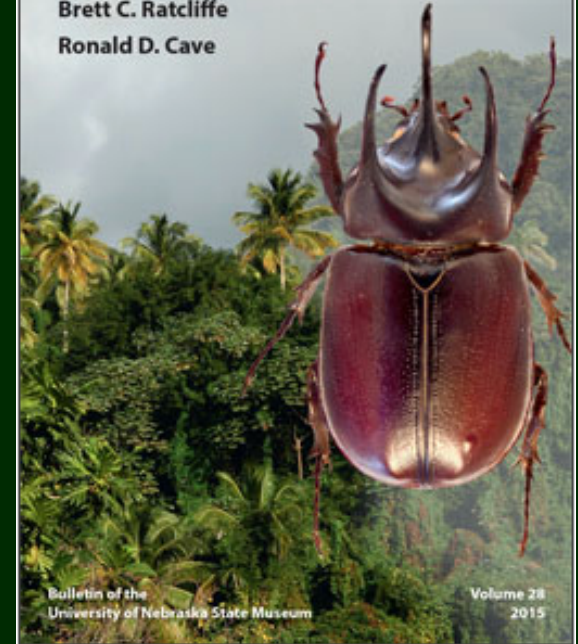
Volume 27  
2013

**17501 specimen records**

**The Dynastine Scarab Beetles  
of the West Indies**

(Coleoptera: Scarabaeidae: Dynastinae)

*Brett C. Ratcliffe  
Ronald D. Cave*



Bulletin of the  
University of Nebraska State Museum

Volume 28  
2015

**21087 specimen records**

**Andrew Smith – [asmith@unl.edu](mailto:asmith@unl.edu)**



**UPDATE (7 June 2011):** A new version of Mantis will be released this summer. It will include PHP templates for a server version of the database and large number of improvements and fixes. Also, read about the origin of Mantis in Michael Canfield's new book "[Field Notes on Science and Nature.](#)"

**MANTIS v. 2.0 NOW AVAILABLE! (2 December 2008):** The new version of Mantis is here. Mantis v. 2.0 includes a number of changes and improvements over the previous versions. The most important ones are the ability to attach images and sounds to individual specimens, a character matrix-based species descriptor, the ability to store genetic data (extractions, PCR's, sequences), and the ability to create records for any taxa, regardless of their rank (families, orders etc.) Also, synonyms are now treated as individual records, and the entire synonymy process has been streamlined. You can also attach PDF files to Citation records, add images to Localities, or browse species using a handy Taxonomic Index.

Importing data from Mantis version 1 and 2.0 beta is as easy as dropping the old files into a folder and clicking "Import" (details are explained in the [Help system](#) that comes with Mantis 2.0.)

I am now preparing a French language version of Mantis (with a huge help from François Génier.)

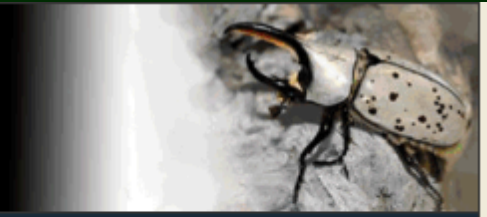
[Downloads](#)

The screenshot shows the Mantis software interface. The top window is the main menu with options like Home, Add New, Delete, Edit, Print, Help, and Quit. The main area displays a green mantis on a leaf. Below this is a detailed record for *Tylopsis continua* (Walker, 1869). The record includes taxonomic information (Subfamily, Tribe, Genus, Species), author (Walker, 1869), and locality (Durban, South Africa). It also features a 'TYPE INFO' section with details on the type locality and depository, and a 'DISTRIBUTION' section.

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FileMaker Version	Step 1	Step 2	Step 3
If your current version of FileMaker Pro supports the .fmp12 file format, files do not need to be converted and will open in FileMaker Pro.	Open File with FileMaker Pro		
If your current version of FileMaker Pro is 14, 13, 12 (.fmp 12), or FileMaker Pro 11, 10, 9, 8 or 7 (.fp7), files will convert directly to FileMaker Pro (.fmp12) and there is no additional conversion necessary.	Open File with FileMaker Pro		
If your current version of FileMaker Pro is 6, 5, 4, or 3, files will need to be converted to FileMaker Pro 11 before they can be converted to FileMaker Pro (.fmp12)	Open File with FileMaker Pro 11	Open File with FileMaker Pro	
If your current version of FileMaker Pro is 2.x, or FileMaker Pro 1, files will need to be converted to FileMaker Pro 6, then to FileMaker Pro 11 before being converted to FileMaker Pro (.fmp12)	Open File with FileMaker Pro 6	Open File with FileMaker Pro 11	Open File with FileMaker Pro

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Home >> Collection Search Page >> **Scarab Central: World Scarabaeoidea Details**

## Scarab Central: World Scarabaeoidea (UNL-SCARAB)

Scarab beetles (Scarabaeoidea) include over 31,000 described species, and current estimates suggest that the group includes at least 50,000 species world-wide. It is ecologically diverse with species that feed on roots, fruits, leaves, and rotting wood as well as detritivores that are associated with vertebrate carcasses and dung, and inquilines living in nests of vertebrates and invertebrates. The group is environmentally important, with many species of conservation, agricultural, biocontrol, cultural, and eco-service concern. For these reasons, biodiversity data on scarab beetles are essential. This database integrates data from several projects focused on New World scarab biodiversity. Combining these data greatly increases the power of our biodiversity knowledge. It allows development of regional catalogs, specimen-level information including character data, geographic and temporal distributions, host plant associations, and images. It contributes to the development of computer infrastructure for organizing and accessing knowledge about scarab beetles, and provides the foundation for future work in global scarab systematics

**Contact:** Mary Liz Jameson (maryliz.jameson@gmail.com)

**Home Page:** <http://museum.unl.edu/research/entomology/scarabcentral.html>

**Collection Type:** Observations

**Management:** Live Data managed directly within data portal

**Global Unique Identifier:** 38c12dad-756f-494d-bf91-dedfde534b05

**Usage Rights:** CC0 1.0 (Public-domain)

**Rights Holder:** UNL

**Access Rights:** Access to most of the data will be open to the public. Certain data will be limited to special request in writing from bona fide researchers. Such information will be metadata about the collection data (i.e., when and who proofed the data), sensitive


### Address:


Wichita State University   
537 Hubbard Hall  
Wichita, Kansas 67260-0026  
USA  
316-978-6798  
<http://museum.unl.edu/research/entomology/scarabcentral.html>

### Collection Statistics:

- 37999 specimen records
- 30694 (81%) georeferenced
- 15269 (40%) identified to species
- 1 families
- 19 genera
- 45 species
- 45 total taxa (including subsp. and var.)

### Extra Statistics

Show Family Distribution 

Hide Geographic Distribution 

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Legend  
■ = *Scarabaeidae*

Add Point of Reference

Latitude decimal:  eg: 34.57

Longitude decimal:  eg: -112.38

Enter in D:M:S format

Marker Name:

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# The Dynastine Scarab Beetles of Costa Rica and Panama

(Coleoptera: Scarabaeidae: Dynastinae)

Brett C. Ratcliffe



Bulletin of the  
University of Nebraska State Museum  
Volume 16 • 2003



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Major Features  
Who Uses Biota?  
Versions & Platforms  
Schema/ERD  
Biota on the Internet

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Biota 3 Download  
Biota 2 Download  
Conversion Tools

#### Biota Support

The Biota User's Manual  
Support by Email  
Bug Reporting  
Known Bugs  
Notes for Mac OS X  
Notes for Windows

*Biota manages specimen-based, spatially and taxonomically referenced data for ecologists, conservation biologists, evolutionary biologists, systematists, museums and herbaria.*



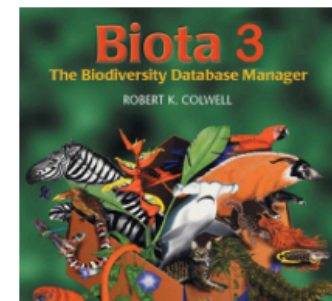
Biota is open-source software, distributed under a [BSD-3 Open Source License](#). You may freely download, use, and distribute fully-enabled copies of the standalone desktop versions of Biota 3 (BiotaAppWin and BiotaAppMac) or Biota 2.0.4 at zero cost. If you wish, you may also request and modify the source code (as a 4th Dimension Structure File, which requires 4th Dimension to open).



The comprehensive Biota Manual is also available for immediate download, at no cost, under a [GNU Free Documentation License](#).

By mutual and amicable agreement, long-time Biota partner Sinauer Associates will no longer distribute Biota.

©2012 Robert K. Colwell



As of May 16, 2012, Biota 3 is now available for immediate download.

This new version of Biota features a faster, updated engine certified for Mac OS 10.7 (Lion) and Windows 7. Biota 3 is backwards-compatible with Mac OS 10.6 (Snow Leopard) and Windows XP.

Biota 3 Data Files are fully cross-platform (Mac <—> Windows) compatible without conversion. Biota 2 Data Files can be converted to Biota 3 format.

Because of licensing issues, Biota 3 does not handle images and does not have a built-in web-server (although, like Biota 2, it can export static web pages for posting on a web-server). The client-server version of Biota is no longer available. BiotaApp 2.0.4 continues to be available for download, but will no longer be updated.

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A CATALOGUE OF TYPES  
OF COLEOPTERA IN THE  
CANADIAN NATIONAL COLLECTION  
OF INSECTS

**RAYMOND de RUETTE**

Entomology Research Institute  
Canada Department of Agriculture  
Ottawa, Canada

MEMOIRS OF  
THE ENTOMOLOGICAL SOCIETY OF CANADA — No. 72

Editor: D. P. Pielou

Edited by THE ENTOMOLOGICAL SOCIETY OF CANADA, OTTAWA

1970

**CNC Coleoptera type database**  
▪ **5914 specimen records**



**Andrew Smith – [asmith@unl.edu](mailto:asmith@unl.edu)**

Accession Prefix  Accession #   
Original Genus  Original Specific Epithet   
Original Subspecific Epithet  Original Author

Verbatim Data

Type  CNC #   
Country  Province   
Locality   
Decimal Latitude  Decimal Longitude   
Negative (-) for South  Negative (-) for West   
Accuracy in metres   
Start Day  Start Month  Start Year   
End Day  End Month  End Year   
Collector   
Lowest elevation (m)  Highest elevation (m)   
Macrohabitat   
Microhabitat   
# of specimens  Sex  Male  Female  
Trap   
Sample Number/Lot  Other accession #

**DETERMINATION DATA**  
Determined by   
Determination Date   
Previous Det. By   
Previous Det. Date

**EXTRA INFORMATION**  
Continent   
Biogeographic Region   
Deposition   
Notes

CREATION DATE   
Record Created by   
Modification Date   
Record Last Modified by

**Andrew Smith – asmith@unl.edu**

Verbatim Data Neotype: Boulder, COLO. 5800', June 5, 1961 B.H. Poole/  
*Cryptocephalus nigricornis* Say, 1823(1824) Neotype Designated by  
E.U. Balsbaugh, Jr. 1974/ Neotype CNC No. 16666.  
  
[designation: Balsbaugh & Tucker, 1976, *Coleopterists Bulletin* 30  
(2): 119].

Type  CNC #

Country  Province

Locality

Decimal Latitude  Decimal Longitude   
Negative (-) for South Negative (-) for West

Accuracy in metres

Start Day  Start Month  Start Year

End Day  End Month  End Year

Collector

Lowest elevation (m)  Highest elevation (m)

# My recommendations for handling databases

- **Edit and verify data**
- **Conserve old databases (backup, upgrade, etc.)**
- **Assimilate research databases (be flexible!)**
- **Combine datasets**
- **Get data online**



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# Sericoides Guérin-Ménéville, 1839

Genus in GBIF Backbone Taxonomy

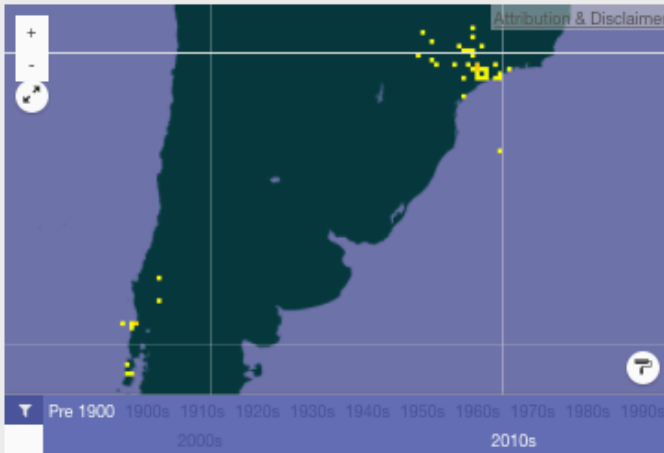
Animalia · Arthropoda · Insecta · Coleoptera · Melolonthidae

238	57
Occurrences	Species
<a href="#">View occurrences</a>	

Information

## Overview

<b>FULL NAME</b> Sericoides Guérin-Ménéville, 1839	<b>TAXONOMIC STATUS</b> Accepted genus	<b>GBIF ID</b> <a href="#">1052455</a> <b>SEARCH LINKS</b> <ul style="list-style-type: none"> <li>Encyclopedia of Life</li> <li>Catalogue of Life</li> <li>Biodiversity Heritage Library</li> </ul>
<b>SYNONYMS</b> <ul style="list-style-type: none"> <li>Accia Curtis, 1844</li> <li>Apterodema Fairmaire, 1884</li> <li>Listronyx Guérin-Ménéville, 1839</li> <li>Macrosoma Hope, 1837</li> <li>Maypa Blanchard, 1850</li> </ul> <a href="#">more &gt;</a>	<b>ACCORDING TO</b> The Catalogue of Life, 3rd January 2011	<b>PUBLISHED IN</b> Rev. Zool. (Soc. Cuv.), 2, 301.
	<b>HABITAT</b> Not marine	



## Georeferenced data

**VIEW RECORDS**  
All 174 | [In viewable area](#)

## Subordinate taxa

- [Sericoides acuticollis](#) species
- [Sericoides andina](#) species
- [Sericoides antarcticus](#) species
- [Sericoides argentinensis](#) species
- [Sericoides atra](#) species
- [Sericoides castanea](#) species
- [Sericoides chilena](#) species
- [Sericoides chilensis](#) species

## Classification

- KINGDOM** [Animalia](#)
  - PHYLUM** [Arthropoda](#)
  - CLASS** [Insecta](#)
  - ORDER** [Coleoptera](#)
  - FAMILY** [Melolonthidae](#)
  - GENUS** [Sericoides](#)
  - SPECIES** 57
- [complete classification](#)

## Appears in

- |  |  |
|--|--|
| <b>OCCURRENCE DATASETS</b>   | <b>CHECKLISTS</b>  |
| <ul style="list-style-type: none"> <li><a href="#">Occurrences in SinBIOTA</a><br/>in 130 occurrences</li> <li><a href="#">Essig Museum of Entomology</a><br/>in 82 occurrences</li> <li><a href="#">Colección Nacional de Entomología - Museo Argentino de ...</a><br/>in 14 occurrences</li> <li><a href="#">NMNH occurrence DwC-A</a><br/>in 3 occurrences</li> <li><a href="#">Lund Museum of Zoology - Insect collections (MZLU)</a><br/>in 3 occurrences</li> <li><a href="#">mel</a><br/>in 2 occurrences</li> <li><a href="#">9 more &gt;</a></li> </ul> | <ul style="list-style-type: none"> <li><a href="#">Interim Register of Marine and Nonmarine Genera</a><br/>as <a href="#">Sericoides Guérin-Ménéville, 1839</a></li> <li><a href="#">IRMNG Homonym List</a><br/>as <a href="#">Sericoides</a></li> <li><a href="#">Catalogue of Life</a><br/>as <a href="#">Sericoides</a></li> <li><a href="#">Catalogue of Life</a><br/>as <a href="#">Sericoides</a></li> <li><a href="#">NCBI Taxonomy</a><br/>as <a href="#">Sericoides</a></li> <li><a href="#">NCBI Taxonomy</a><br/>as <a href="#">Sericoides sp. BMNH 671333</a></li> </ul> |

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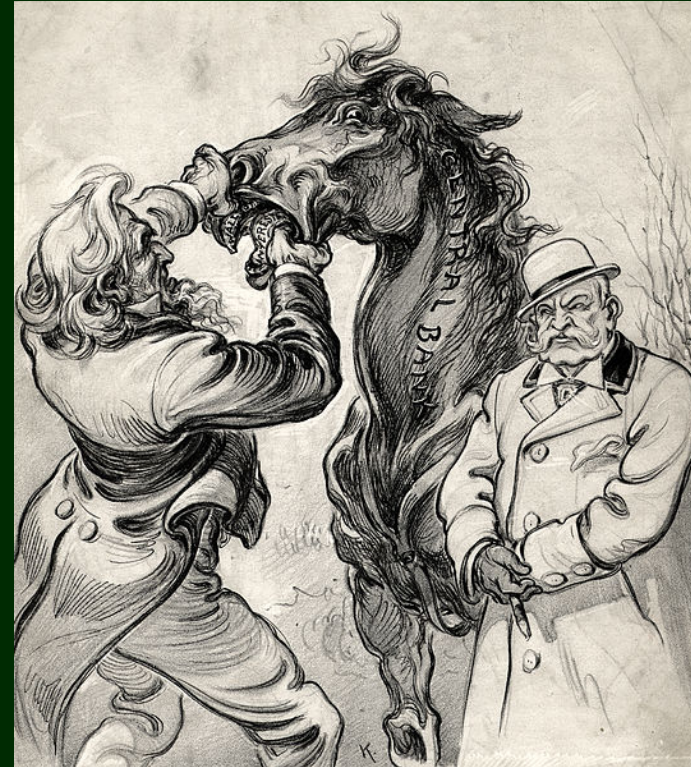


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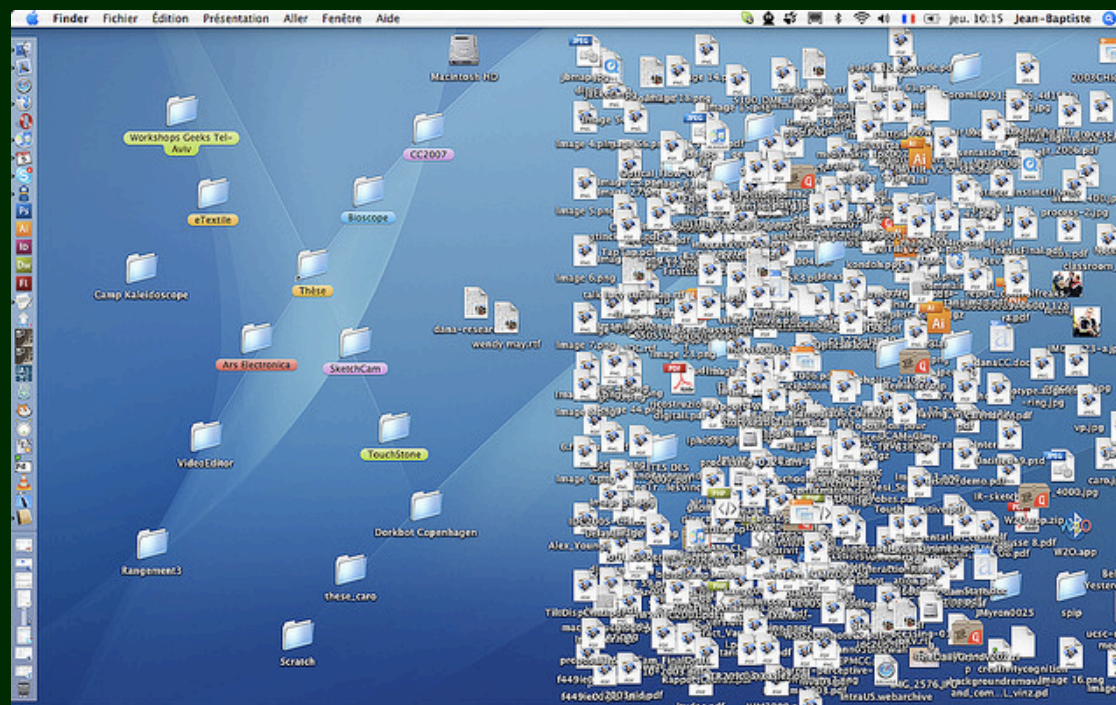
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# My recommendations for handling databases

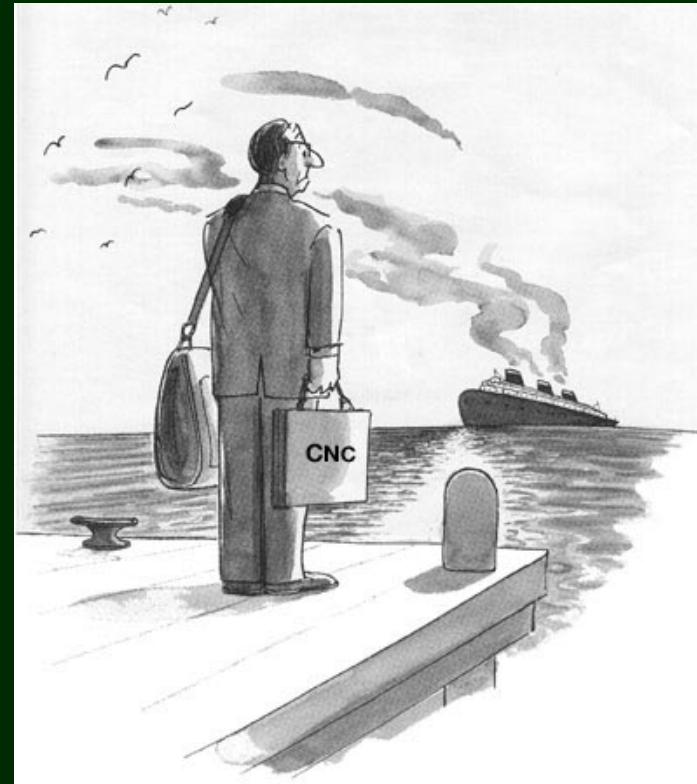
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