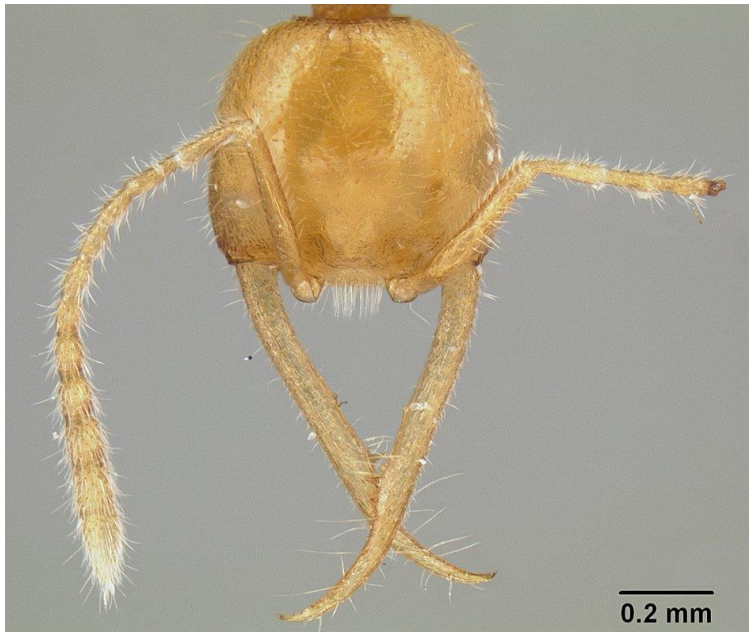


Making Ants Accessible

Christine Sosiak

New Jersey Institute of Technology

- Global ant database AntWeb
- AntCat, AntMaps, AntWiki
- How to use the databases in research
- Future directions

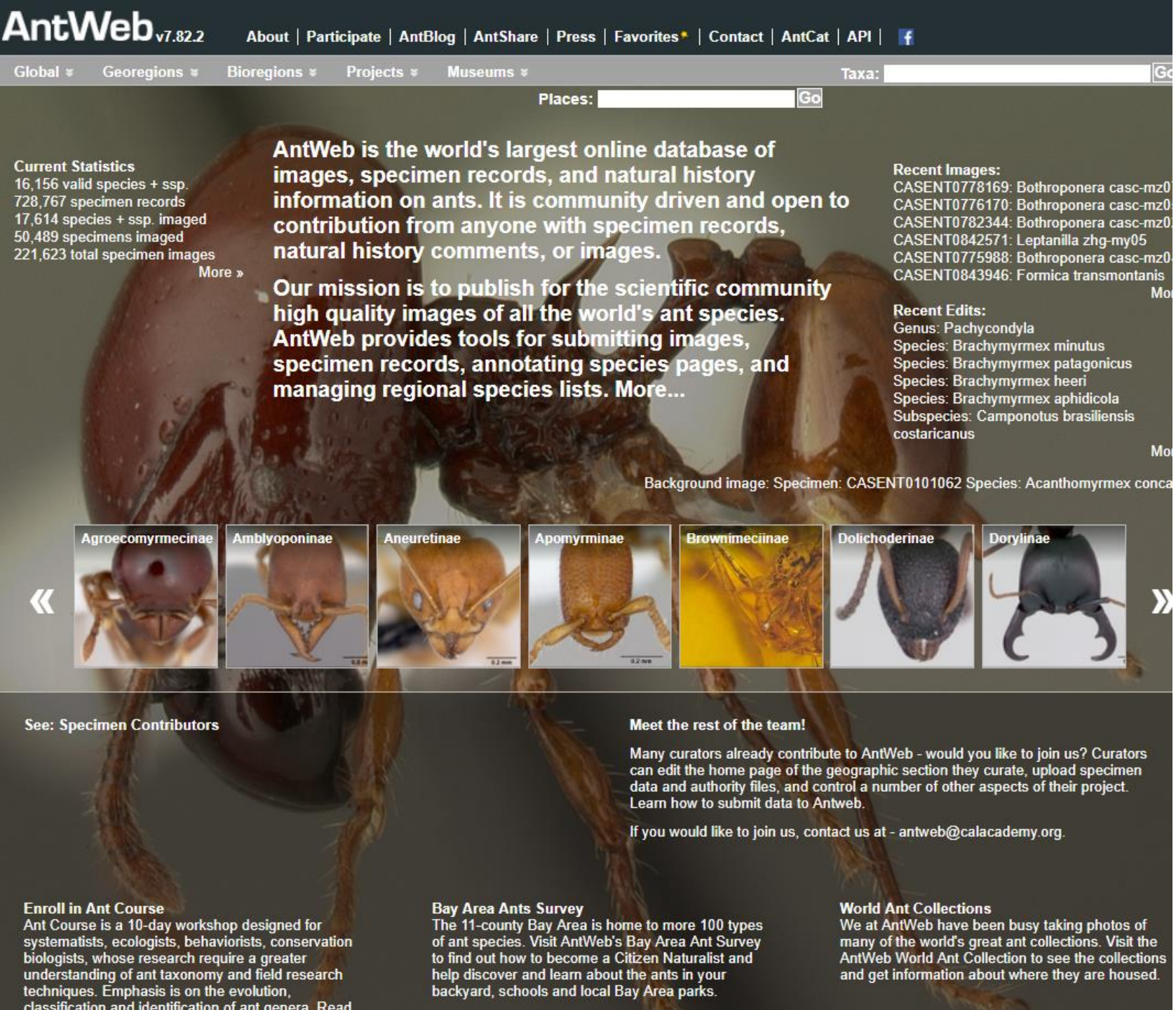
Dear Dr. Fisher,

I've collected 25,000 ant specimens and I have to finish my crummy thesis in 6 months! It all seemed like such a good idea at the time. What can I do? Please help!

Sincerely,

Panic-Stricken

from: Brian Fisher, Ant Course 2016



"…the ornithologists of the entomology world…"

Species: Solenopsis invicta Buren, 1972

Classification: Order: Hymenoptera Family: Formicidae Subfamily: Myrmicinae Genus: Solenopsis Species: invicta

Compare Images | Download Data

Taxonomic History (provided by Barry Bolton, 2019)

Solenopsis invicta Buren, 1972 PDF: 9, fig. 2 (w.q.m.) BRAZIL. Neotropic. AntCat AntWiki HOL

Taxonomic history

Wheeler & Wheeler, 1977a PDF: 588 (l.).

Junior synonym of *Solenopsis wagneri*: Bolton, 1995b: 388.

[Trager, 1991 PDF: 173 incorrectly gave *Solenopsis wagneri* as an unavailable name; the name is available and has p *Solenopsis invicta*, see note under *Solenopsis wagneri*.].

Solenopsis invicta conserved over *Solenopsis wagneri* because of usage, in accord with ICZN (1999): Shattuck *et al.*,

See also: Rhoades, 1977: 1; Smith, 1979: 1386.

Taxon Page Images:

Taxonomic Treatment (provided by Plazi)

Scientific Name	Status	Publication	Pages	ModsID	GoogleMaps
Solenopsis invicta		Wild, A. L., 2007, A catalogue of the ants of Paraguay (Hymenoptera: Formicidae)., Zootaxa 1622, pp. 1-55: 36, (download)	36	21367	
Solenopsis invicta		Ward, P. S., 2005, A synoptic review of the ants of California (Hymenoptera: Formicidae)., Zootaxa 936, pp. 1-68: -1, (download)	-1	21008	

Specimen Habitat Summary

Found most commonly in these habitats: 1 times found in urban garden, 17 times found in BLack Belt Prairie, 16 times found in nest in dolomite glade, 9 times found in sand bar beside creek, 8 times found in nest under a piece of wood in dolomite glade, 8 times found in plant nursery, 5 times found in desert scrub, 7 times found in dolomite glade, 6 times found in field at edge of parking lot, 5 times found in open area on ridge in mixed forest, ...

Found most commonly in these microhabitats: 9 times ground nest, 5 times pitfall trap, 5 times ground forager, 5 times leaf litter, 1 times efn Passiflora incarnata, 2 times nest under stone, 1 times nest under rock, 2 times mound colony, 1 times colony floating on water, 1 times pine oak woods, solenopsis another colony as above (1720) times palm/oak hammock, 1734, ...

Collected most commonly using these methods: 0 times Lindgren funnel baited with Typosan and alpha pinene, 28 times direct collection, 8 times search, 13 times Berlese funnel, 7 times pitfall trap, 7 times blacklight, 5 times tuna bait, 3 times beating, 3 times Malaise trap, 2 times Davis sifting, 2 times Winkler, ...

Elevations: collected from 1 - 1800 meters, 186 meters average

Type specimens: paratype of Solenopsis invicta: casent0902350; syntype of Solenopsis saevissima wagneri: casent0913949

Species: Solenopsis invicta Buren, 1972

Overview | Specimens | Images | Map

View in AntCat

Classification: Order: Hymenoptera Family: Formicidae Subfamily: Myrmicinae Genus: Solenopsis Species: invicta

776 Valid Extant Specimens (9 imaged)

See global set

Specimen Status: Valid Extant

Compare Images | Download Data

Sort by: Specimen Code

ARTHARCH00042796
No Images

Collection: tc767017047 Location: United States: Florida: Desoto County: Prairie Creek: Rt. 31 27.053333 °,-81.78333° Elevation: m

Habitat:
Microhabitat:
Notes:2 specimens on pin
Medium:Pinned Specimen

Collected by: Robert Buckbee
Date Collected: 1972-01-21
Uploaded: 2018-09-06 00:10:24.0
Data provided by: Archbold Biological Station

Owned by: ABS, Lake Placid, FL, USA
Located At: ABS
Determined by:

Method:
DNA Notes:
Museum: ABS

Type Status:
Life Stage:
Caste:
Subcaste:
Bioregion: Nearctic

ARTHARCH00042797
No Images

Collection: tc767015274 Location: United States: Florida: Baker County: Osceola National Forest: Ocean Pond Campground 30.24 °,-82.433° Elevation: m

Habitat:
Microhabitat:
Notes:4 specimens on pin
Medium:Pinned Specimen

Collected by: Lloyd R. Davis, Jr.
Date Collected: 1991-03-31
Uploaded: 2018-09-06 00:10:22.0
Data provided by: Archbold Biological Station

Owned by: ABS, Lake Placid, FL, USA
Located At: ABS
Determined by:

Method:
DNA Notes:
Museum: ABS

Type Status:
Life Stage:
Caste:
Subcaste:
Bioregion: Nearctic

ARTHARCH00042798
No Images

Collection: tc767017204 Location: United States: Florida: Brevard County: Cocoa Beach: Beachfront Area 28.32 °,-80.608° Elevation: m

Habitat:
Microhabitat:
Notes:4 specimens on pin; Spec...
Medium:PreservedSpecimen

Collected by: Mark Deyrup
Date Collected: 1990-01-19
Uploaded: 2018-09-06 00:10:24.0
Data provided by: Archbold Biological Station

Owned by: ABS, Lake Placid, FL, USA
Located At: ABS
Determined by:

Method:
DNA Notes:
Museum: ABS

Type Status:
Life Stage:
Caste:
Subcaste:
Bioregion: Nearctic

ARTHARCH00042799
No Images

Collection: tc767015174 Location: United States: Florida: Bradford County: Hampton: 29.864 °,-82.131° Elevation: m

Habitat:
Microhabitat:
Notes:
Medium:Pinned Specimen

Collected by: Lloyd R. Davis, Jr.
Date Collected: 1991-12-11
Uploaded: 2018-09-06 00:10:22.0
Data provided by: Archbold Biological Station

Owned by: ABS, Lake Placid, FL, USA
Located At: ABS
Determined by:

Method:
DNA Notes:
Museum: ABS

Type Status:
Life Stage:
Caste:
Subcaste:
Bioregion: Nearctic

Species: Solenopsis invicta

Overview | Specimens | Images
View in AntCat

Classification: Order: Hymenoptera Family: Formicidae Subfamily: Myrmicinae Genus: Solenopsis Species: invicta

Comparison within species Solenopsis invicta

Back to Species Solenopsis invicta

Select specimens, and view, and click "Compare Selected".

View: Head Profile Dorsal Label Compare Selected

CASENT0005804 Solenopsis invicta



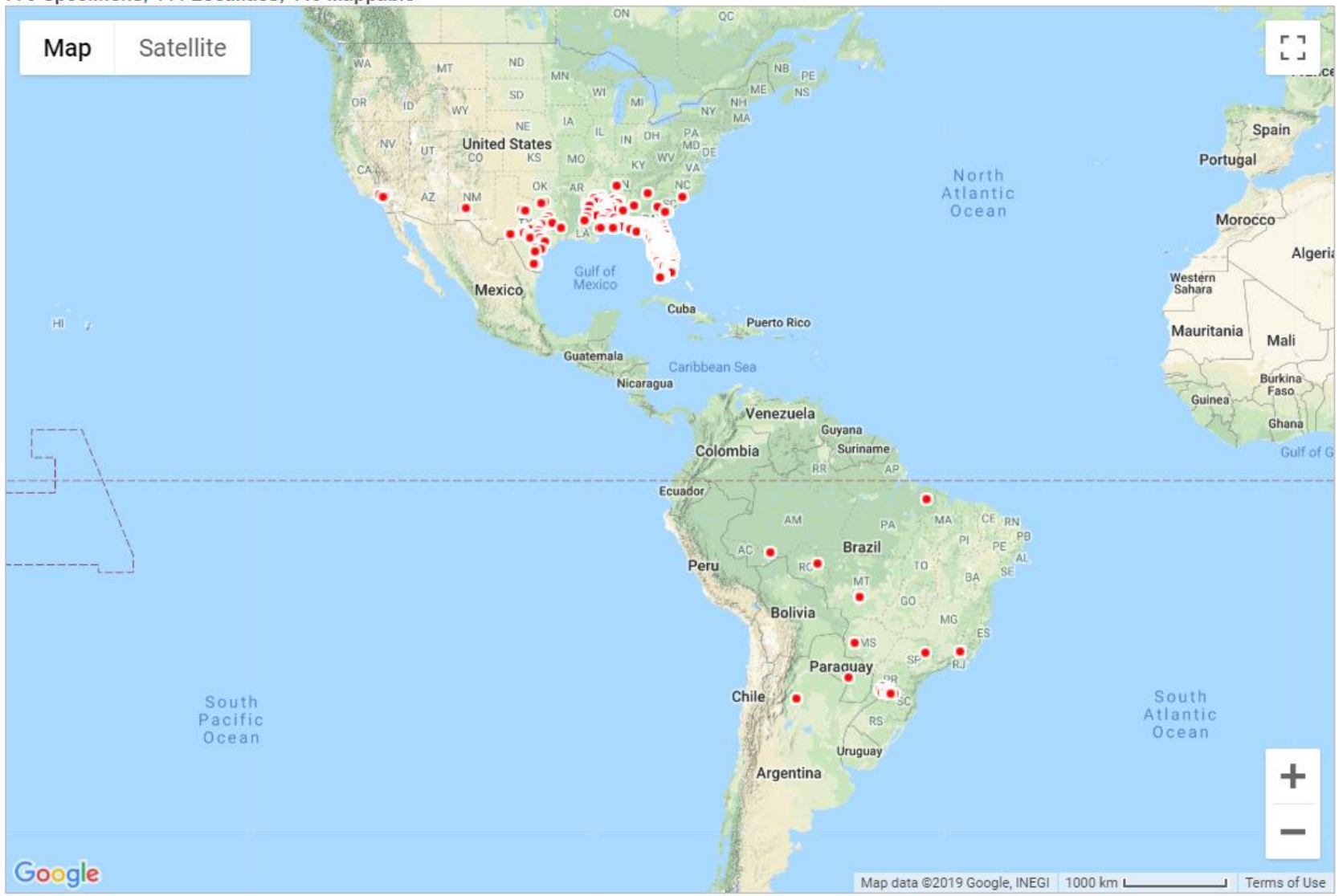

CASENT0104503 Solenopsis invicta

CASENT0104504 Solenopsis invicta

Species: Solenopsis invicta Buren, 1972

Classification: Order: Hymenoptera Family: Formicidae Subfamily: Myrmicinae Genus: Solenopsis Species: invicta

775 Specimens, 444 Localities, 443 Mappable



Georegion: Americas - North America - United States - Virginia Change View Go

Cite this page

State/Province: Virginia

Overview | Taxa | Images

Genera in the Georegion list are based on the following sources: a) specimen records of valid species from the region, b) AntCat.org type locality information, and c) Curator added records. Curators may add or remove valid species or morphospecies from the list. Morphospecies, however, must have at least one specimen record in Antweb though not necessary from the specific georegion).

To see all genera from specimen records in this adm1, click on **Show Specimen Taxa** at the top of the list.

24 Valid Extant Genera

Show Specimen Taxa

Genus Status: Valid Extant

Taxon Name	Author Date	Species	Images	Map	Source
Aphaenogaster	Mayr, 1853	6 Species	163 Images	Map	Specimen
Brachymyrmex	Mayr, 1868	1 Species	58 Images	Map	Specimen
Camponotus	Mayr, 1861	5 Species	159 Images	Map	Specimen
Colobopsis	Mayr, 1861	2 Species	57 Images	Map	Specimen
Crematogaster	Lund, 1831	4 Species	168 Images	Map	Specimen
Dolichoderus	Lund, 1831	1 Species	12 Images	Map	Specimen
Formica	Linnaeus, 1758	15 Species	375 Images	Map	Specimen
Lasius	Fabricius, 1804	7 Species	187 Images	Map	Specimen
Monomorium	Mayr, 1855	2 Species	104 Images	Map	Specimen
Myrmecina	Curtis, 1829	1 Species	46 Images	Map	Specimen
Myrmica	Latreille, 1804	2 Species	12 Images	Map	Specimen
Nylanderia	Emery, 1906	2 Species	38 Images	Map	Specimen
Pheidole	Westwood, 1839	1 Species	26 Images	Map	Specimen
Polyergus	Latreille, 1804	2 Species	47 Images	Map	Specimen
Ponera	Latreille, 1804	1 Species	82 Images	Map	Specimen
Prenolepis	Mayr, 1861	1 Species	88 Images	Map	Specimen
Proceratium	Roger, 1863	3 Species	121 Images	Map	Specimen
Solenopsis	Westwood, 1840	2 Species	70 Images	Map	Specimen
Stenamma	Westwood, 1839	2 Species	51 Images	Map	Specimen
Stigmatomma	Roger, 1859	1 Species	105 Images	Map	Specimen
Strumigenys	Smith, 1860	6 Species	93 Images	Map	Specimen
Tapinoma	Foerster, 1850	1 Species	75 Images	Map	Specimen
Temnothorax	Mayr, 1861	4 Species	132 Images	Map	Specimen
Tetramorium	Mayr, 1855	3 Species	174 Images	Map	Specimen

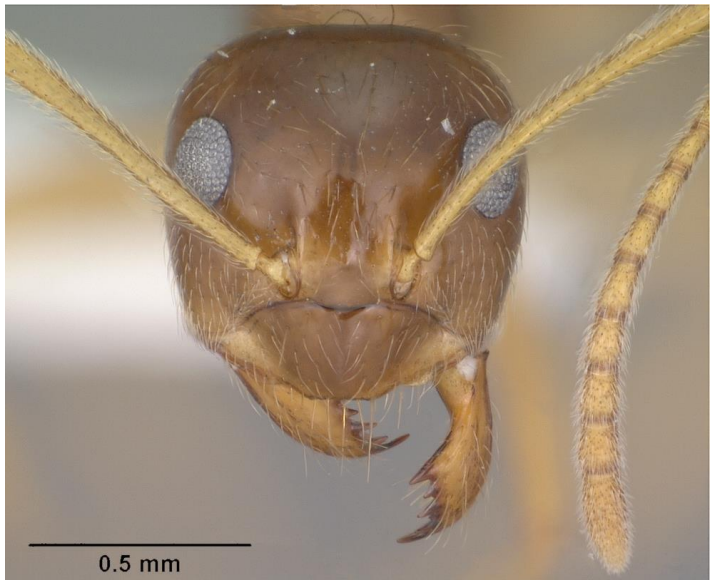
Georegion: Americas - North America - United States - Virginia

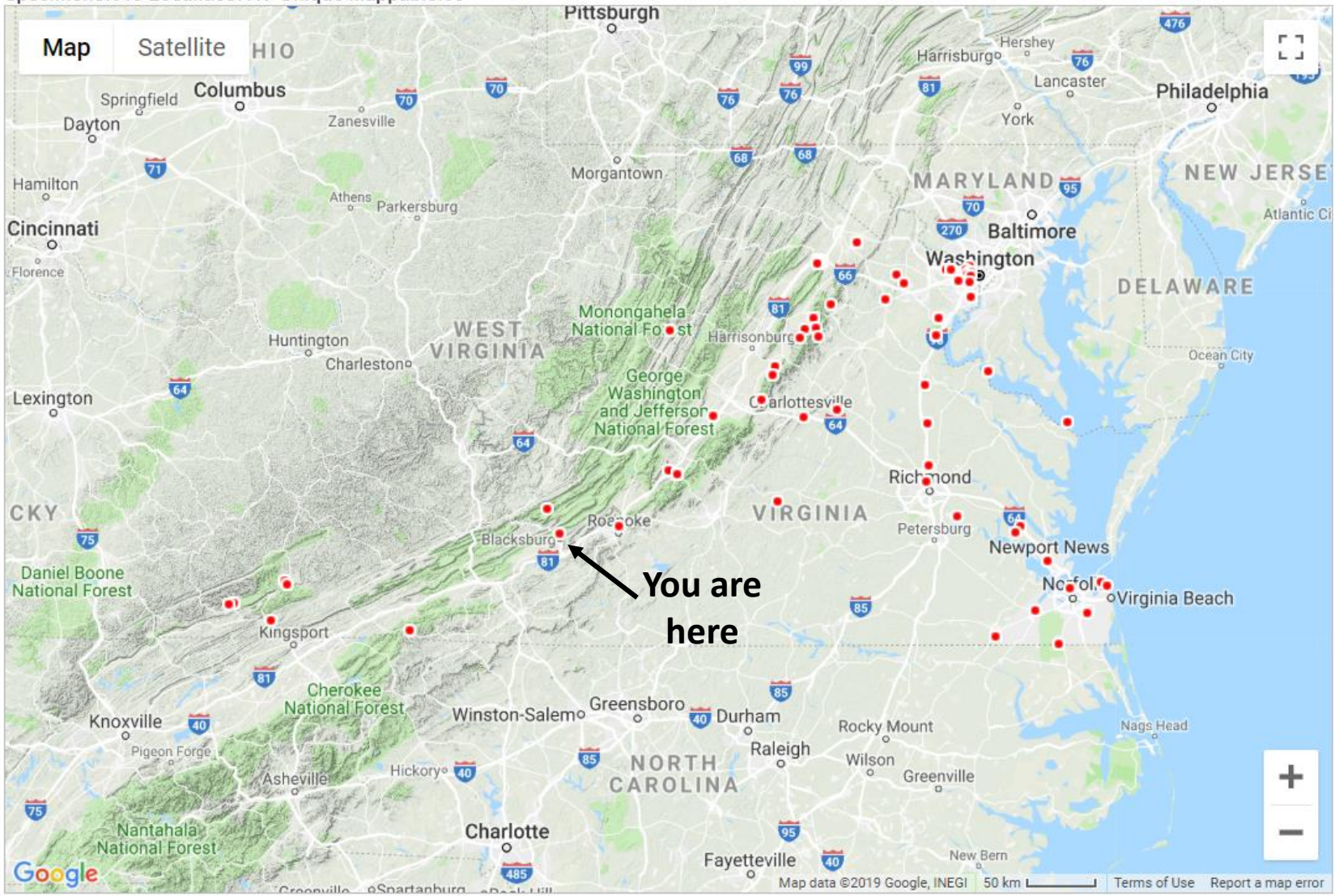
Cite this page

Adm1: Virginia, United States

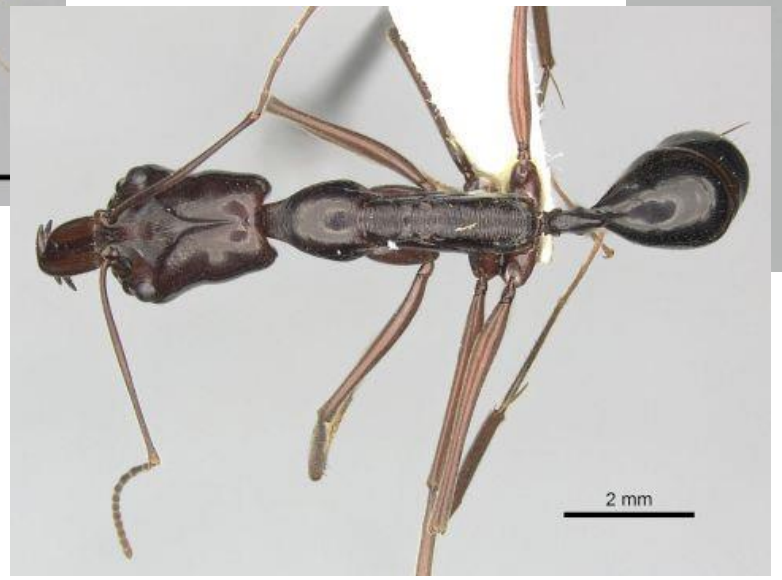
To see a map of the null in Adm1: Virginia, United States, click: here

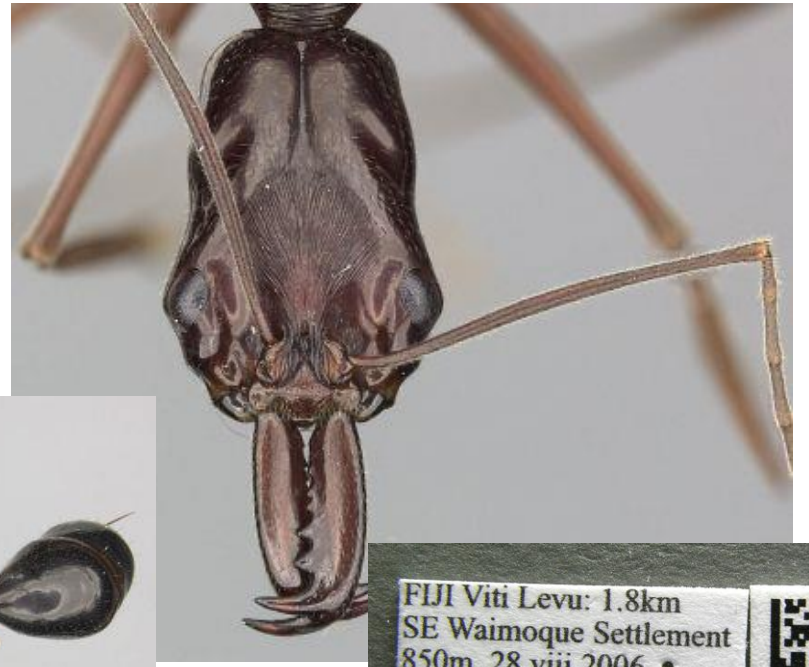
Specimens:515 Localities:117 Unique Mappable:99

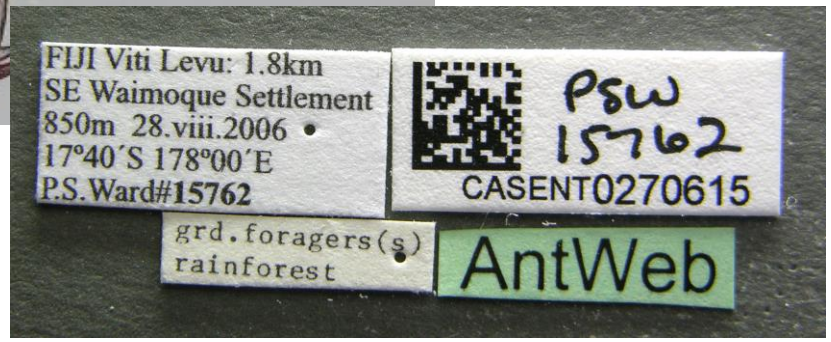




- Launched in 2002
- Digitized collections from 20 major museums and many smaller ones
- Over 220,000 total specimen images, over 720,000 specimen records total

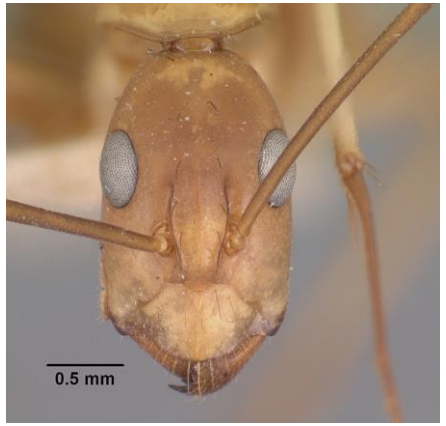


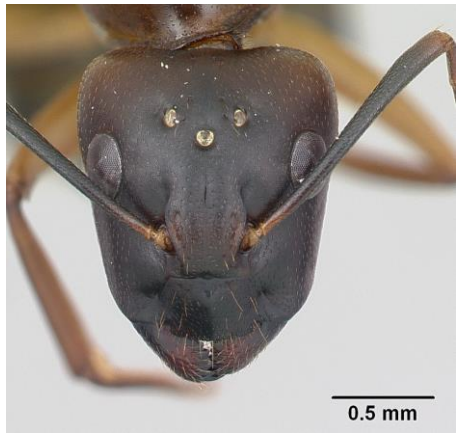


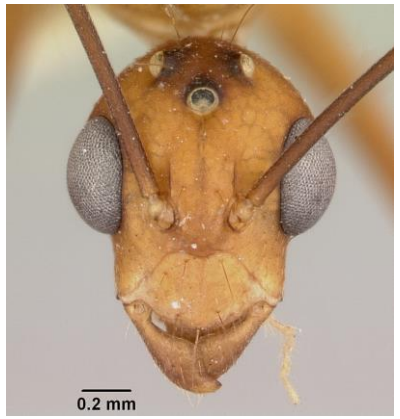


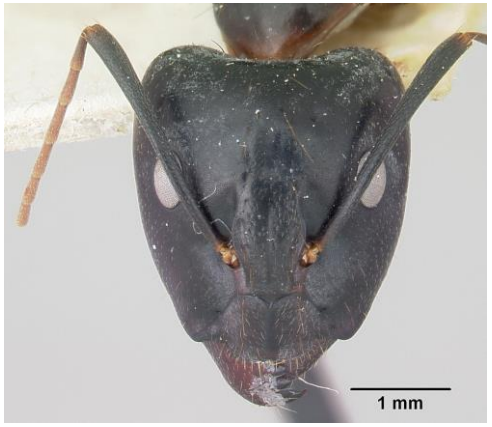
Series of *Odontomachus angulatus* (AntWeb) showing standardized image sets

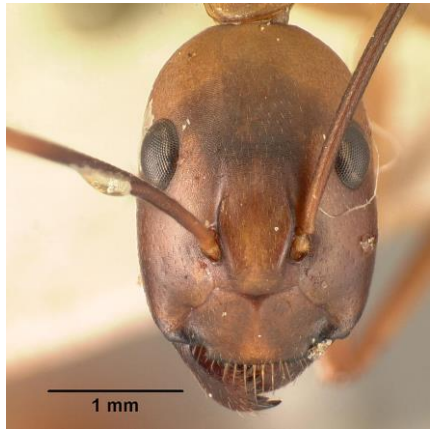
This specimen is one of 78 specimens databased on AntWeb, all collected from Fiji where the species is endemic.





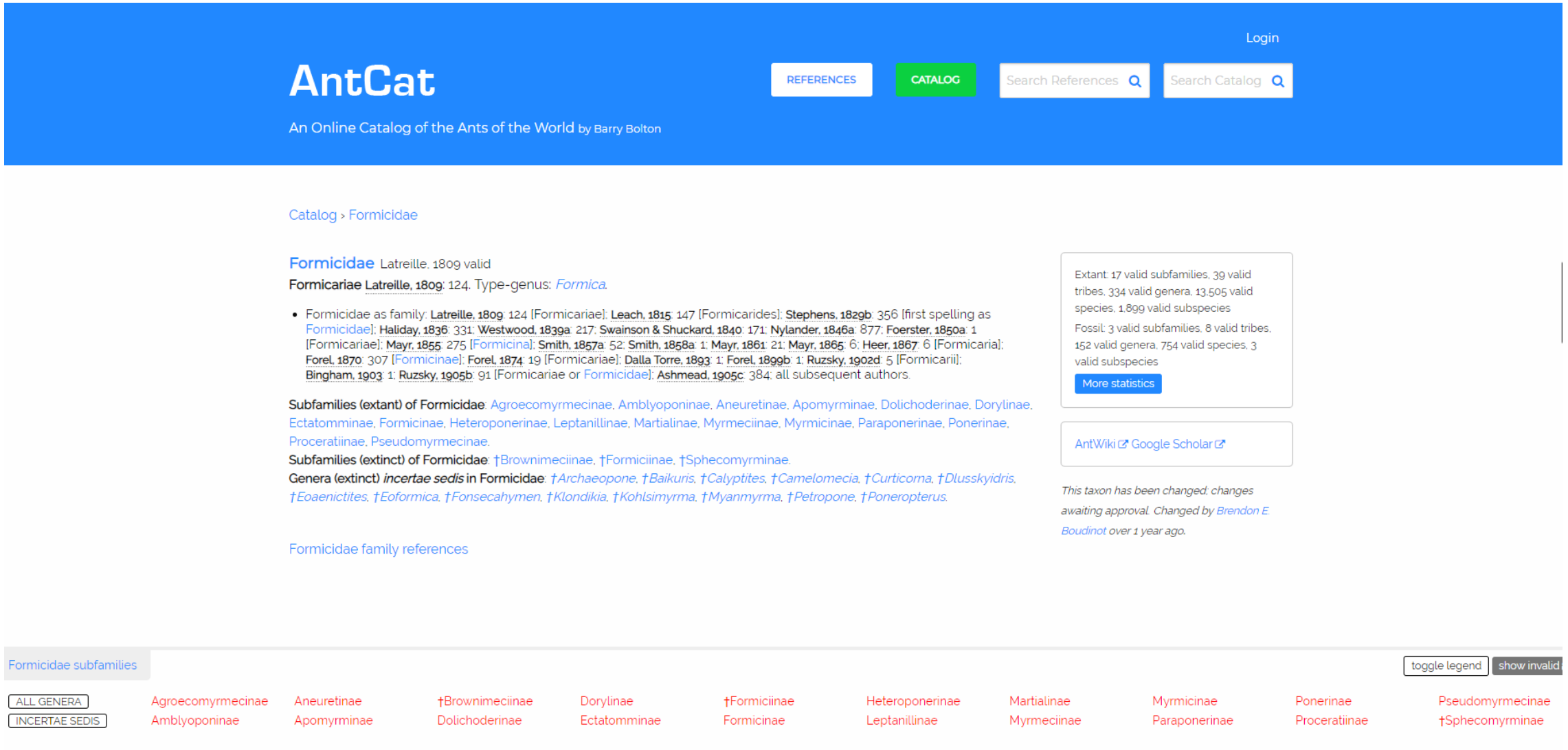






Series of images from AntWeb of various *Camponotus maculatus* castes

Barry Bolton's "Catalogue of Ants of the World"



Solenopsis invicta Buren, 1972 valid

Solenopsis invicta **Buren, 1972**: 9, fig. 2 (w.q.m.) BRAZIL. Neotropic.

- **Wheeler & Wheeler, 1977a**: 588 (l.).
- Junior synonym of *Solenopsis wagneri*: **Bolton, 1995b**: 388.
- [**Trager, 1991**: 173 incorrectly gave *Solenopsis wagneri* as an unavailable name; the name is available and has priority over *Solenopsis invicta*, see note under *Solenopsis wagneri*.].
- *Solenopsis invicta* conserved over *Solenopsis wagneri* because of usage, in accord with ICZN (1999): **Shattuck *et al.*, 1999**: 27.
- See also: **Rhoades, 1977**: 1; **Smith, 1979**: 1386.

AntWeb AntWiki HOL
Google Scholar

1 junior synonym

- *Solenopsis wagneri* Santschi, 1916

Formicidae subfamilies | Myrmicinae tribes | Solenopsidini genera | *Solenopsis* species

toggle legend | show invalid

ALL TAXA

abdita *abjectior* *africana* *alecto* *†alena* *altinodis* *alvarengai* *amblychila*
brevicornis *bruchiella* *bruesi* *bucki* *canariensis* *capensis* *carolinensis* *castor* *celata*
decipiens *dentata* *desecheoensis* *deserticola* *dysderces* *egregia* *electra* *elhawagryi* *emeryi*
gayi *geminata* *gensterblumi* *georgica* *germaini* *globularia* *gnoma* *gnomula* *goeldii*
interrupta *invicta* *isopilis* *jacoti* *jalalabadica* *japonica* *joergenseni* *johnsoni* *juliae*
longinoi *loretana* *lotophaga* *lou* *lucayensis* *lusitanica* *maboya* *macdonaghi* *macrops*
metallica *metanotalis* *metatarsalis* *minutissima* *†moesta* *molesta* *mozabensis* *nickersoni* *nigella*
orestes *orientalis* *overbecki* *pachycera* *papuana* *parva* *patagonica* *patriciae* *pawaensis*
pusillignis *pygmaea* *pythia* *quadridentata* *quinquecuspis* *richteri* *rosella* *rugiceps* *sabeana*
soochowensis *striata* *stricta* *substituta* *subterranea* *subtilis* *succinea* *sulfurea* *sumara*
tridens *ugandensis* *†valida* *validiuscula* *vinsoni* *virulens* *vorax* *wasmannii* *westwoodi*

DIVERSITY VIEW

SPECIES RANGE MAPS

REGION COMPARISON

Subfamily

All Subfamilies

PREV NEXT

Genus

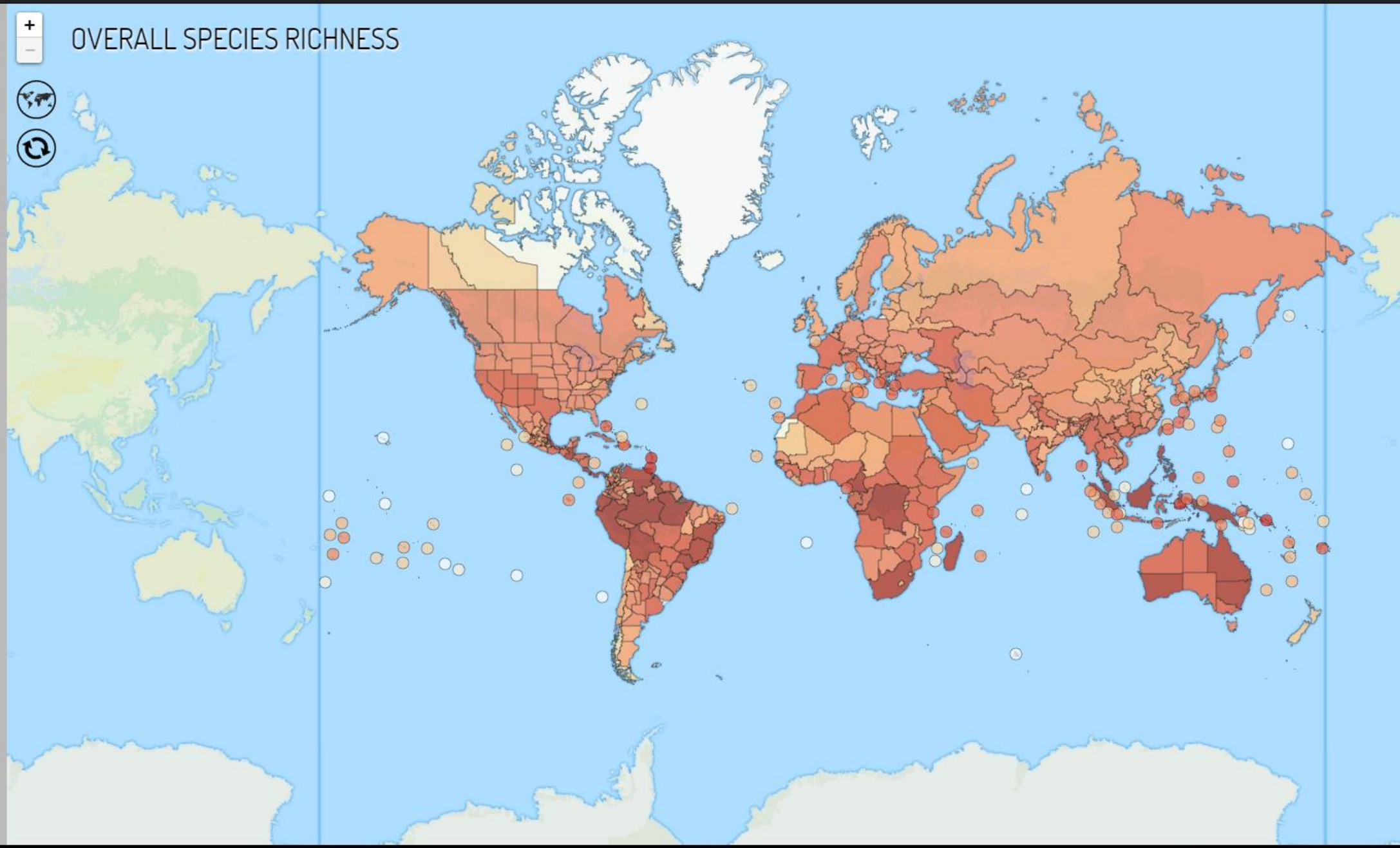
All Genera

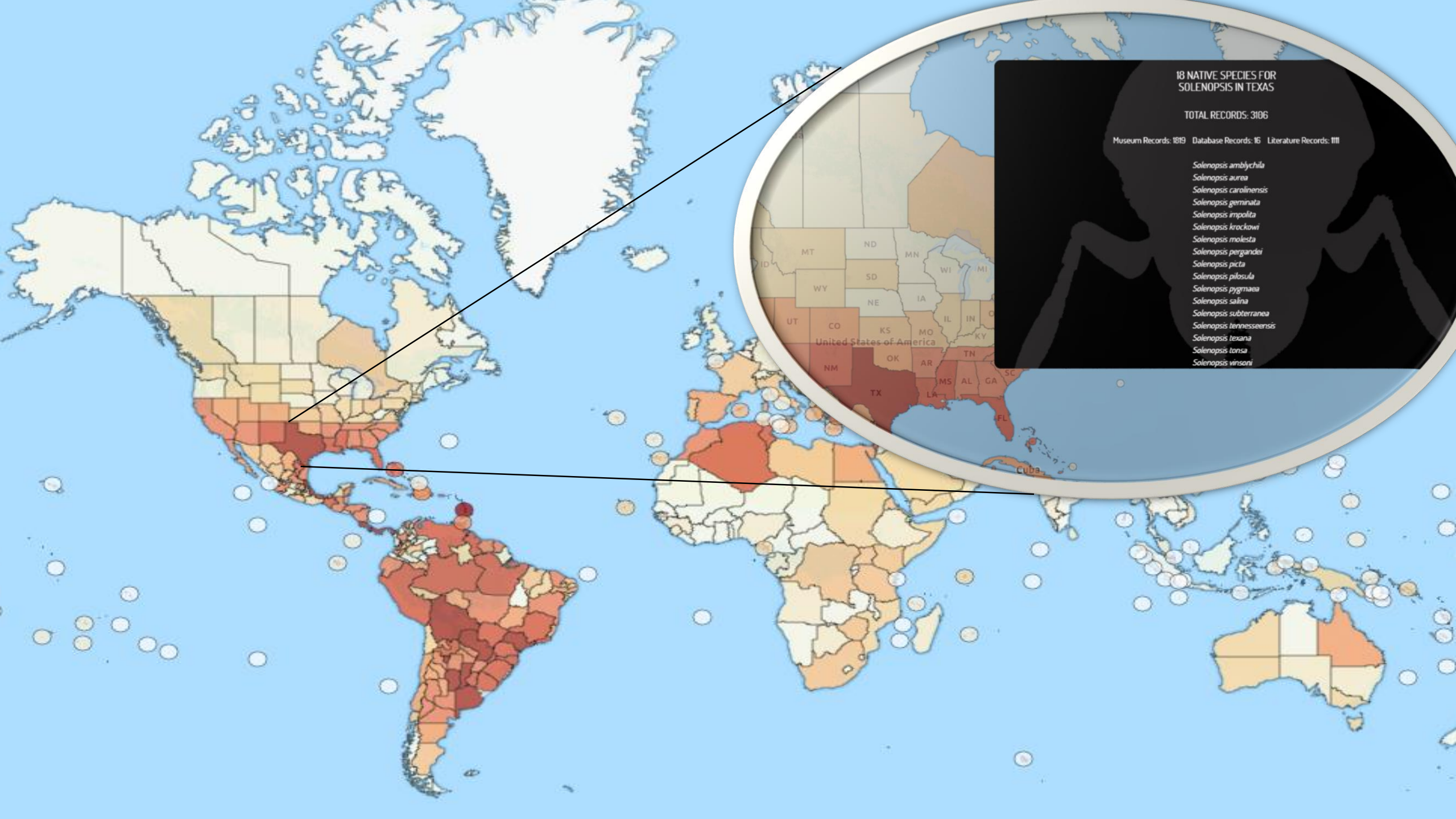
PREV NEXT

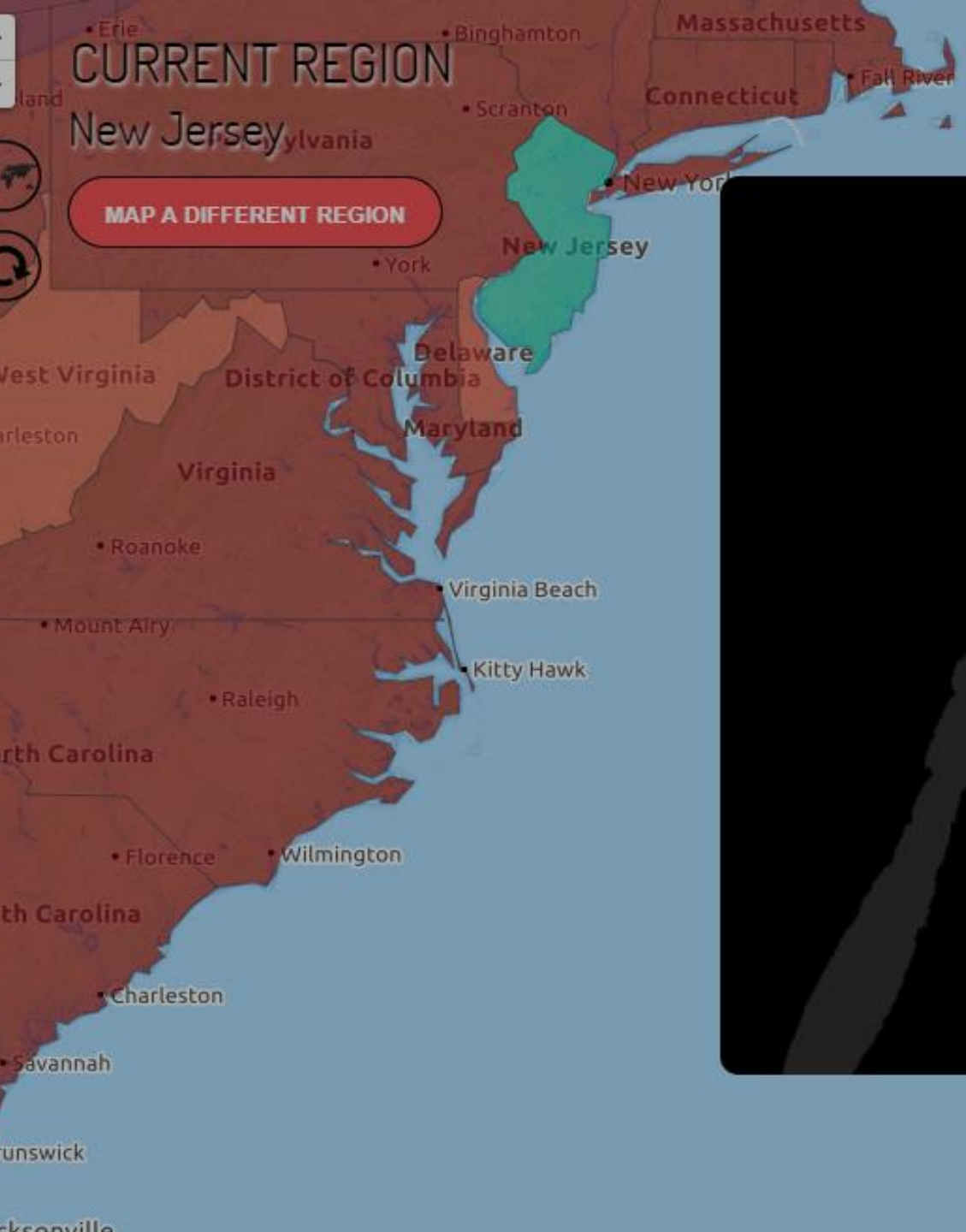
Number of species by region

0
1 ~ 2
3 ~ 8
9 ~ 22
23 ~ 64
65 ~ 183
184 ~ 521
522 ~ 1478

OVERALL SPECIES RICHNESS



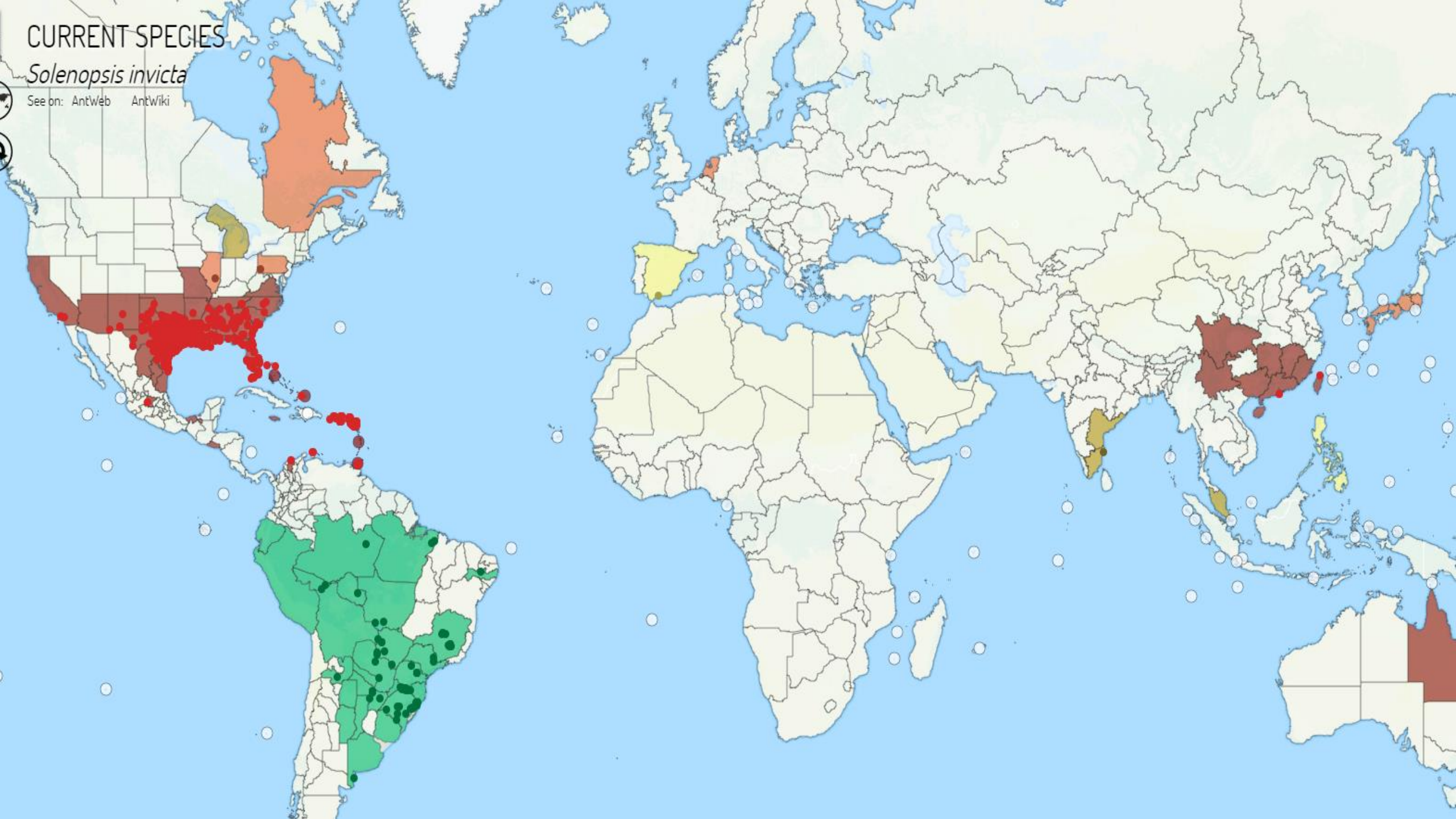

18 NATIVE SPECIES FOR
SOLENOPSIS IN TEXAS
TOTAL RECORDS: 3106
Museum Records: 1819 Database Records: 16 Literature Records: 1111
Solenopsis amblychila
Solenopsis aurea
Solenopsis carolinensis
Solenopsis geminata
Solenopsis impolita
Solenopsis krockowi
Solenopsis molesta
Solenopsis pergandei
Solenopsis picta
Solenopsis pilosula
Solenopsis pygmaea
Solenopsis salina
Solenopsis subterranea
Solenopsis tennesseensis
Solenopsis texana
Solenopsis tonsa
Solenopsis vinsoni
United States of America
Cuba



90 NATIVE SPECIES IN COMMON BETWEEN VIRGINIA AND NEW JERSEY

MAP SPECIES PRESENT IN VIRGINIA

- *Aphaenogaster carolinensis*
- *Aphaenogaster fulva*
- *Aphaenogaster lamellidens*
- *Aphaenogaster picea*
- *Aphaenogaster rudis*
- *Aphaenogaster treatae*
- *Brachymyrmex depilis*
- *Camponotus americanus*
- *Camponotus caryae*
- *Camponotus castaneus*
- *Camponotus chromaiodes*
- *Camponotus nearcticus*
- *Camponotus novaeboracensis*
- *Camponotus pennsylvanicus*
- *Camponotus subbarbatus*
- *Crematogaster cerasi*
- *Crematogaster laeviuscula*
- *Crematogaster lineolata*
- *Crematogaster pilosa*


CURRENT SPECIES
Solenopsis invicta
See on: AntWeb AntWiki

Welcome to AntWiki

AntWiki - Where Ant Biologists Share Their Knowledge

Main page
Recent changes
Random page
About Antwiki
Help

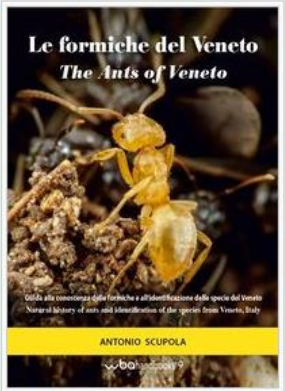
Topics
- Species Accounts
- Life History
- Behaviour
- Distribution & Diversity
- Ant Societies
- Morphology & Terminology
- Biochemistry, Genetics & Evolution
- Ecology
- Human Culture & Ants
- People & History
- Extinct Ants
- Table of Contents

Tools
- What links here
- Related changes
- Special pages
- Printable version
- Permanent link
- Page information
- Browse properties

Antwiki provides a wealth of information on the world's ants.

27,086 articles and 114,278 uploaded files by ant experts from around the world.

Recent Events Show All



- La formiche del Veneto. The ants of Veneto. Antonio Scupola (WBA). A field guide for the ants of Veneto, Italy. This excellent book not only provides information that can be useful to a naturalist interested in ants, it is also a great resource for biologists and myrmecologists that want to study ants in this region of Italy. The book includes general information about ant morphology and biology, keys (in Italian and English) and species accounts.
- Pinkalski et al. (2017) have discovered that coffee leaves are able to take up nitrogen from ant faecal droplets of *Oecophylla smaragdina* left on the leaf surfaces. The abundance of ant foragers on tropical vegetation suggests if this mechanism of foliar nitrogen uptake operates across many plants species, it could represent a highly significant provider of key nutrients for plants.

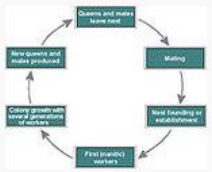
Featured Image Show All

A major worker, minors, and brood of *Carebara jajoby* (Image by Christian Peeters).

An image from the 2018 revision of the *Carebara* of the Malagasy Region by Azore and Fisher. [1].

I'm Interested In

Identification & Species Accounts

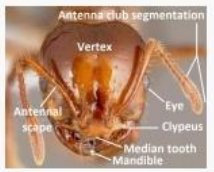


Life History

Behavior

Distribution & Diversity

Ant Societies



Morphology, Anatomy & Terminology

Biochemistry, Genetics & Evolution

Pages in category "Identification key"

The following 200 pages are in this category, out of 804 total.

(previous 200) (next 200)

A

- Key to Acanthognathus Species
- Key to Acanthostichus males
- Key to Acanthostichus workers
- Key to US Acanthostichus species
- Key to Australian Acropyga Species
- Key to New World Acropyga Males
- Key to New World Acropyga Queens
- Key to New World Acropyga Workers
- Key to Old World Acropyga Males
- Key to Old World Acropyga Queens
- Key to Old World Acropyga Workers
- Key to Adelomyrmex of the New World mainland
- Key to Adetomyrma males
- Key to Adetomyrma workers
- Key to Aenictus ceylonicus group species of China
- Key to Aenictus currax group species
- Key to Aenictus javanus group species
- Key to Aenictus laeviceps group species
- Key to Aenictus minutulus group species
- Key to Aenictus of India
- Key to Aenictus of Laos
- Key to Aenictus pachyerus group species
- Key to Aenictus phillippinensis group species
- Key to Aenictus silvestrii group species
- Key to Aenictus species groups
- Key to Aenictus wroughtonii group species
- Key to Australian Aenictus Species
- Key to southeastern Asian Aenictus ceylonicus group species
- Key to Allomerus species
- Key to Amblyopone of the southwestern Australian Botanical Province
- Key to Australian Amblyoponinae Genera
- Key to Neotropical Amblyoponinae genera
- Key to North American Genera of Amblyoponinae
- Key to Philippine Amblyoponinae

B

- Key to Bannapone species
- Key to Baracidris species
- Key to Basiceros species
- Key to Blepharidatta males
- Key to Blepharidatta workers and queens
- Key to Afrotropical Boloponera species
- Key to Afrotropical Bothroponera species complexes
- Key to Bothroponera pumicosa species complex
- Key to Bothroponera sulcata species complex
- Key to Ethiopian Bothroponera
- Key to Malagasy Bothroponera wasmannii group workers
- Key to Brachymyrmex with tumuliform metathoracic spiracles
- Key to Brachyponera nigrita species group queens
- Key to Brachyponera nigrita species group workers

C

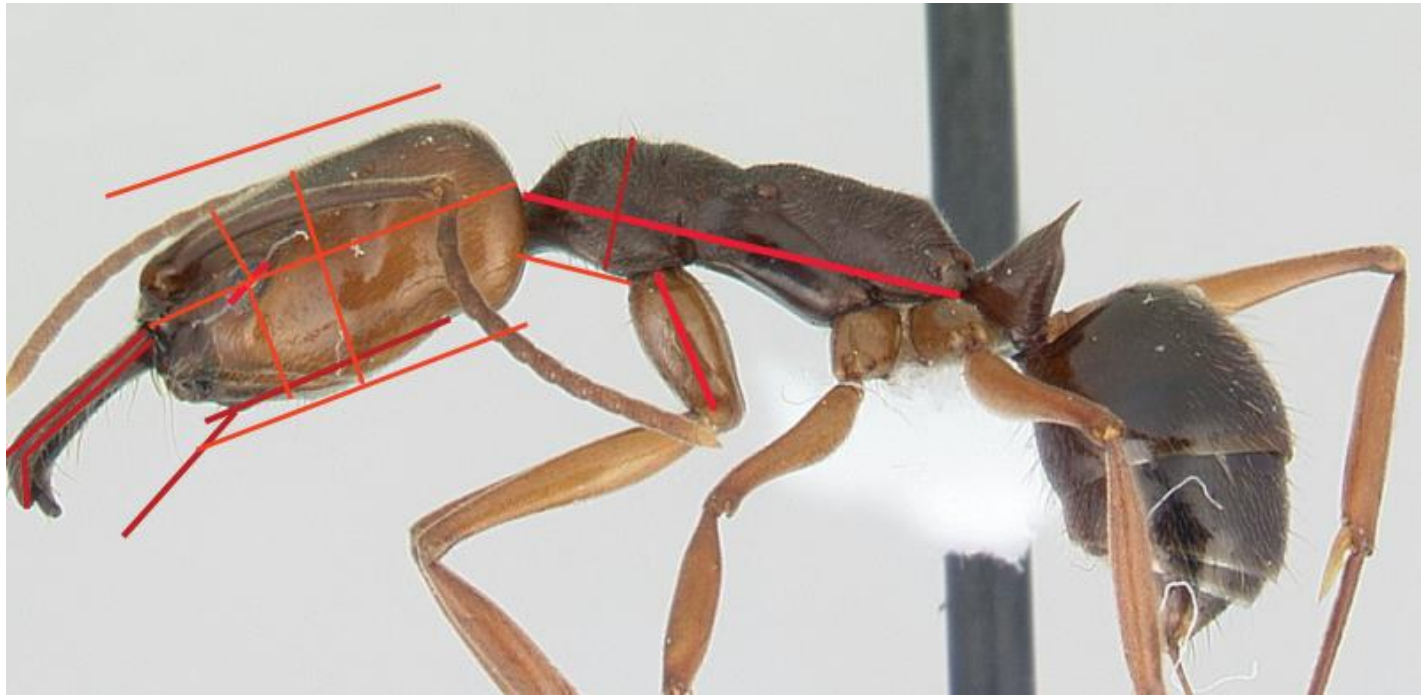
- Key to Afrotropical Calyptomyrmex workers
- Key to Australian Calyptomyrmex Species
- Key to Calyptomyrmex of Southeast Asia and Oceania
- Genera Insectorum: Emery's key to Camponotus subgenera of the New World
- Genera Insectorum: Emery's key to Camponotus subgenera of the Old World
- Key to Afrotropical Camponotus fulvopilosus species group
- Key to Australian Camponotus majors of the southwestern Botanical Province
- Key to Australian Camponotus minors of the southwestern Botanical Province
- Key to Australian Camponotus species
- Key to Camponotus aureopilis species-group
- Key to Camponotus Karavaievia males
- Key to Camponotus Karavaievia queens
- Key to Camponotus Karavaievia workers
- Key to Camponotus maculatus species complex in the New World
- Key to Camponotus Myrmopytia workers
- Key to Camponotus of Israel
- Key to Camponotus of Turkey
- Key to Forelophilus species

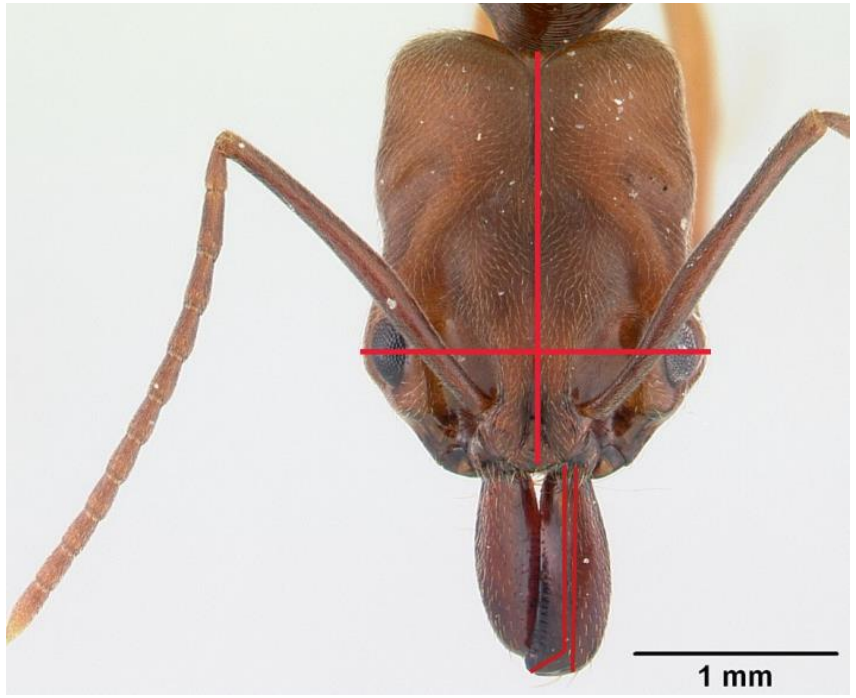
C cont.

- Key to Asian Crematogaster ranavalonae group species
- Key to Crematogaster borneensis group queens
- Key to Crematogaster borneensis group workers
- Key to Crematogaster brevis group workers
- Key to Crematogaster degeeri group queens
- Key to Crematogaster degeeri group workers
- Key to Crematogaster hova-group workers of Madagascar
- Key to Crematogaster kelleri group males
- Key to Crematogaster kelleri group queens
- Key to Crematogaster kelleri group workers
- Key to Crematogaster of the north-eastern Mediterranean Basin
- Key to Crematogaster of the southwestern Australian Botanical Province
- Key to Crematogaster Physocrema species
- Key to Crematogaster species groups of the Malagasy region
- Key to eastern US Crematogaster
- Key to Malagasy Crematogaster Orthocrema queens
- Key to Malagasy Crematogaster Orthocrema workers
- Key to North American Crematogaster species
- Key to West European Crematogaster species
- Key to western US Crematogaster
- Key to Crematogaster of Costa Rica
- Key to Cryptomyrmex species
- Key to Cryptopone of India
- Key to Cylindromyrmex males
- Key to Cylindromyrmex queens
- Key to Cylindromyrmex Species
- Key to Cylindromyrmex workers
- Key to Cyphoidris
- Key to US Cyphomyrmex species

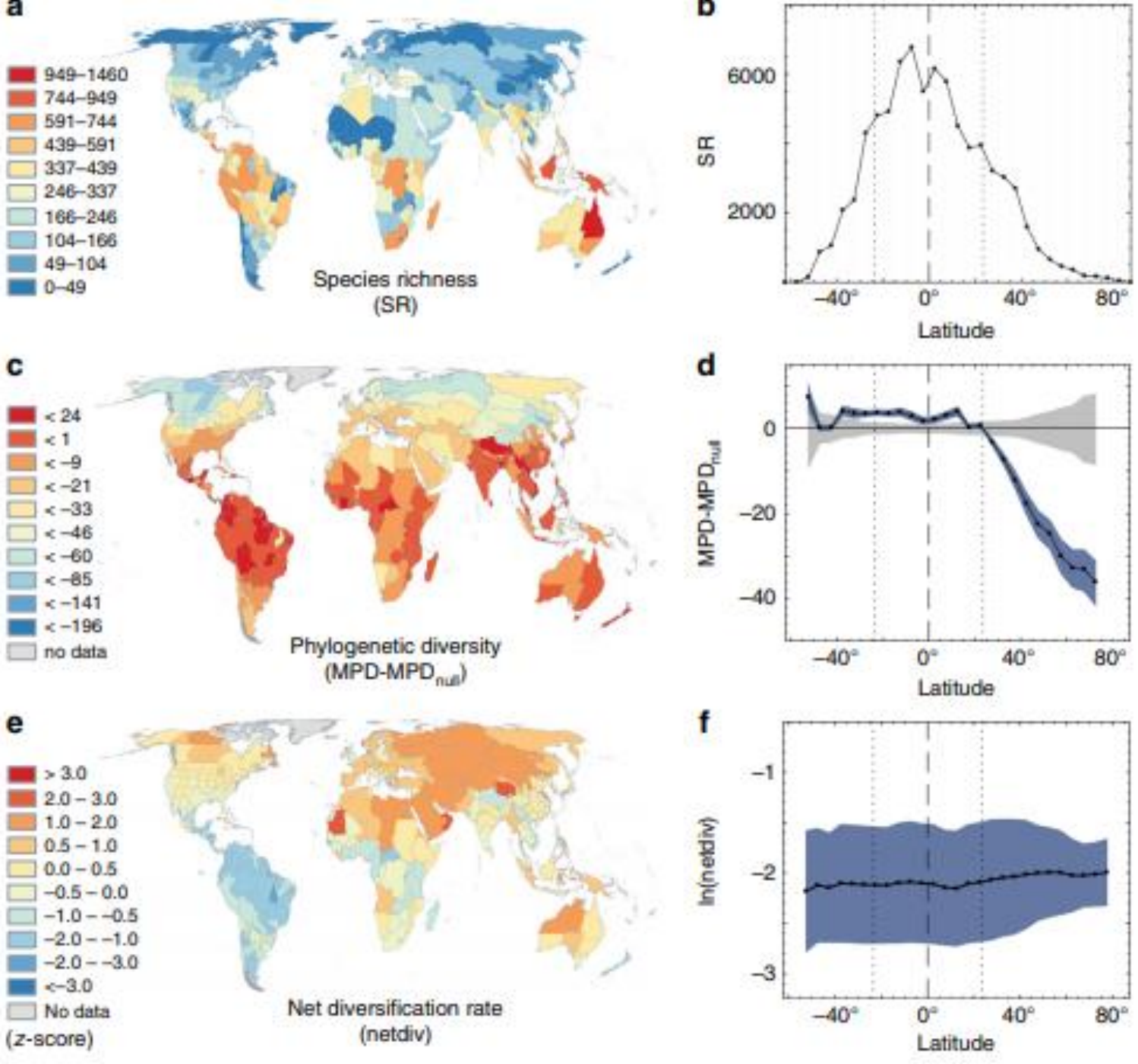
D

- Key to Dacetini
- Key to Dacetini 2007
- Key to Daceton species





ImageJ: image processing and analysis application



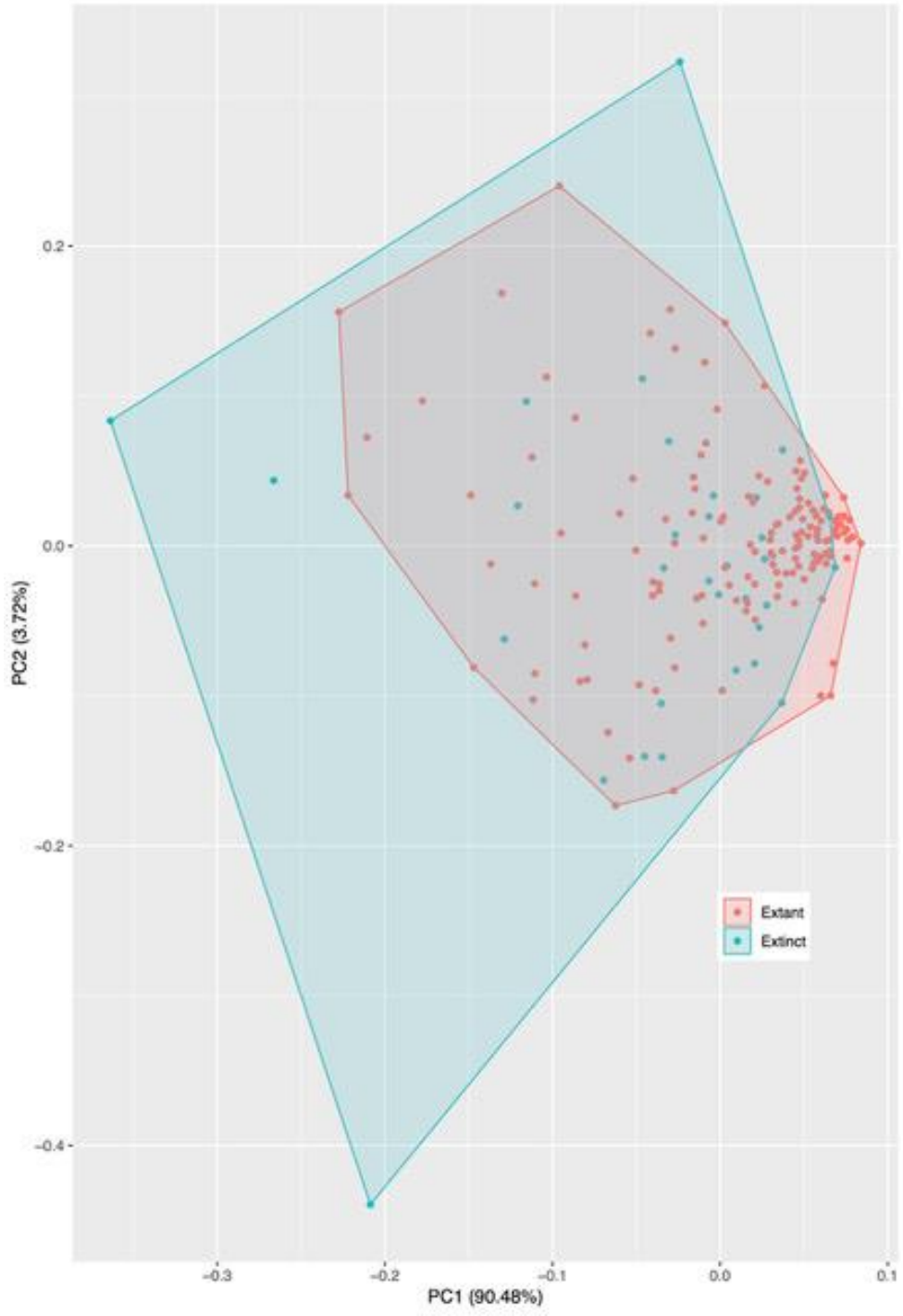
Combination of global biogeographic data and phylogenies to test diversification rate hypotheses

Figure adapted from Economo et al. 2018 (fig. 2)

Economo EP, Narula N, Friedman NR, Weiser MD, Guénard B. 2018. Macroecology and macroevolution of the latitudinal diversity gradient in ants. Nat. Commun. 9:1–8. doi:10.1038/s41467-018-04218-4.

Combining fossil morphology with extant morphology collated from AntWeb

(data and plot from Amina Siraj, NJIT)



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A new automatic identification system of insect images at the order level

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Automated Taxonomic Identification of Insects with Expert-Level Accuracy Using Effective Feature Transfer from Convolutional Networks

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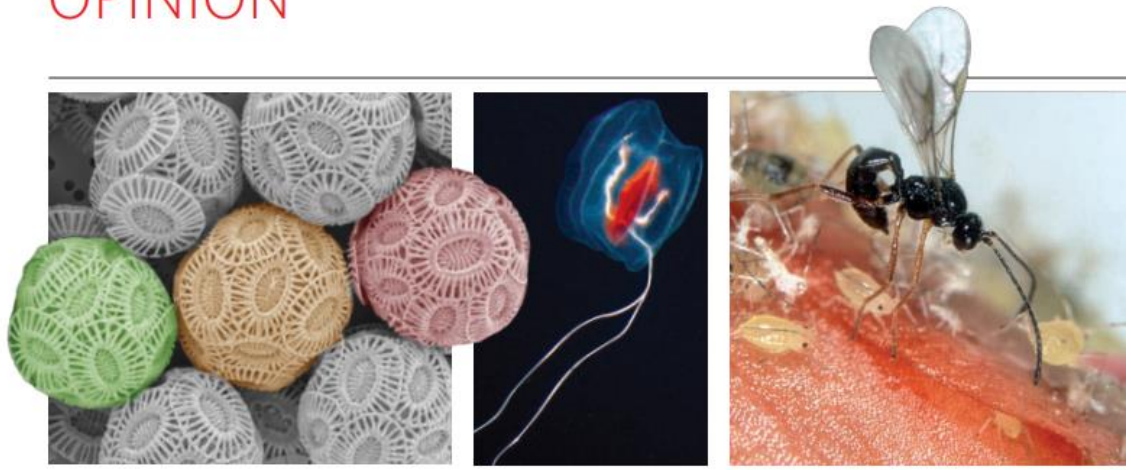
OPINION



Time to automate identification

Taxonomists should work with specialists in pattern recognition, machine learning and artificial intelligence, say **Norman MacLeod**, **Mark Benfield** and **Phil Culverhouse** — more accuracy and less drudgery will result.

PLOS ONE

RESEARCH ARTICLE

Ant genera identification using an ensemble of convolutional neural networks

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Dr. Barry Bolton

AntMaps

Dr. Evan Economo

Dr. Benoit Guenard

Matt Ziegler

Nitish Narula

Julia Janicki

…and countless myrmecologists who uploaded data to make AntWeb, AntCat, AntMaps, and AntWiki a success!