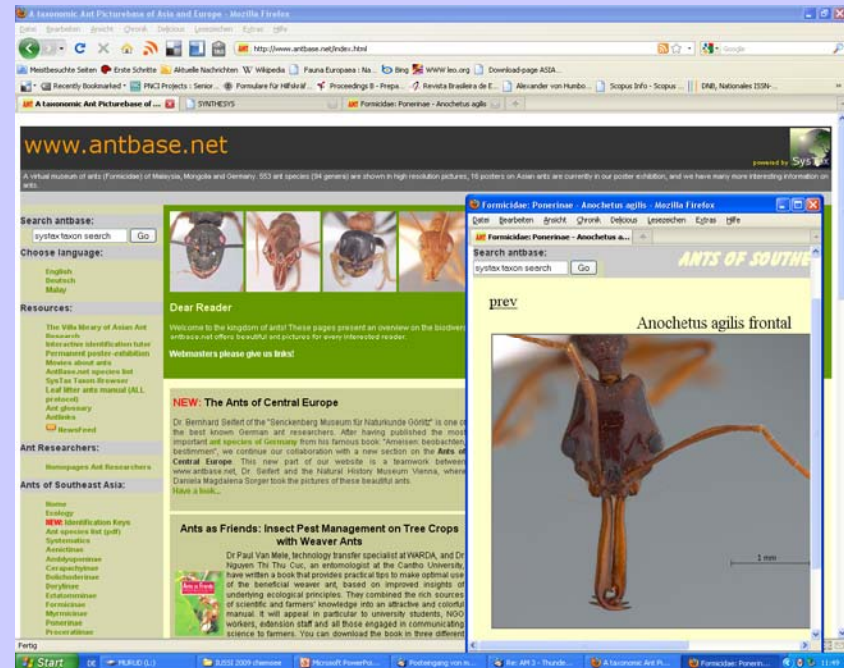


# www.antbase.net

## a myrmecological networking platform



Martin Pfeiffer & Hans Peter Katzmann  
Institute for Experimental Ecology

# Renaissance of Systematics....

## Monitoring biodiversity:

- A requirement ...
- Necessary to document change
- Needed to communicate in a competitive world ...

## CONVENTION ON BIOLOGICAL DIVERSITY 5 JUNE 1992

### *Article 7. Identification and Monitoring*

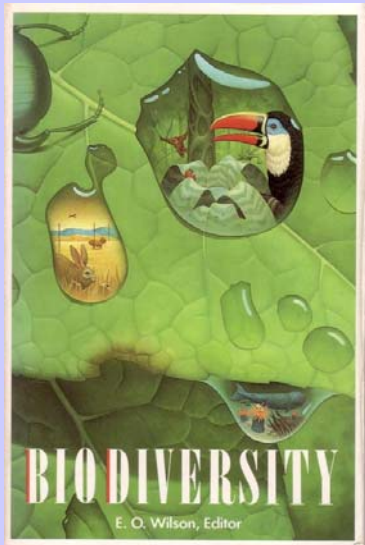
Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

- (a) **Identify components of biological diversity** important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I;
- (b) **Monitor**, through sampling and other techniques, **the components of biological diversity** identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;
- (c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and
- (d) **Maintain and organize**, by any mechanism **data**, derived from identification and monitoring activities pursuant to subparagraphs (a), (b) and (c) above.

# Renaissance of Systematics....

- Indeed, we do not know how many species there are on earth: 2M, 10M, 100M?
- Will the loss of species ever have an adequate impact on global environmental political decisions, similar to issues such as ozone or global warming, which have pretty convincing supportive data?
- If yes, we need quantitative, repetitive sampling
- If yes, we need extensive data bases

# Renaissance of Systematics....



Biodiversity (crisis)

Legal framework

Database/Network

Populated database?

1987

1992

2000

2010

**RIO /  
CBD**

**GBIF**

**Target 2010**

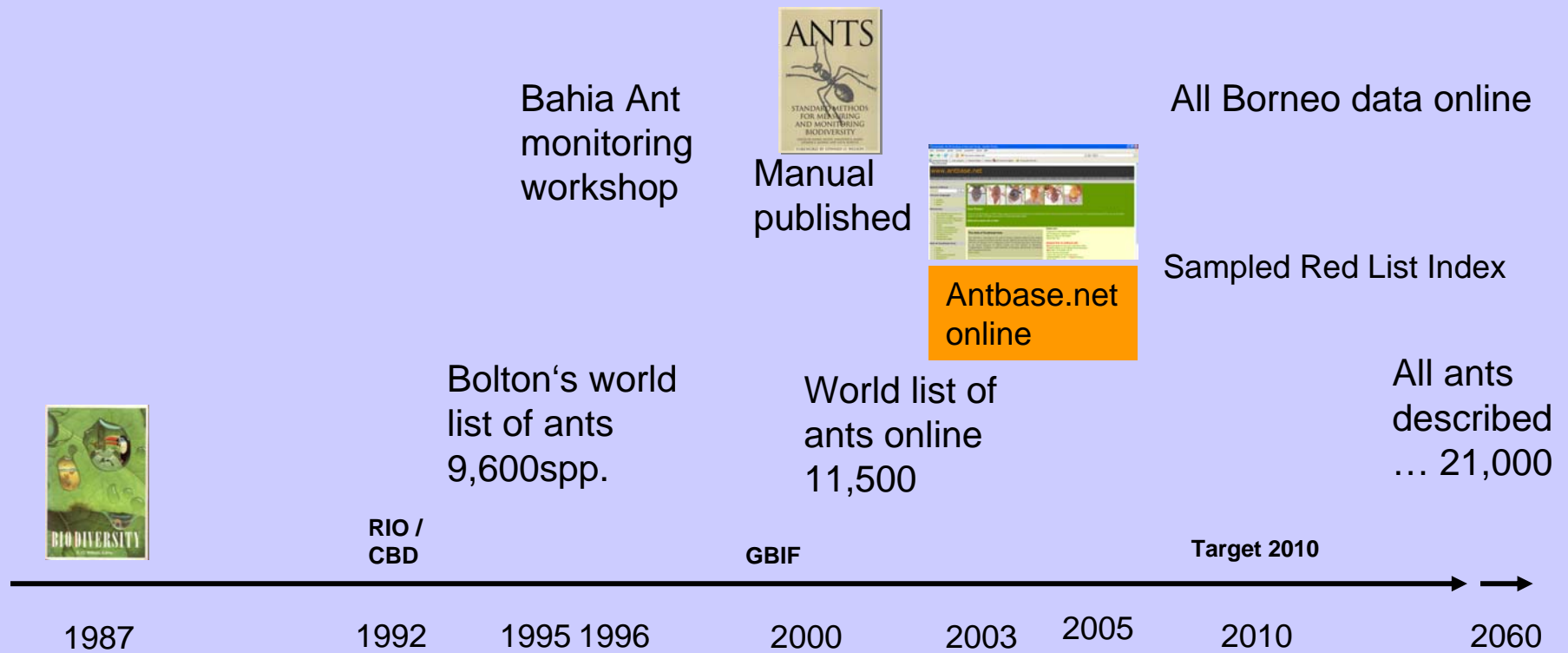
BDM-CH

Sampled Red List Index

Global Amphibian Assessment

The agony of getting a concrete figure on biological diversity

# Renaissance of Ant-Systematics....



Getting to know ants is a slow process,  
despite a global network of >200 scientists

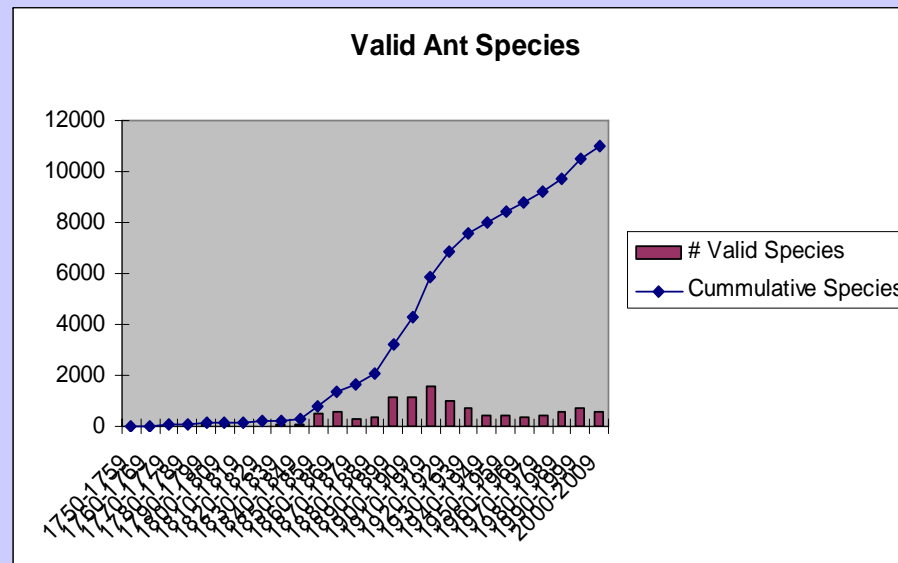
# Taxonomic ant research

until now **12.591 known ant species**

>1,700 new ant species discovered during the last 10 years

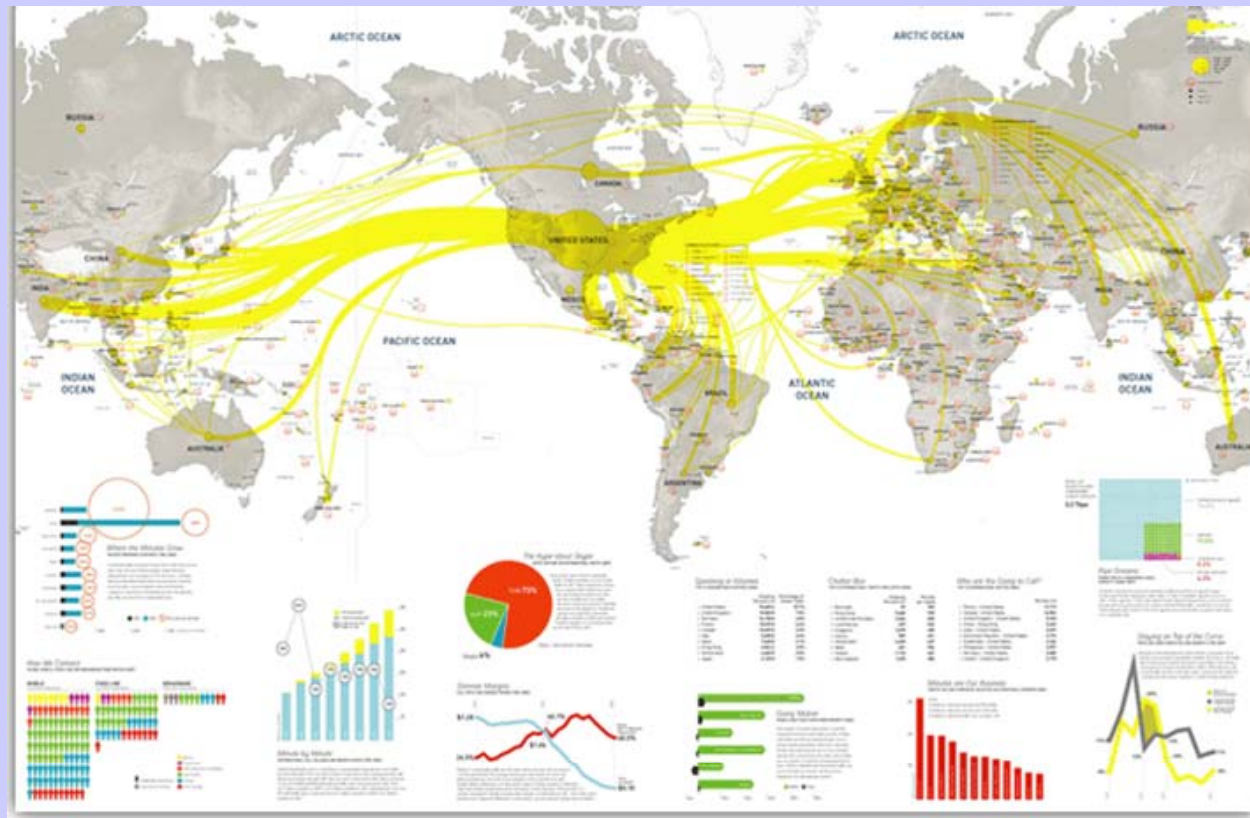
>90,000 pages published in ca 4,000 publications

Most data already available via Internet ([www.antbase.org](http://www.antbase.org))



# Increasing exchange of data

## Internet traffic 2008



[http://www.telegeography.com/products/map\\_traffic/index.php](http://www.telegeography.com/products/map_traffic/index.php)

# Web's most important projects on digital ant images

- [www.antweb.org](http://www.antweb.org) 9808 specimens, 4348 species  
(New World, Madagascar, Australia, Western Europe)  
California Academy of Science
- [www.discoverlife.org](http://www.discoverlife.org) ca. 2500 species  
(New world, few of Asia), Harvard University
- [www.anttypes.org](http://www.anttypes.org) 17,000 pics 1850 species  
(only type-specimens, World) FoCol,  
Staatliches Museum für Naturkunde Karlsruhe – still in preparation
- [www.antbase.net](http://www.antbase.net) 2000 pics, 553 species  
(South East Asia, Palearctis), University of Ulm
- [Ants of New Guinea](http://www.ants.newguinea.gov.au), >400 species  
(New Guinea), University of Budweiss
- <http://ant.edb.miyakyo-u.ac.jp> 280 species  
(Japan) Japanese Ant Imagebase Group

Sum: 9931 species



# Networking in Europe and Asia: www.antbase.net



Information on ants in Malaysia, Mongolia,  
Europe, Iran...

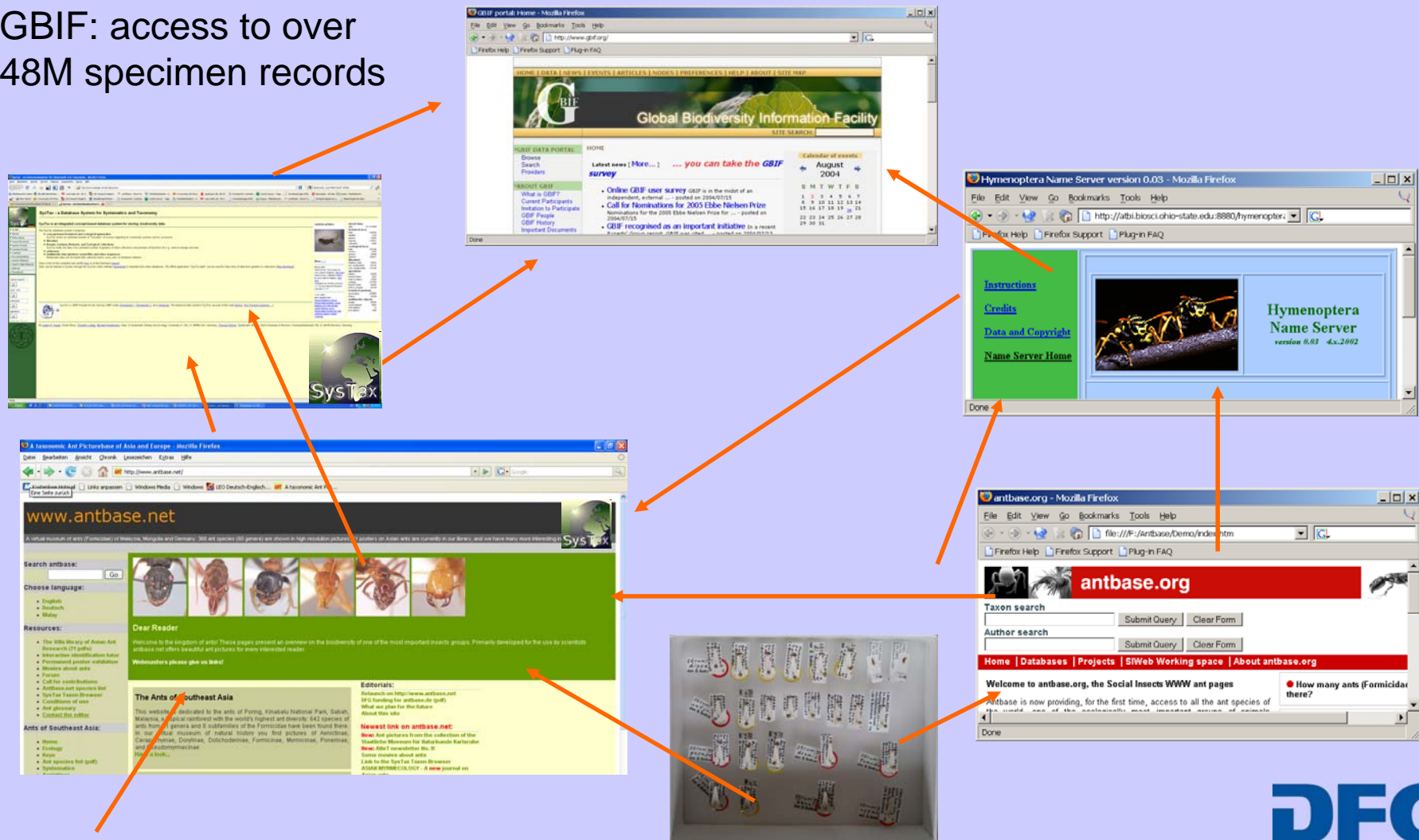
founded 2003 as a “grassroot” publication  
funded since June 2006 by

**DFG - Scientific Library Services and Information Systems**

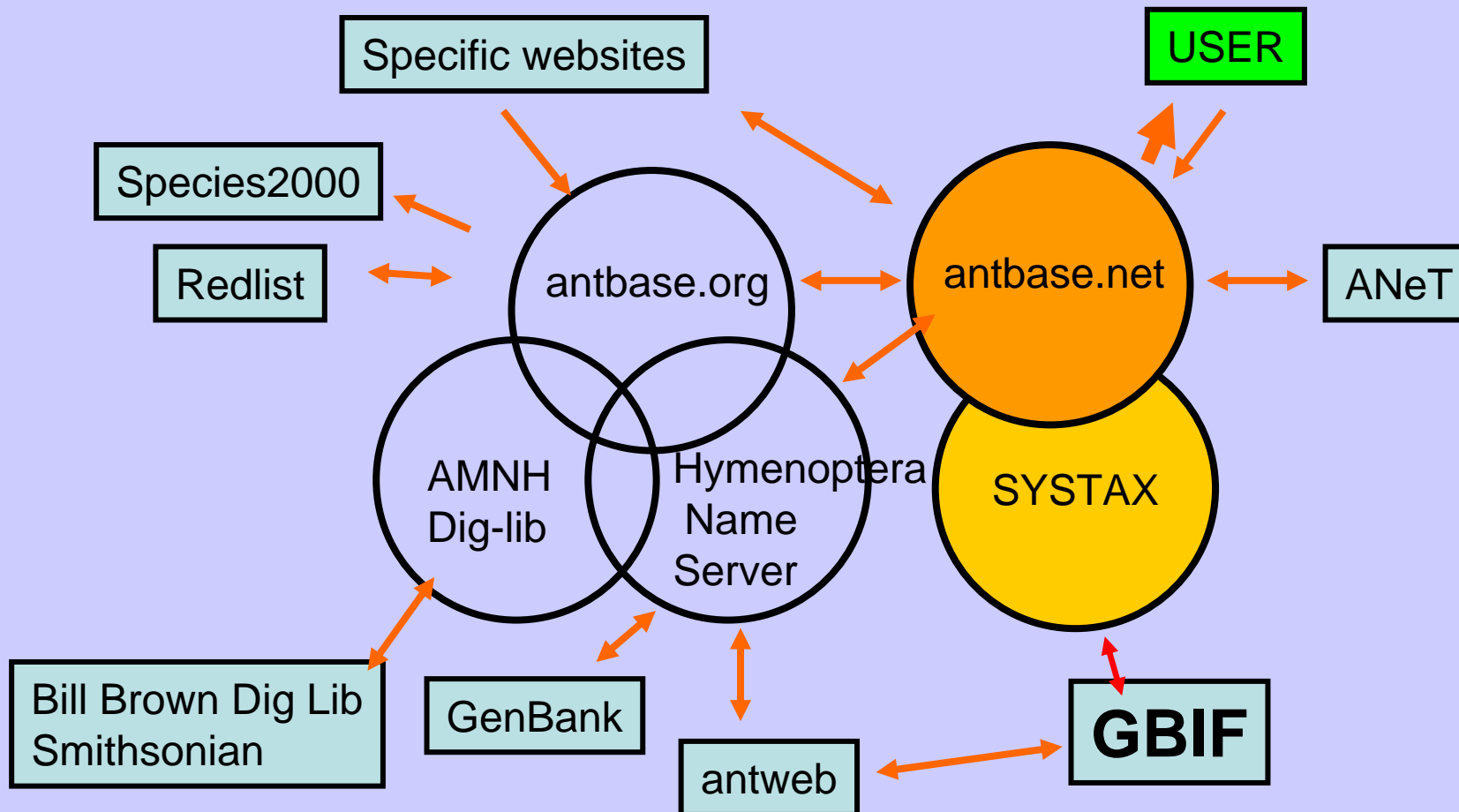
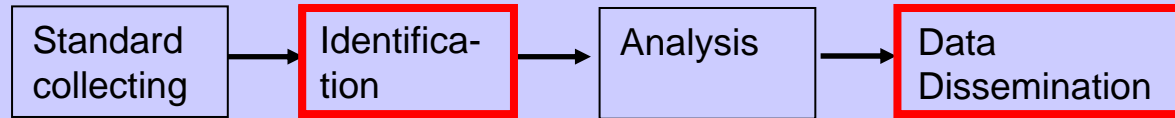
# Improving Access to Specimen Data

Ca. 2 – 3 Billion specimens in natural history collections

GBIF: access to over 48M specimen records



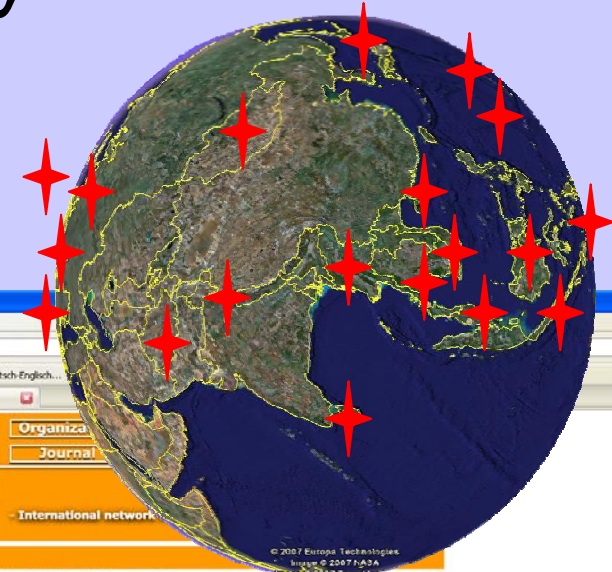
# Ant study related internet sources



# Basic aims of [www.antbase.net](http://www.antbase.net)

- to give open access to ant information
- to provide detailed taxonomical knowledge at remote places
- to supply digital ant images and taxonomic keys for easy identification of ants
- to enable inclusion of ants in rapid assessment programs
- to help educating para-taxonomists
- to share data digitally in a sustainable manner
- to prevent loss of those ant data that are usually not publishable (life history, photographs, videos etc.)
- to promote cooperative biodiversity research

# The ANeT community



**ANeT** - International network

**INVITATION TO ANeT**

ANeT is an international network for ant research (myrmecology) in Asia, and aspires to promote this field of science in Asia through research and development, the establishment of "a system of" comprehensive local ant collections, and the efficient communication and networking necessary for conservation of ants in particular and Asian biodiversity in general.

Members of ANeT can exchange "information and observations" on ants, and ant specimens for their reference collections. At the workshop and seminar held every other year, studies on many aspects of Asian ants are reported and research programmes are discussed on an international basis. After the workshop and seminar members can enjoy an excursion to collect and observe ants; the field trip may include practice of selected protocols for ant faunal assessment and identification of collected ants.

Over 70 people from more than ten countries have been enjoying cooperation through the activities promoted by this unique network. Anyone interested in Asian ants can join us right now.

[Journey to ANeT; Introduction of ANeT](#)

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**ASIAN MYRMECOLOGY** VOLUME 1

**ASIAN MYRMECOLOGY** VOLUME 2 2008

**ANeT Newsletter** No. 9 - October 2006

**CONTENTS**

- A call for contributions to ASIAN MYRMECOLOGY, the new scientific journal published by ANeT  
*Martin Pfeifer & John Pickens*
- Improved understanding of leaf cut invader species  
*John Pickens*
- A story of a man crazy about imaginary ant specimens  
*Katsumasa Ezaki*
- The transformation of a website on ants into a myrmecological networking platform  
[www.asianmyr.de](http://www.asianmyr.de) / [www.asiame.net](http://www.asiame.net)  
*Manfred Pfeifer*
- Ants on a Fossiliferous Island  
*Geddy Villanar*

International Network for the Study of Asian Ants

67 researchers from 20 countries

# A scientific collection as basis...



**www.antbase.net** comprises a large collection of Asian ants that were collected in numerous projects on Borneo and elsewhere

# ...for a virtual museum



# Cooperation with museums and ant researchers all over the world



Courtesy Seiki Yamane





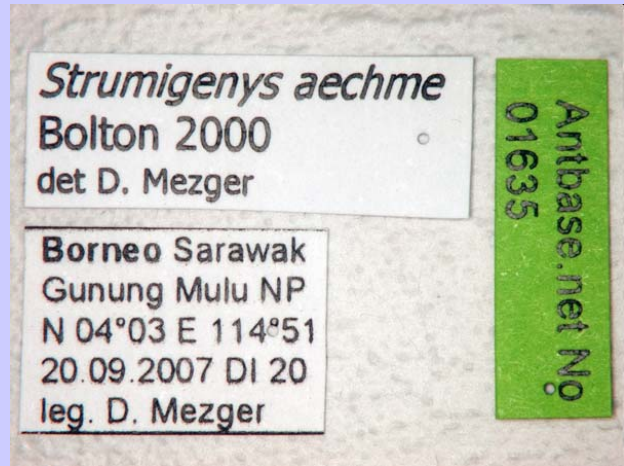
*Crematogaster aurita*

Courtesy Seiki Yamane



*Anochetus rugosus*

Courtesy Seiki Yamane



*Strumigenys aechme*

Courtesy Dirk Mezger



*Meranoplus mucronatus*

Courtesy ZSB UW





*Myrmoteras chondrogastrum*

Courtesy Dirk Mezger



*Centromyrmex feae* Emery, 1889

0,5 mm

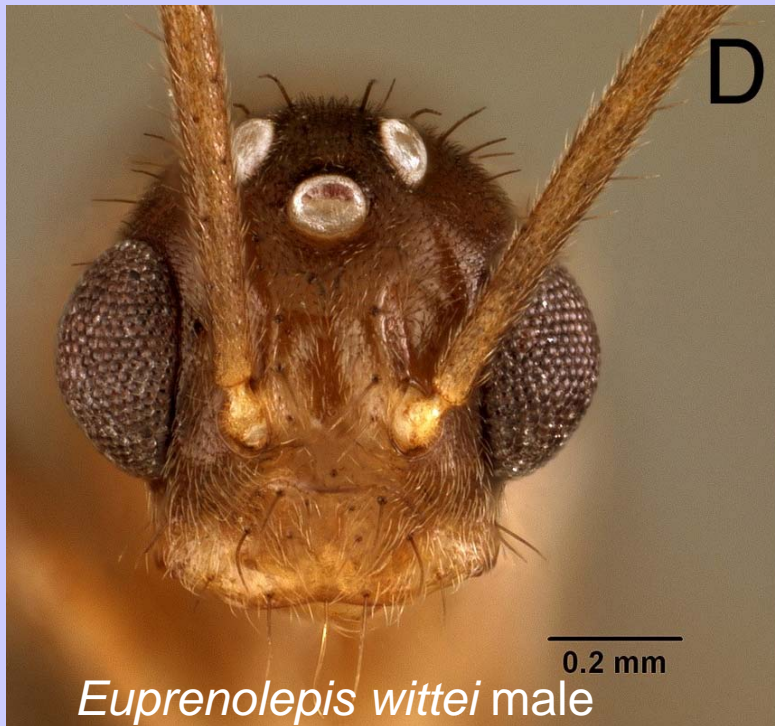
Courtesy Museum for Natural History Karlsruhe



*Echinopla melanarctos* Smith, 1857



Courtesy Museum for Natural History Munich



### Taxonomic Revision of the Southeast Asian Ant Genus *Euprenolepis*

JOHN S. LAPOLLA

Department of Biological Sciences, Towson University, 8000 York Road, Towson, Maryland 21252 USA. E-mail: jlapolla@towson.edu

#### Abstract

The taxonomy of *Euprenolepis* has been in a muddled state since it was recognized as a separate formicine ant genus. This study represents the first species-level taxonomic revision of the genus. Eight species are recognized of which six are described as new. The new species are *E. echinata*, *E. maschwitzi*, *E. thrix*, *E. variegata*, *E. wittei*, and *E. zeta*. *Euprenolepis antespectans* is synonymized with *E. procera*. Three species are excluded from the genus and transferred to *Paratrechina* as new combinations: *P. helleri*, *P. steeli*, and *P. stigmatica*. A morphologically based definition and diagnosis for the genus and an identification key to the worker caste are provided.

**Key words:** fungivory, Lasini, *Paratrechina*, *Prenolepis*, *Pseudolasius*

#### Introduction

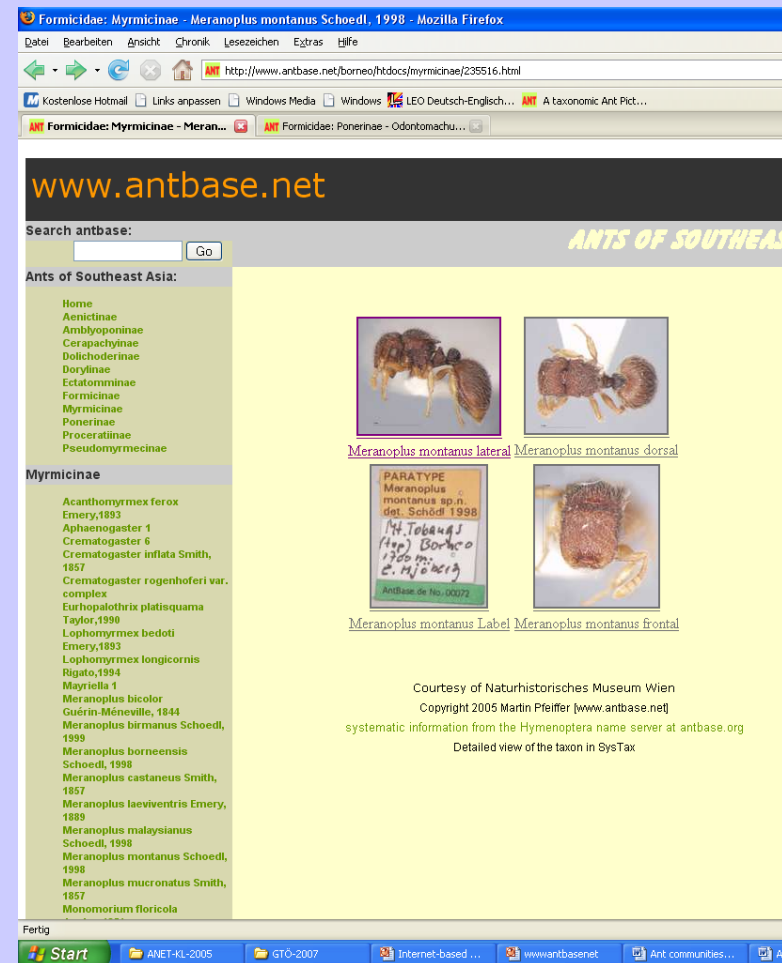
Until recently, virtually nothing was known about the biology of *Euprenolepis* ants. Then, in a groundbreaking study by Witte and Maschwitz (2008), it was shown that *E. procera* are nomadic mushroom-

Our aim: publication of species description  
and pictures at [www.antbase.net](http://www.antbase.net) at the same time



# A three layered picture base

- Thousands of pictures of currently 553 ant species from Palaearctis and Orientalis including also morphospecies
- Most pictures in „automontage quality“ (extended depth of focus)



Formicidae: Ponerinae - Odontomachus rixosus - Mozilla Firefox

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

http://www.antbase.net/sprache-englisch/ants-southeast-asia/new-january-2007/odontomachus-rixosus-lateral-normal.html

Kostenlose Hotmail Links anpassen Windows Media Windows LEO Deutsch-Englisch... A taxonomic Ant Pict...

Formicidae: Formicinae - Cladomyrma ... Formicidae: Ponerinae - Odonto... Formicidae: Formicinae - Cladomyrma ...

www.antbase.net

Search antbase:

*ANTS OF SOUTHEAST ASIA*

[prev](#)

[next](#)

### Odontomachus rixosus lateral



Courtesy of Staatliche Museum für Naturkunde Karlsruhe

Click on the picture to enlarge it!

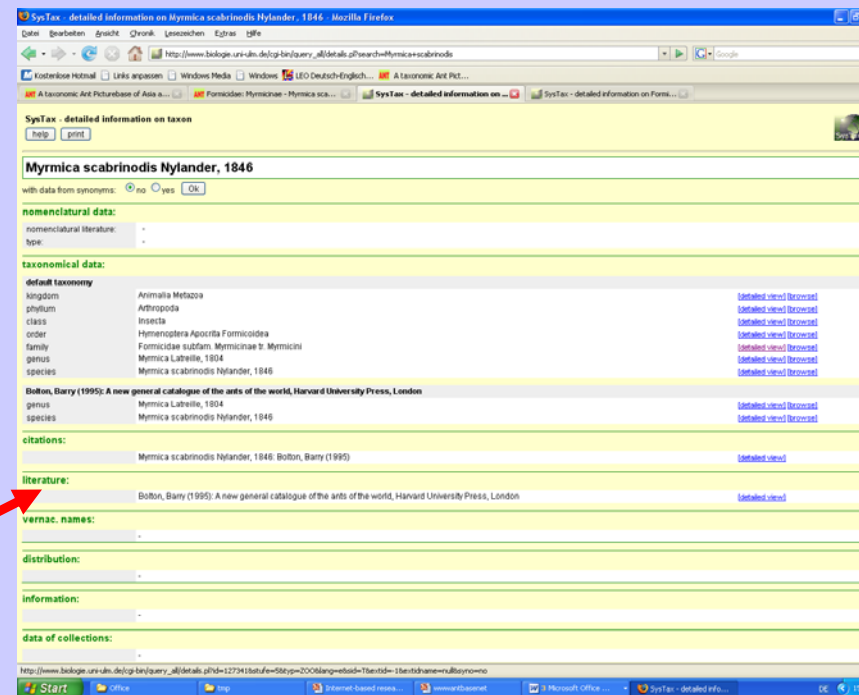
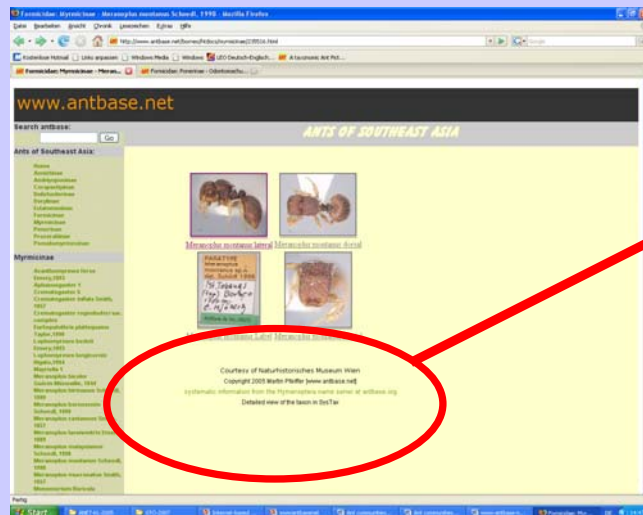
Copyright 2006 Martin Pfeiffer [www.antbase.net]

**Close this window** to return to your found set



# Systax- Information sheet

Provision of taxonomic details of the specimens  
All data are included in Systax and GBIF



# SysTax taxon browser

The screenshot shows a web browser window displaying the SysTax taxon browser interface. The page title is "A taxonomic Ant Picturebase of Asia and Europe - Mozilla Firefox". The URL is "http://www.biologie.uni-ulm.de/cgi-bin/system/zoosys.pl?tid=1328&stufe=5&typ=ZOO&sid=T&only=no&syno=no&lang=e&pr=...".

The main content area displays a hierarchical list of ant taxa. The search criteria are set to "all" (radio button selected), "specimens", "types", "images", "sounds", and "bot. garden". The "restrictions" section is set to "with data from synonyms" (radio button selected) and "only valid taxa" (radio button selected). The "ok" button is visible.

The taxon list is as follows:

- C: specimen, T: type, I: image, S: sound, B: bot. garden (s: synonym of taxon)
- Hymenoptera (Order)**
- Hymenoptera Apocrita (Suborder)
- Hymenoptera Apocrita Formicoidea (Superfamily)
- Formicidae Latreille, 1809 (Family)**
- Formicidae subfam. Aenictinae (Subfamily)
- Formicidae subfam. Aenictinae tr. Aenictini (Tribe)
- Aenictus Shuckard, 1840 (Genus)
- Formicidae subfam. Aenictogitoninae (Subfamily)
- Formicidae subfam. Agroecomyrmecinae (Subfamily)
- Formicidae subfam. Amblyoponinae (Subfamily)
- Formicidae subfam. Amblyoponinae tr. Amblyoponini (Tribe)
- Amblyopone Erichson, 1842 (Genus)
- Myopopone Roger, 1861 (Genus)
- Mystrium Roger, 1862 (Genus)
- Prionopelta Mayr, 1866 (Genus)
- Formicidae subfam. Aneuretinae (Subfamily)
- Formicidae subfam. Apomyrminae (Subfamily)
- Formicidae subfam. Cerapachyinae (Subfamily)
- Formicidae subfam. Cerapachyinae tr. Cerapachyini (Tribe)
- Cerapachys Smith, 1857 (Genus)
- Formicidae subfam. Dolichoderinae (Subfamily)
- Formicidae subfam. Dolichoderinae tr. Dolichoderini (Tribe)
- Dolichoderus Lund, 1831 (Genus)
- Lowenella Shattuck, 1992 (Genus)
- Phildis Shattuck, 1992 (Genus)
- Tapinoma Förster, 1850 (Genus)
- Technomyrmex Mayr, 1872 (Genus)
- Formicidae subfam. Dorylinae (Subfamily)
- Formicidae subfam. Dorylinae tr. Dorylini (Tribe)
- Dorylus Fabricius, 1793 (Genus)
- Formicidae subfam. Ectoninae (Subfamily)
- Formicidae subfam. Ectatomminae (Subfamily)

The interface includes a search bar, navigation links (Home, Resources, Ant Researchers, Ants of Southeast Asia, Ants of Mongolia), and a footer with the Windows taskbar showing the Start button and several open applications.

# Link to Bill Brown Memorial Digital Library

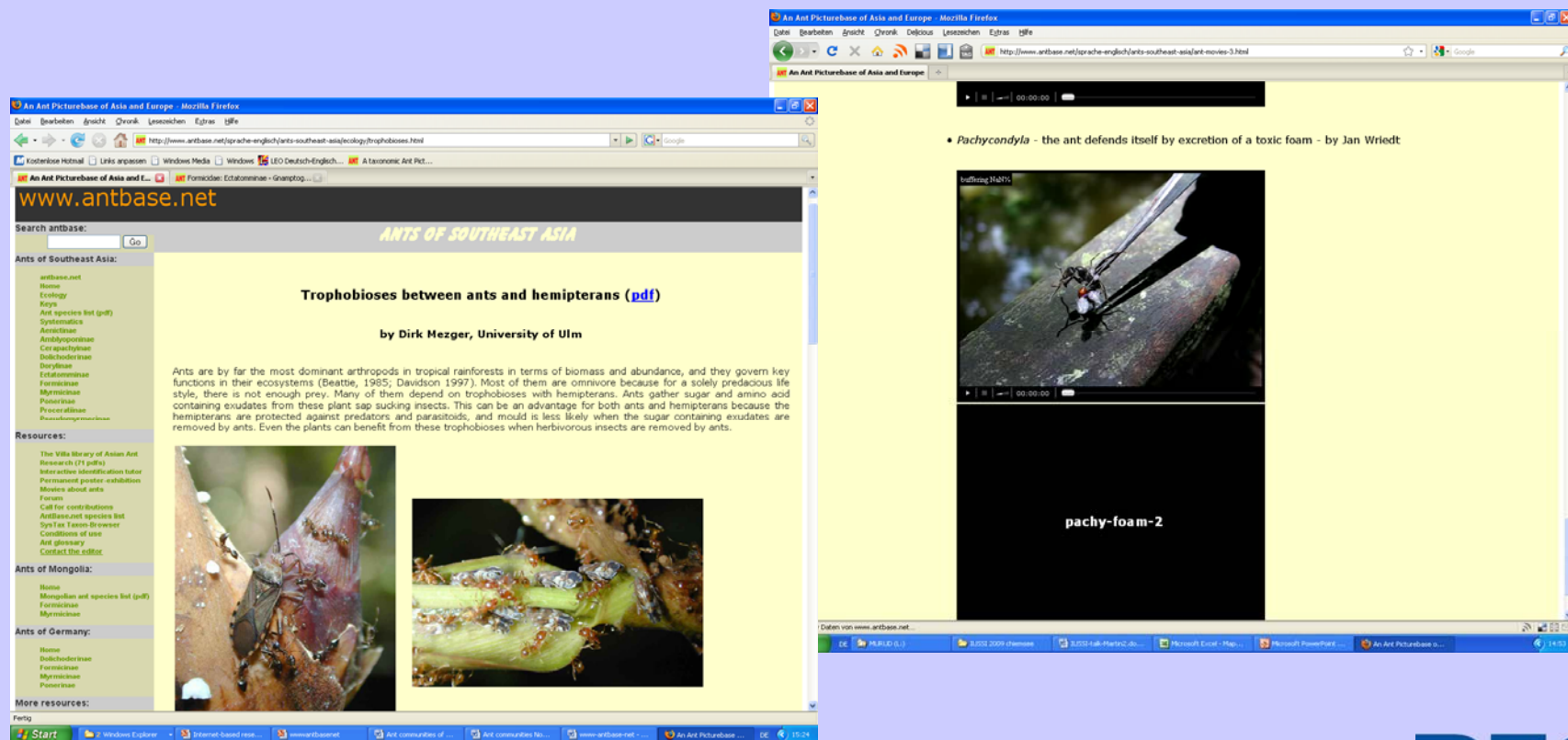
Collaboration with the  
American Museum of Natural History  
[www.antbase.org](http://www.antbase.org)

Free online access to > 80,000 printed pages  
in pdfs of > 4,000 taxonomic publications on ants  
linked to online catalogue

The image displays a composite of three screenshots illustrating the digital library's workflow. On the left, the [www.antbase.net](http://www.antbase.net) website is shown with a search for 'Hymenoptera Name Server' and a red circle highlighting the search results. A red arrow points from this circle to the middle screenshot, which is a screenshot of the 'Hymenoptera Name Server' application interface. This interface shows search results for the species *Camponotus lasius* Forel, including its classification, date of description (1891), and original description by Forel (1891). A second red arrow points from the 'Original description' link in the middle screenshot to the rightmost screenshot, which is a PDF document titled 'APPENDICE' from a scientific publication. The PDF contains detailed taxonomic descriptions in French, including measurements and morphological details of the ant species.

# Pages on the ecology of ant species

- Details of ant life histories
- Presentation of “unpublishable data” (pictures, videos) on ant behavior and life history



# Keys to the ant fauna of Malaysia

- Links to 48 electronic keys
- Glossary of ant morphology
- Illustrated keys to 5 subfamilies of ants in Borneo by Yoshiaki Hashimoto

The screenshot displays the website [www.antbase.net](http://www.antbase.net). The main heading is "ANTS OF SOUTHEAST ASIA" with a sub-heading "Identification Keys". Below this, there is a section for "Glossary of Ant Morphology" with a diagram of an ant's abdomen showing segments: CO (Clypeus), PT (Petiole), GA (Gaster), and AL (Alitrunk). The diagram is labeled with "No. 1" and "No. 2".

Other visible elements include a search bar, navigation tabs like "Home", "About", "Contact", and "Links", and a sidebar with "Resources" and "Ant Researchers".

This is an illustrated key for the subfamily Dolichoderinae. It features a drawing of an ant at the top left. The title is "Key to Bornean Genera of the Subfamily Dolichoderinae (No.1)".

The key is organized into several sections:

- 1. Major worker**
  - Lateral face of head in full-face view**: Shows two views of the head. The first is labeled "with a most with appressed very short hairs" and the second is "with relatively long decumbent to erect hairs".
  - Vertex in profile**: Shows two profiles of the vertex. The first is "without a compression impression" and the second is "with a compression impression".
  - Sculpture on dorsal face of vertexal lobe**: Shows two dorsal views of the vertexal lobe. The first is "smooth" and the second is "longitudinally rugose".
- Sculpture on frons**: Shows two views of the frons. The first is "longitudinally rugose" and the second is "reticulate, with enclosures".
- Sculpture on gaster**: Shows two views of the gaster. The first is "obliquely to trans-streby rugose" and the second is "reticulate or rugose-reticulate".



# News from ant research

The screenshot shows the antbase.net website with a news article titled "Newly discovered Subfamily Martialinae (Rabeling & Verhaagh 2008)". The article text includes: "A new species of blind, subterranean, predatory ant, *Martialis heureka*, was discovered in the Amazon by Christian Rabeling (The University of Tübingen, Austria) and Manfred Verhaagh (Statistisches Museum für Naturschutz (Statistisches Museum für Naturschutz) in the last tier of the Amazon rainforest near Manaus, Brazil). It belongs to the first new subfamily of living ants discovered since 1923, the Martialinae (Rabeling & Verhaagh 2008), and is a descendant of one of the first ant lineages to evolve over 130 million years ago." It also mentions DNA sequence data and a call for specimens. The article is accompanied by several photographs of the ants.

## Call For Specimens

*Cerapachyinae* and other dorylomyrphs: any of the life stages and castes needed – Marek Borowiec  
Researchers wanted for morphology and sequencing by James Trager  
Sampling nests of the *Tetramorium caespitum/impurum* species complex: a request from B. Schlick-Steiner and F. Steiner  
Fresh specimens of *Stenammina pingorum* (formerly *S. orientale*) needed for molecular work – Michael Branstetter  
Taxonomy of the genus *Dilobocondyla*: a call for specimens from Tom Fayle

## Newest links on antbase.net:

New section on the Ants of Central Europe!  
New *Crematogaster* pictures  
More pictures from the Seiki Yamane collection  
Pictures from John LaPollas Publication on *Euprenolepis* in Southeast Asia  
Pictures from the collection of Seiki Yamane and more pictures from the IHMW  
Eleven new *Strumigenys* species from Borneo



Ants of New Guinea - A marvelous site on the ants of Papua New Guinea. Don't miss it!

## Test our new Navigation

We are working on a rebuild of our navigation. Have a look at the alpha-version and tell us what you think about it!

## New events:

Second Announcement of the 7th International Conference on Ants (Indonesia)  
Halteres: a new peer reviewed journal in Entomology

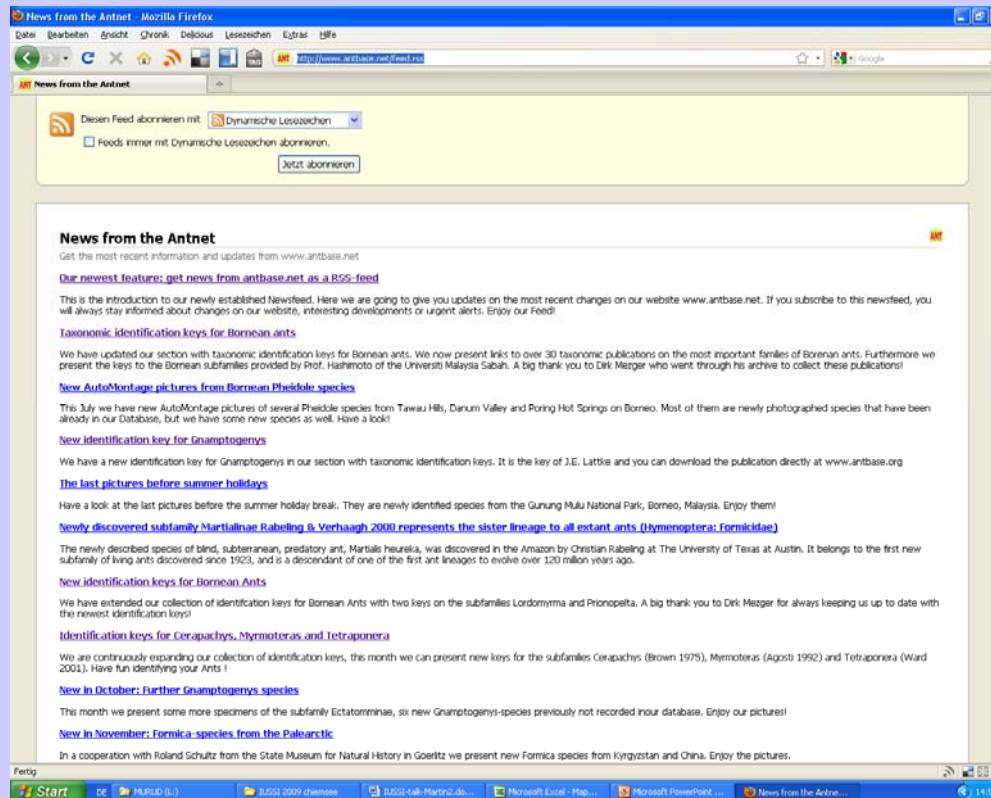


The new issue of Asian Myrmecology is available now!

First Announcement of the 7th International Conference on Ants (Indonesia)  
It is our pleasure to welcome our french namesake www.antbase.fr ! Have a look at this great page on the Ants of France!  
Homage to E. O. Wilson 50 years of contributions  
Systax Newsletter 11r.31: www.antbase.net (in German)

POSTER!

# Monthly updated information



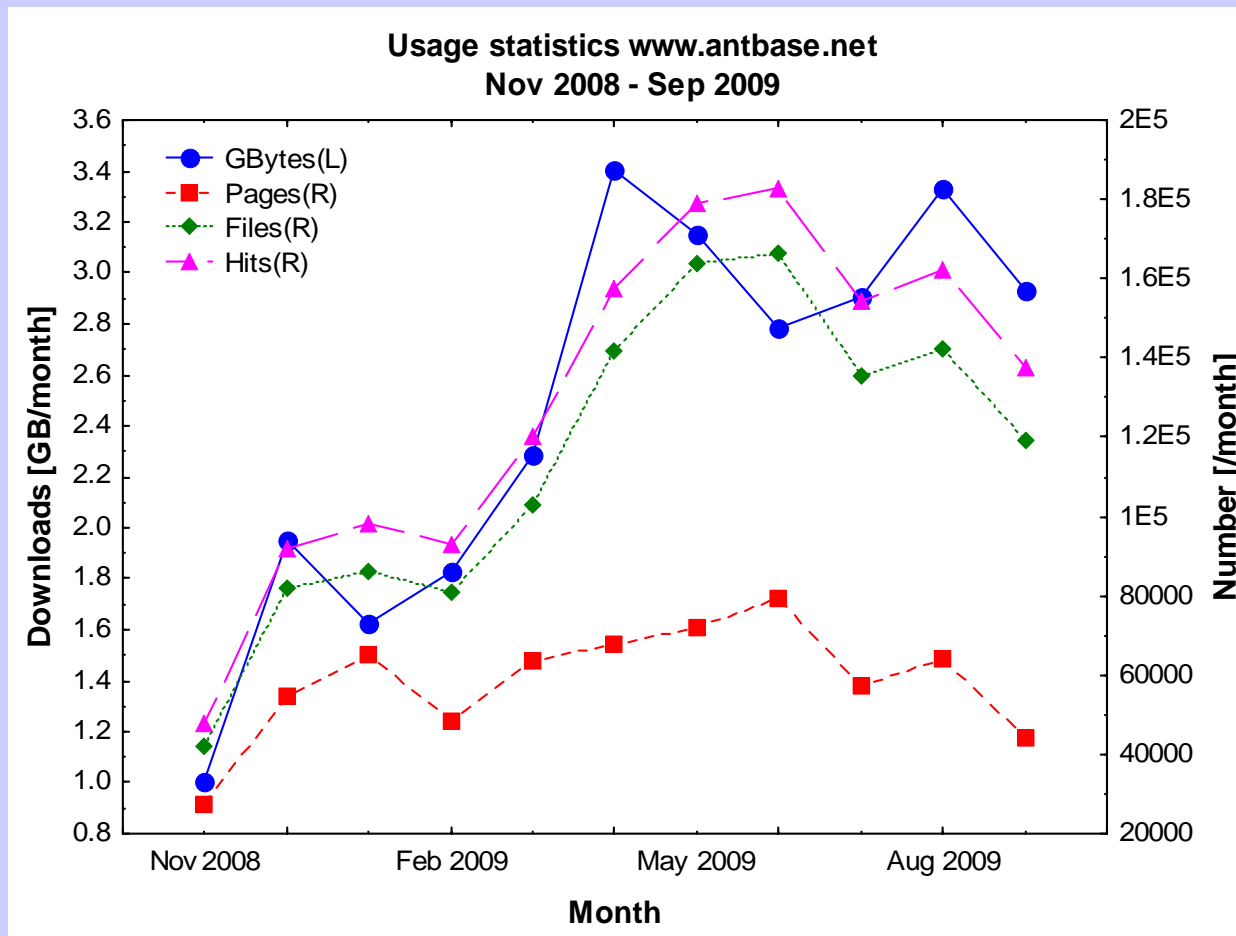
<http://www.antbase.net/feed.rss>

# Homepages for ant researchers

## Are you on board?



# A successful internet site



# Next step: Ant species comparison tools

Ants - Mozilla Firefox  
Datei Bearbeiten Ansicht Chronik Delicious Lesezeichen Extras Hilfe  
http://www.biologie.uni-ulm.de/cgi-bin/antbase/ant\_comp.pl?zooid=326401&objid=326401-107182&objid=326401-107179&objid=3 Google










www.antbase.net

Search antbase:  Go

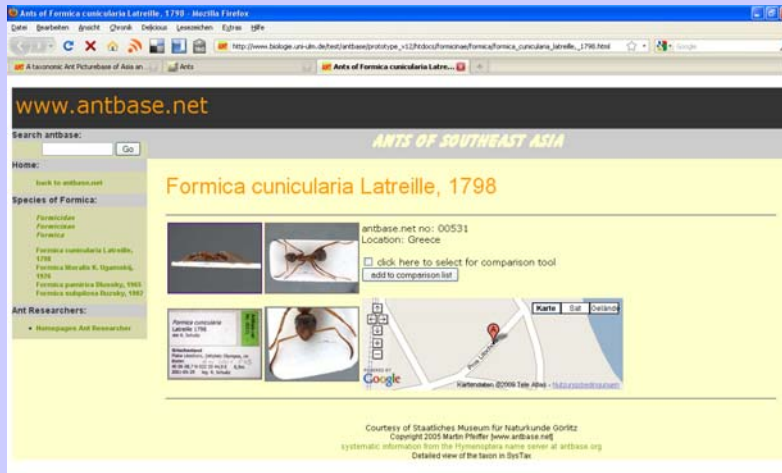
Home: [back to antbase.net](#)

**ANTS OF SOUTHEAST ASIA**

## Display tool

Myrmoteras bakeri Wheeler, 1919	 lateral	 dorsal	 frontal
Myrmoteras chondrogastrum Moffett, 1985	 lateral	 dorsal	 frontal
Myrmoteras donisthorpei Wheeler, 1916	 lateral	 dorsal	 frontal

# Next step: Presentation of ant distribution maps



Prototype of Google Maps display



Collection sites in Iran  
Paknia & Pfeiffer in prep.

- We want to build up an ant distribution database with data from Europe and Asia
- Please help us with your data



# Acknowledgements



**Yoshiaki Hashimoto  
Seiki Yamane, Katsuyuki Eguchi  
Barry Bolton**

**Jürgen Hoppe, Evelin Boos  
Bernhard Seifert, Roland Schultz  
Herbert Zettel, Magdalena Sorger  
Carsten Brühl, Andreas Floren  
Donat Agosti, Brian Fisher  
Dirk Mezger, Christiana Klingenberg  
Manfred Verhaagh**

**ANeT  
SYSTAX**

**Staatliches Museum für Naturkunde Karlsruhe  
Senckenberg Museum für Naturkunde Görlitz  
Naturhistorisches Museum Wien**

**[www.antbase.net](http://www.antbase.net) is funded by **DFG****

**Thank you – for listening!**





**Call for  
contributions  
[www.antbase.net](http://www.antbase.net)**

