



# ***FLY TIMES***

**ISSUE 40, April, 2008**

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Welcome to the latest issue of *Fly Times* – the first produced in 20 years by an editor other than Jeff Cumming and Art Borkent! We all have much to thank them for, and I will do my best to continue in the tradition of producing an informative and interesting newsletter. But of course, that is mainly up to you – the Dipterists out there – as this is your newsletter! This issue contains our regular reports on meetings and activities, updates on ongoing efforts, travel tips, new or improved methods, requests for taxa being studied, interesting observations about flies, opportunities for dipterists, as well as information on recent publications.

The electronic version of the *Fly Times* continues to be hosted on the North American Dipterists Society website at <http://www.nadsdiptera.org/News/FlyTimes/Flyhome.htm>. The Diptera community would greatly appreciate your independent contributions to this newsletter. For this issue, I want to thank all the contributors for sending me so many great articles! That said, we need even more reports on trips, collections, methods, updates, etc., with all the associated digital images you wish to provide. Feel free to share your opinions or provide ideas on how to improve the newsletter (as the “new guy,” I am very happy to hear ways that I can enhance the newsletter!).

The *Directory of North American Dipterists* is constantly being updated and is currently available at the above website. Please check your current entry and send all corrections to [Jeff Cumming](#). There is a form for this on the last page of the newsletter.

Issue No. 41 of the *Fly Times* will appear next October. If possible, please send your contributions by email, or disc, to the editor at [sgaimari@cdfa.ca.gov](mailto:sgaimari@cdfa.ca.gov). All contributions for the next *Fly Times* should be in by 10 October 2008.

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## Introductory Note from the Editor

by Steve Gaimari

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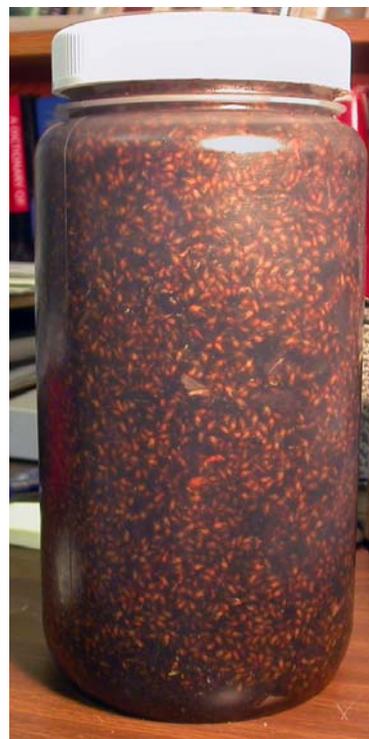
First, I want to heartily thank Art and Jeff for passing the torch to me in their “labor of love” in producing this fine newsletter. And to thank all the regular contributors over the years who have made it such a pleasure to read! I hope all of you will continue in your enthusiastic support of *Fly Times* – it is such a great means to keep all of us in the community of North American dipterists together! Second, to start my editorship off in a hopefully amusing way, I have written a short Pindaric ode to one of my very favorite flies! Yes, it is a small yellow lauxaniid... And not to worry, I’m not planning to quit my day job...

### An Ode to *Minettia flaveola*

Ode to you my friend, yellow by design  
Your name, *Minettia flaveola*  
You surely know sh\*t from shinola  
Because shinola is for thee  
Decomposing leaves from the tree  
Or decaying cones from the fir or pine

And of *Minettia univittata*?  
Is he a completely separate fly?  
Does his lone stripe our logic defy?  
A gray vitta caused confusion  
All this time was just delusion  
Your genitalia share the same schemata

In mountains and deserts throughout the west  
All my Malaise traps you seem to congest  
Had Garnett used the wisdom of Minerva  
Different would be California’s insignia  
The honor of the famed seal that he bestows  
Eureka! It would be thee, not *Ursus artos*.



(top photo by Alex Wild, <http://myrmecos.net>; bottom photo of Malaise trap head (scale: 10 inches high!) thick with *Minettia flaveola*, collected by Peter Kerr, Annadel State Park)

## NEWS

### New Information on the Family Diastatidae

by Joe B. Keiper

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I am pleased to announce that Dr. Ben Foote and I have successfully reared a member of the family Diastatidae from egg to adult. As far as we know, the immature stages have been entirely unknown outside of some fractional information and “possible” larval descriptions.

Melander (1913) gave the first synopsis of the family, and Hennig (1952, 1965) gave brief descriptions of maggots that were possibly diastatids (never confirmed). Ferrar (1987) and Stone et al. (1969) give synopses of the known information on the immature stages and adult distributions, respectively. Basically, our biological understanding of this group is lacking until now.

We reared eggs from a gravid female of *Diastata repleta* (Walker) on rodent feces (Fig. 1). The female was collected in a bog near Acadia National Park in Maine, and the feces were kindly donated by an orphaned groundhog pup from a rehab facility. Our observations showed that goose, cow, and human feces were not appropriate rearing media. Maggots developed well on the groundhog feces, and we obtained eggs, first, second, and third instars, and puparia. In an attempt to plan ahead, I collected some maggots directly in 100% ethanol. If anyone is interested in Diastatidae and requires material for genetic sequencing, I am happy to part with those specimens.

Presently, we are describing all of the immature stages, and writing up our observations of the growth and behavior of all life stages (Fig. 2). We hope to submit a manuscript in the next couple of months.



Figures. Fig. 1 (left) – Adult *D. repleta* female on groundhog feces in a breeding jar.

Fig. 2 (right) – SEM of the facial mask of *D. repleta* third instar at 380x.

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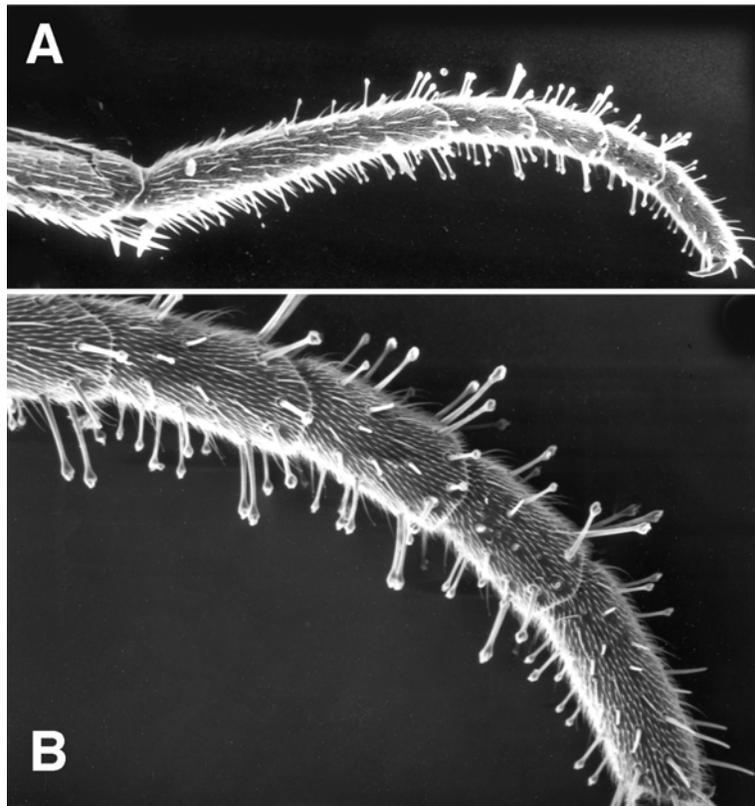
## Modified tarsal setae for pollen gathering in Bombyliidae

by Neal Evenhuis

Department of Natural Sciences, Bishop Museum, 1525 Bernice Street,  
Honolulu, HI 96817, USA; [neale@bishopmuseum.org](mailto:neale@bishopmuseum.org)

I am writing an article with Jack Neff geared to a general audience on the unique fore tarsal setae modifications found in many genera of Bombyliidae that are used to gather pollen while feeding. I am looking for good close-up photography of pollen adhering to the fore tarsi in any bombyliid species for use in the article.

This modification was discussed and illustrated in the paper by Neff, Simpson, Evenhuis & Dieringer (2003. Character analysis of adaptations for tarsal pollen collection in the Bombyliidae (Insecta: Diptera): the benefits of putting your foot in your mouth. *Zootaxa* 157: 1-14). Many female bombyliids visit flowers and manipulate anthers with their fore tarsi to gather pollen, which they consume for nourishment of developing ova. The fore tarsi of these females have setae that are modified in various ways, with most having erect capitate setae (see figure) that allow pollen to adhere while manipulating the anthers. After feeding, the bee fly then scrapes the pollen into the labellum of the proboscis (which has been thought by some photographers to be a cleaning action rather than feeding). To my knowledge, these are the only flies that have evolved specialized morphological structures for pollen gathering. Any help with photographs is most appreciated and will be appropriately credited.



*Neodiplocampta paradoxa* (Jaenicke). A. foretarsus. B. detail of capitate setae.

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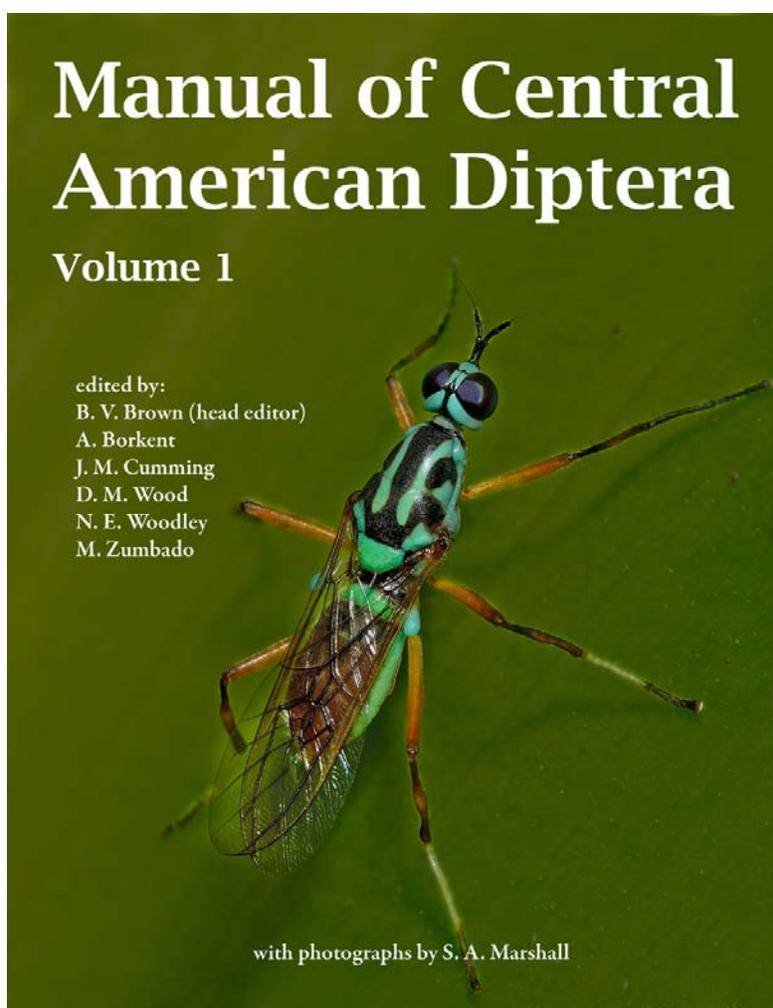
## Manual of Central American Diptera

by Art Borkent<sup>1</sup> & Jeff Cumming<sup>2</sup>

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<sup>2</sup> Agriculture and Agri-Food Canada, K.W. Neatby Building, C.E.F.,  
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Volume 1 of the Manual has been submitted to the National Research Council of Canada and the editors are just starting to receive galleys, which will be sent shortly to all contributing authors. It is expected that Volume 1 will be published this year, probably in the fall, and will be about 800 pages. As many of you know, putting together a large comprehensive work takes a great deal of time and effort. A surprising number of details need to be seen to - one of these is providing the book cover, which is reproduced here. Rather handsome we think!



Volume 2 should be submitted this summer and will hopefully be published in 2009. All 62 chapters are completed and are being edited and corrected, and the majority of figures are also completed.

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## Diptera Web Site

by F. Christian Thompson

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The Diptera web site, after a dozen years, is now being retired. First placed online in April 1996, the Diptera web was ahead of all the rest, illustrating the power of the internet and world-wide web to disseminate biosystematic information. The site had taxon (family, genus and species) pages, digitized literature, species and specimen inventories, along with the usual directories of workers, listing of events and links to other resources. Later, the BioSystematic Database of World Diptera was added in the Summer of 2000. Unfortunately, resources are no longer available to keep the site maintained and up to date. The earlier versions of the web site were archived to the Diptera Data Dissemination Disk (volumes 1 & 2; copies of volume 1 are still available, just ask).

The functions of the Diptera Web site will be filled by others now. The general aspects will be covered by the Diptera scratch pad (see elsewhere in this newsletter). Information about the USNM collection and the Diptera Research program in Washington will be found at the Smithsonian Department of Entomology site (<http://entomology.si.edu/>). The URL <http://www.diptera.org> will now be restricted just to the BioSystematic Database of World Diptera (see elsewhere in this newsletter).

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## The *\*new\** Diptera Site

by Irina Brake<sup>1</sup>, Gail Kampmeier<sup>2</sup> & F. Christian Thompson<sup>3</sup>

<sup>1</sup> European Distributed Institute of Taxonomy (EDIT), Department of Entomology, Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom; [i.brake@nhm.ac.uk](mailto:i.brake@nhm.ac.uk)

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<sup>3</sup> Systematic Entomology Lab., USDA, c/o Smithsonian Institution, MRC-0169 NHB,  
PO Box 37012, Washington, DC, 20013-7012 USA; [Chris.Thompson@ars.usda.gov](mailto:Chris.Thompson@ars.usda.gov)

*The \*new\* Diptera Site* (<http://www.diptera.myspecies.info>) has its origins in the general Diptera pages of the *The Diptera Site* (<http://www.diptera.org>) by F. Christian Thompson, but this new site is positioned to encourage contributions from registered users.

You are welcome to start a 'group' on your favorite taxon (see for example [Carnidae](#)), start a forum discussion on the [family classification](#), add images (see for example some of Steve Marshall's great photos in the [Diptera image gallery](#)), add or download bibliographic citations, or make comments to the various pages, etc. Groups can be not just taxon-based, but also created to collaborate with colleagues on a project, such as the [FLYTREE](#) project. You can also share files, images, and pages just within your group, with nobody else seeing these data until you are ready.

This website is open to everyone around the world interested in flies, whether professionals or amateurs. Please help us maintain a high standard of content. The focus of *The \*new\* Diptera Site* lies primarily but not exclusively on taxonomy, phylogeny, and nomenclature of Diptera. There are other

Diptera sites dealing with [specific groups](#) and an active community site [Diptera.info](http://www.diptera.info). The BioSystematic Database of World Diptera is still available at <http://www.diptera.org>.

The Diptera are highlighted as one of two [insect exemplar groups](#) using EDIT's (European Distributed Institute of Taxonomy) Scratchpads (<http://www.editwebrevisions.info/scratchpads>). Currently there are 7 Scratchpads dealing with Diptera, see for example <http://www.milichiidae.info>, <http://www.sciaroidea.info>, <http://mosquito-taxonomic-inventory.info> and <http://blackflies.info>.

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### The BioSystematic Database of World Diptera

by the Editorial Board:

<sup>1</sup>Neal L. Evenhuis, <sup>2</sup>Thomas Pape, <sup>3</sup>Adrian C. Pont, <sup>4</sup>F. Christian Thompson

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<sup>2</sup> Zoological Museum, Natural History Museum of Denmark, Universitetsparken 15,  
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<sup>3</sup> Oxford University Museum of Natural History, Oxford OX1 3PW, United Kingdom

<sup>4</sup> Systematic Entomology Lab., USDA, c/o Smithsonian Institution, MRC-0169 NHB,  
PO Box 37012, Washington, DC, 20013-7012 USA; [Chris.Thompson@ars.usda.gov](mailto:Chris.Thompson@ars.usda.gov)

The BioSystematic Database of World Diptera remains alive, but continues to struggle under the massive burden of too many fly names and too little support. Version 10.5 was put online in May. This database is the largest and most comprehensive set of names now available anywhere online for a group of organisms. The current version contains 156,668 valid species (152,956 extant, the remainder are fossils) represented by 193,974 name records (32% linked to their original bibliographic source; 15% have been reviewed by taxonomic and nomenclatural specialists). There are 11,672 valid genera and 22,887 genus-group names (46% linked, 27% reviewed for nomenclature and 11% reviewed for taxonomy) and there are 4,645 family-group names, none of which have been reviewed since Sabrosky (1999). The bibliographic file now includes 25,937 references.

Yes, this report reads much like the last one in *Fly Times*. That is now the nature of the BDWD, a few more names are added but some deleted as duplicates are discovered, more names are reviewed by specialists, but due to lack of support we remain far from our ultimate goal, a comprehensive set of names used for flies that are verified (peer-reviewed) by specialists and available to all. The status of the *Myia* series remains as last reported.

The Editorial Board met recently in Washington for a week to plan for the future of the project (yes, it was a lot of work, but there was some time for fun – see photos on the next page). We will continue with what we have, but have decided to abandon some aspects of the project to focus our limited resources on the most critical and essential ones. Hence, as noted elsewhere, we have retired the Diptera Web site and its World Directory of Dipterists. We will focus on the migration of the project software from its existing FileMakerPro version 6 to the current version 9. In the process, we will enhance our accessibility so as to allow more specialists greater online accessibility to the master data files. We will add a species interface as previously noted (last *Fly Times* report). Priority for data verification will focus on genus-group names, the critical component of all scientific names as they link

the species name to the classification hierarchy. Our first manuscript on the problems of the post-1930 genus-group names that do not meet International Code of Zoological Nomenclature requirements has been completed and soon we will be sending out an appeal to selected specialists to review names (so watch your mail box!). We believe at our current level of support we should be able to finish the genus-group names over the next 18 months or so. The final product will be a series of volumes similar in format to the treatment of the family-group names done by Sabrosky (1999, *Myia* 10).



A gathering of dipterists at Chris and Betty Thompson's home.

Given additional support we remain ready to address other high priorities, such as revised regional (Nearctic, for example) datasets or family treatments (mosquitoes, black flies). Naturally, we will remain flexible, so depending on funding and the willingness of specialists to help, other approaches or data sets will be considered. SO, as always, if you have money or want to contribute your expertise, please get in contact with us.

Finally, we will also continue to work with other community activities. Most important of these are the Diptera Scratch pads being developed by the EDIT program supported by the EU nations and based at the Natural History Museum, London, and the new Encyclopedia of Life supported by a consortium of leading museums and herbaria. For both of these, we will provide basic nomenclatural and taxonomic information for Diptera and help build species and higher taxon pages. Already our BDWD names have been incorporated into the Catalogue of Life Annual Checklist of ITIS and Species2000 and form the authority file for the Encyclopedia of Life. So the BDWD team thanks all of our colleagues for their assistance over the years, which has made our community the leader among its peers in providing biosystematic information to the world.

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## Fourth International Meeting on Taxonomy and Natural History of Tephritoidea

by Allen Norrbom<sup>1</sup>, Gary Steck<sup>2</sup> & Bruce Sutton<sup>2</sup>

<sup>1</sup> Systematic Entomology Lab., USDA, c/o Smithsonian Institution, MRC-0169 NHB,  
PO Box 37012, Washington, DC, 20013-7012 USA; [allen.norrbom@ars.usda.gov](mailto:allen.norrbom@ars.usda.gov)

<sup>2</sup> Division of Plant Industry, Florida Department of Agriculture, PO Box 147100,  
Gainesville, FL 32614-7100, USA; [steckg@doacs.state.fl.us](mailto:steckg@doacs.state.fl.us) & [suttonb@doacs.state.fl.us](mailto:suttonb@doacs.state.fl.us)

WHERE: Glenstone Lodge – <http://www.glenstonelodge.com>, Gatlinburg, TN

WHEN: Monday, June 9 to Saturday, June 14, 2008

The Fourth International Meeting on Taxonomy and Natural History of Tephritoidea will be held June 9-14, 2008 at Great Smoky Mountains National Park. The three previous meetings of this group (Xalapa, Mexico (1998); Tel Aviv, Israel (2000); and Geneva, Switzerland (2004)) have been extremely productive and enjoyable. Attendance has ranged from 20-30 participants and included most of the world's top experts on the systematics and natural history of fruit flies and their relatives.



The Park (<http://www.nps.gov/grsm/>) includes some of the highest peaks east of the Mississippi River and ranges in elevation from 250-2000 m. The Smoky Mts. region is the most biologically diverse area in the eastern United States for many groups of organisms, including Tephritoidea. The meeting sessions (including presentations) will be held at the Park's new Science Center, at Twin Creeks, approximately 2 miles from the hotel in Gatlinburg. The building houses the GSMNP museum, which includes an active insect collection that you will be welcome to study. In addition to the meeting presentations, we will also participate in the "All Taxon Biodiversity Inventory" (ATBI) that is being conducted in the Park (see <http://www.dlia.org/> and <http://www.fcla.edu/FlaEnt/fe84p556.pdf>). We will make multiple trips into the National Park to observe and collect insects in a variety of habitats and elevations. Collectors must agree to provide full data (identification to the extent possible, number of specimens, locality data and coordinates) and some voucher specimens to the GSMNP (via meeting organizers) within 6 months (Dec. 2008), as the organizers will submit a report and synoptic collection at that time. Dipterists interested in other families are welcome to join us, particularly for the collecting part of the meeting. For accommodations we have arranged a group rate at the Glenstone Lodge (<http://www.glenstonelodge.com>), 800-362-9522, 865-436-9361, \$70 (\$78.75 including tax) for a room with 2 beds (or a single king bed). The closest airport is McGhee-Tyson (TYS), south of Knoxville, TN, approximately 1.5 hours from Gatlinburg by car. It would be most helpful for our final planning to have an accurate head count, so if you have not yet let us know for sure whether you are coming, please do so as soon as possible.

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## 6<sup>th</sup> Annual Meeting of the North American Forensic Entomology Association (NAFEA)

by Diana Johnson, NAFEA Secretary & 2008 Local Arrangements Chair

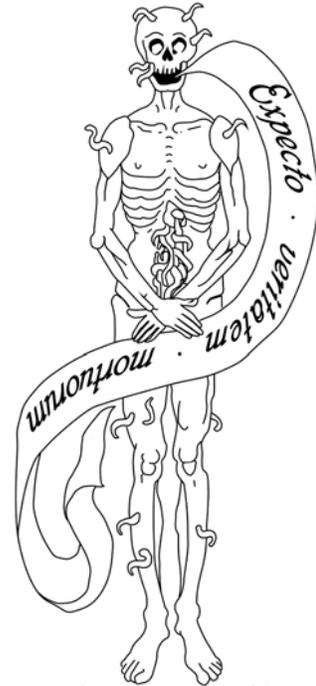
(send registration materials to) North American Forensic Entomology Association,  
P.O. Box 9304, Trenton, NJ 08650, USA; [nafea.secretary@gmail.com](mailto:nafea.secretary@gmail.com)

WHERE: Caesars Atlantic City – [www.caesarsatlanticcity.com](http://www.caesarsatlanticcity.com),  
Atlantic City, New Jersey

WHEN: Sunday, June 8 to Tuesday, June 10, 2008

The North American Forensic Entomology Association (NAFEA – <http://www.nafea.net>) will hold its 6<sup>th</sup> Annual Meeting in Atlantic City, New Jersey from June 8-10, 2008. The keynote address will be given by Dr. Richard Saferstein, the retired Chief Forensic Scientist of the New Jersey State Police Laboratory who currently serves as a consultant for attorneys and the media in the area of forensic science. There will also be three scientific sessions of posters and oral presentations, followed by a workshop on Tuesday afternoon covering a variety of topics to provide a basis for discussion and involvement by qualified Forensic Scientists in criminal investigations.

For more information and for registration materials, please visit <http://www.nafea.net/Page%20Links/NAFEA%20News%20and%20Events.html>. Note the following important deadlines: April 11 for early registration and abstract submission; May 9 for hotel reservations.



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## 7<sup>th</sup> International Congress of Dipterology (ICD7)

by Manuel A. Zumbado, Chairman, Organizing Committee

Unidad de Artrópodos, Instituto Nacional de Biodiversidad (INBio),  
A.P. 22-3100 Santo Domingo, Heredia, COSTA RICA; [mzumbado@inbio.ac.cr](mailto:mzumbado@inbio.ac.cr)

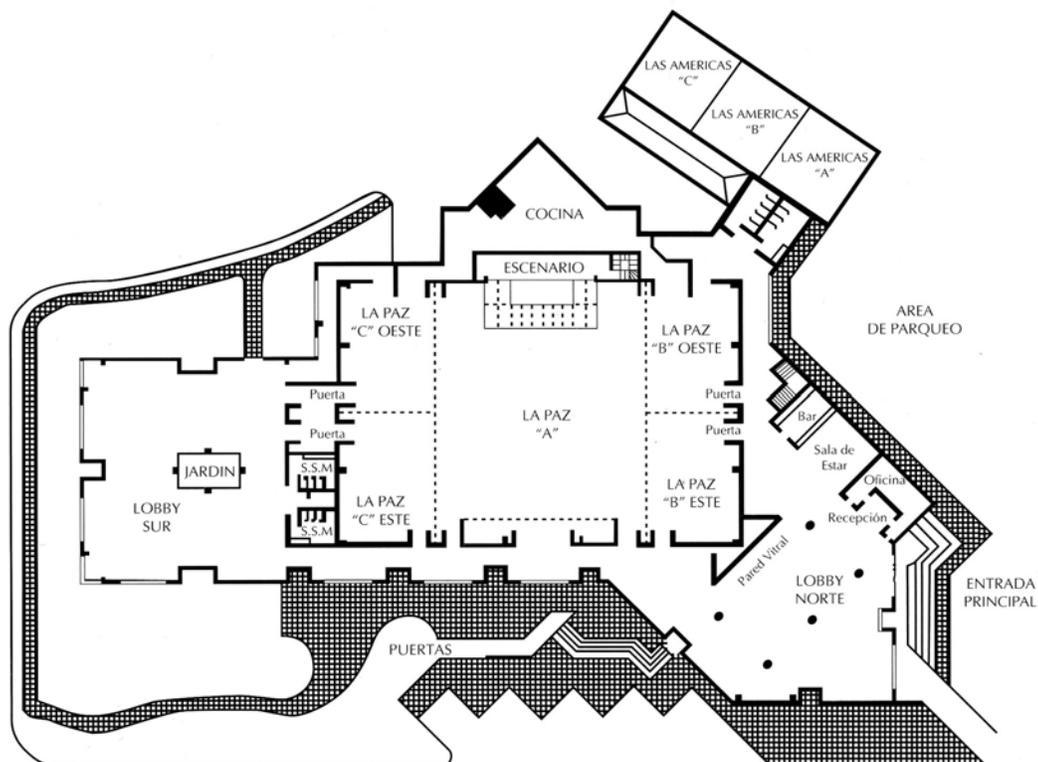
WHERE: Hotel Ramada Plaza Herradura – [www.ramadaherradura.com](http://www.ramadaherradura.com), San Jose, Costa Rica

WHEN: Sunday, August 8 to Friday, August 13, 2010

Located five minutes from the international airport and 15 minutes from downtown San Jose, Hotel Herradura has everything required for the 7<sup>th</sup> Congress of Dipterology. The hotel has 232 rooms, 4 restaurants, a cafeteria, and an extensive conference center, and there are several other large hotels in the immediate neighborhood. The conference center has already been reserved for our use, with 150 rooms earmarked for conference delegates, at prices estimated to be less than \$100 per day per double.

At 1188 m<sup>2</sup> (13,200 sq. ft), the main salon of the conference center is large enough to seat 1000 at a banquet or lecture. It can be divided into 5 smaller rooms – the central space, at 577 m<sup>2</sup> (6400 sq. ft), suitable for plenary sessions, and four smaller lecture rooms, separated by dividers, each with 138 m<sup>2</sup> (1500 sq. ft) for individual sessions. Nearby are three more lecture rooms, each with 76.5 m<sup>2</sup> (850 sq.

ft), as well as 9 additional rooms, from 50 m<sup>2</sup> to 400 m<sup>2</sup>, distributed in other parts of the hotel. Two lobbies are located at either end of the center; the entrance will be suitable for poster presentation while the other, larger, lobby, with central garden and adjacent kitchen, is large enough to accommodate all the delegates for lunch as well as for coffee breaks.



Invitations to be on the Organizing Committee were sent, and the following dipterists enthusiastically accepted: Dalton de Souza Amorim (Brazil), Stephen Gaimari (USA), Sergio Ibanez-Bernal (Mexico), Maria Angeles Marcos-Garcia (Spain), Jeff Skevington (Canada), Gustavo Spinelli (Argentina), Brian Wiegmann (USA), and Chris Borkent (Canada). Adrian Pont (England) will represent the Council for International Congresses of Dipterology (CICD).

The theme of the meeting will be Neotropical Biodiversity. Registration will take place Sunday afternoon and evening, August 8, followed by an Opening Reception in the evening. On Monday the Opening Plenary Address will be followed by formal sessions. Monday evening will be reserved for posters and commercial sponsors, while Tuesday may be reserved for a BioBlitz in INBioparque. The banquet will be held Wednesday evening and the closing Farewell party Friday evening.

At least one post-congress field trip is planned; the Monteverde Biological Station has been reserved for the second half of August. A specialized tour operator will help participants arrange collecting trips, reservations and transportation to multiples destinations in Costa Rica. Collecting and Export permits are required for sampling in Costa Rica and can be obtained through INBio at a reasonable charge. Lab space for those interested in studying the INBio collection will be available on a limited basis and reservation is required. A website being developed will include online registration, information on Costa Rica and INBio, the conference center, hotels and rates, collecting requirements, etc.

We will do our best to organize a great congress and look forward to seeing you in San José in 2010!

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### **Starting a research program on Dixidae**

by J. Kevin Moulton

Dept. Entomology & Plant Pathology, 2431 Joe Johnson Dr., 205 Ellington Plant Sciences Bldg.  
The University of Tennessee, Knoxville, Tennessee 37996-4560, USA; [jmoulton@utk.edu](mailto:jmoulton@utk.edu)

Dear Fellow Dipterists: I want to use this forum to announce my plans to start a research program on the family Dixidae for the Nearctic Region, and perhaps beyond (since T. Mike Peter's retirement a decade ago). Collection of a handful of new species from the southeastern USA and ensuing difficulties in determining their status peaked my interest. I am planning a full revision of the Nearctic fauna, including a stab at associating and discriminating larvae. I am currently using a morphology- and DNA-based method of species recognition/separation and, in some cases, larval association. Thus far this method is working extremely well, with cryptic species popping up in a couple of so-called "widespread species." Finally, I hope to address higher relationships within the family using DNA, if not also, morphology. I would be grateful to receive adult dixids that you or your students encounter in the future or already have in hand plus any material suitably preserved for molecular study.

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### **A call for Conopidae!**

by Joel Gibson

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Ottawa, ON, K1A 0C6, Canada; [gibsonj@agr.gc.ca](mailto:gibsonj@agr.gc.ca)

As the field season rapidly approaches I would like to put out a special request to all those heading out to the field. If you are collecting and come across any Conopidae in Malaise traps or sweeps, I would appreciate it if you could put some aside in alcohol. I am conducting a phylogenetic analysis of the Conopidae using molecular characters and the more worldwide taxa the better. I appreciate your help and look forward to hearing from you.

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### **Request for blow fly specimens from the Neotropical Region**

by Terry Whitworth

Adjunct Professor of Entomology, Washington State University, 2533 Inter Avenue,  
Puyallup, WA 98372, USA; [wpctwbug@aol.com](mailto:wpctwbug@aol.com)

I have started a project to develop keys to the species of blow flies of the Neotropical Region. I am interested in examining specimens from the West Indies, and Central and South America. My current focus is on the genus *Lucilia* and I am especially interested in *Lucilia* from the West Indies. If anyone has contacts with collectors in the West Indies who could collect for me, I would also be willing to provide some funding for that purpose. Please contact me at the address above. Also, visit my webpage at <http://www.birdblowfly.com>.

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### **Announcing the Tabanidae PEET**

by Keith Bayless<sup>1</sup>, Brian M. Wiegmann<sup>1</sup>, David K. Yeates<sup>2</sup>, Shelah Morita<sup>1,3</sup>, and Gail Kampmeier<sup>4</sup>

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We are pleased to announce that the US National Science Foundation has funded a PEET (Partnerships for Enhancing Expertise in Taxonomy) for another group of flies – Tabanidae! The grant is titled Taxonomic, Phylogenetic, and Evolutionary Studies of Horse flies (Diptera: Tabanidae): An Integrated Approach to Systematics Training. Previous PEETs on families such as Therevidae, Rhagionidae, and Aulacigastridae have generated important evolutionary research on flies and trained a number of productive dipterists. Horse flies face waning taxonomic expertise and a higher-level classification sorely in need of cladistic revision, but are open to numerous fascinating and relevant evolutionary questions, such as plant-insect pollinator coevolution and the development of haematophagy. Add to this their economic importance and Tabanidae are an ideal group for training in systematic dipterology.

The project will focus on training a cohort of systematists. Our group will create a database of the family eventually leading to an updated world catalog. A phylogenetic framework of the family using molecular and morphological data will be fashioned. The students will complete several generic revisions. We will also disseminate our results and reach out to possible future students using the internet and outreach tools such as those available to us at the National Evolutionary Synthesis Center. The principal investigators are Brian Wiegmann, Shelah Morita, David Yeates, and Gail Kampmeier. Each brings a unique set of skills and experience that combine to make a formidable team for training students. The grant provides training for at least four trainees: three graduate students and postdoctoral fellow Shelah Morita. Shelah will focus on the higher-level phylogeny of Tabanidae as a context for student projects and help mentor students. Summer student Daniela Carnovale, working in Australia with David Yeates, started in December 2007 and will be focused on *Scaptia*. Additionally, David Yeates and collaborator Dave Spratt have just submitted a large revision of Australian *Cydistomyia* species to Zootaxa. The revision treats 40 species, 17 of which are new. Brian Wiegmann will mentor at least two students at NCSU. Master's Student Keith Bayless started in August at NCSU and will focus on Diachlorini, particularly the long-proboscid genus *Dasychela*. Daniela Ramírez will start at NCSU in the fall. Finally, Gail Kampmeier is expanding the Mandala database in response to needs of the Tabanidae PEET.

We have established contacts with most other tabanid taxonomic experts, such as John Burger, Christian Gonzalez, Sixto Coscaron, and Theo Zeegers, as well as John Stoffolano, the leading expert in tabanid physiology. To facilitate collaboration, we have started an EDIT (European Distributed Institute for Taxonomy) group for Tabanidae (<http://www.diptera.myspecies.info/content/tabanidae>).

We look forward to collaborating and strengthening ties with the entire tabanid community. We welcome any information about tabanid diversity and seek specimens that could be donated or borrowed. We would be particularly excited to find ways to share information from our project that will help advance other dipterological initiatives.

More information can be found at <http://www.inhs.uiuc.edu/research/tabamid/>.

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### **Bishop Museum Press series online**

by Neal Evenhuis

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A digitizing project is underway at Bishop Museum Press to make available as many of its published articles and books as possible as pdf files. To get the project rolling, one of the first series to undergo scanning was its *Insects of Micronesia* series. This started in 1954 and volumes and fascicles were published by the Department of Entomology, which at the time had also published *Pacific Insects*, *Pacific Insects Monographs*, and the *Journal of Medical Entomology*. In 1986, a new administration caused all departmental publications to be discontinued. In order to keep the *Insects of Micronesia* series going, we made arrangements for its continued publication through the journal *Micronesica*, published by the University of Guam. Although published infrequently, the series continues, and currently there is one paper in press on Lauxaniidae by Mitsuhiro Sasakawa that will hopefully appear later this year.

In addition to this series, the scanning of all the family chapters for the original 1989 *Catalog of Diptera of the Australasian and Oceanian Regions* is also complete – and updated versions of many of the chapters are available as html.

The following are links to the web sites from which pdf files can be downloaded:

Bishop Museum Press scholarly publications home page:

<http://hbs.bishopmuseum.org/pubs-online/>

*Insects of Micronesia*:

<http://hbs.bishopmuseum.org/pubs-online/iom.html>

Australian/Oceanian Diptera catalog home page:

<http://hbs.bishopmuseum.org/aocat/>

*Pacific Insects* home page:

<http://hbs.bishopmuseum.org/pi/>

*Pacific Insects Monographs* home page:

<http://hbs.bishopmuseum.org/pim/>

The *Pacific Insects* and *Pacific Insects Monographs* home pages contain a Google search engine to allow a convenient method for obtaining all the articles you desire that contain a particular word or phrase. Over time the other series will have this feature installed as well.

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## **Books on offer from Hungary**

by Mihály Földvári

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Due to lack of storage room in our library, we have a stock of the following titles that we offer free of charge to the scientific community, in particular to Dipterists. We cannot pay for sending large numbers, however it is possible to send a limited number of books.

We ask that anybody who is interested to think about possible ways to pay for shipping, but individual cases should not be a problem.

If there are multiple requests from an area, we can organise that all books go to one address so the shipping costs can be minimised. Please contact me by e-mail if you are interested.

PAPP, L. (ed.). 2001. Checklist of the Diptera of Hungary. 550 pp. - ISBN 963 7093 710.

SOÓS, Á. & L. PAPP (eds). 1993. Catalogue of Palaearctic Diptera. Vol. 13: Anthomyiidae - Tachinidae. 624 pp. - ISBN 963 7093 21 4.

SOÓS, Á., L. PAPP & P. OOSTERBROEK (eds). 1992. Catalogue of Palaearctic Diptera. Vol. 1: Trichoceridae - Nymphomyiidae. 520 pp. - ISBN 963 7093 10 9.

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## **Getting Old Coverslips Off Canada Balsam Specimens**

by Art Borkent

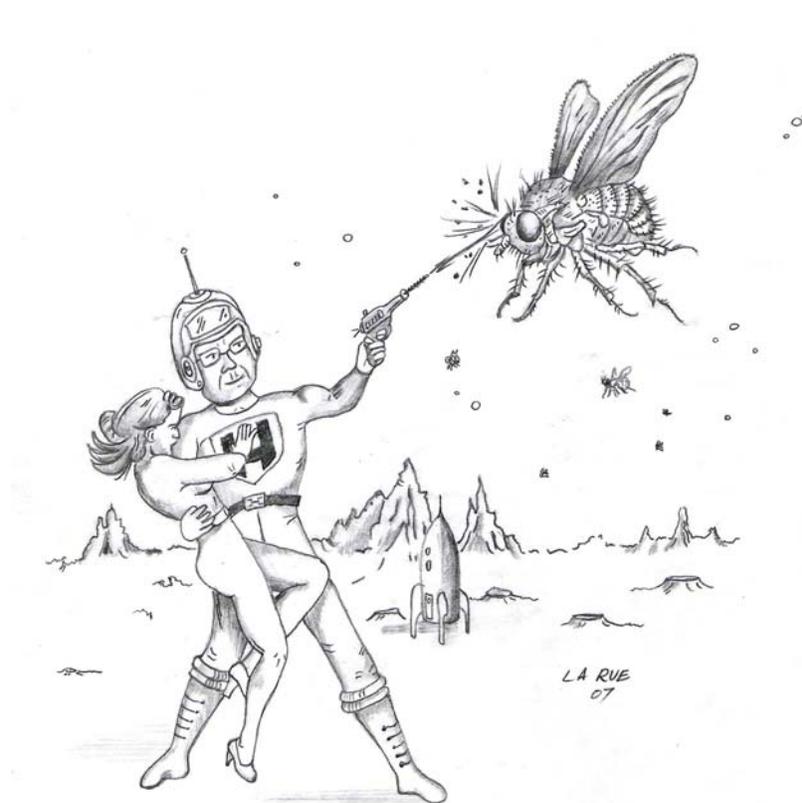
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By coincidence, I've spoken to 3 colleagues in the last couple of weeks about a snazzy little technique that may be useful to some of you. A recurring theme for those of us working with slide material is the need to remove a coverslip to reorient or further dissect a specimen on a previously prepared microscope slide. Removing the coverslip by applying xylene to the edges of the coverslip is tedious, time consuming and can result in the specimen being damaged as the Canada Balsam slowly softens and the coverslip moves about. Instead, place the flat side of a small piece of dry ice on the coverslip so that the dry ice is in more or less complete contact with the entire coverslip, wait until the area is thoroughly frozen, and then "pop" the coverslip off with a pair of tweezers applied to its edge, leaving the Canada Balsam and specimen behind. A small drop of Xylene then applied directly to the area of Canada Balsam with the specimen allows for further manipulations.

I haven't tried this with coverslips on other mounting media such as Euparal but it'd be worth a try.

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## From Delbert La Rue



Captain Skevington was glad he was wearing his sure-grip boots and had remembered to shave that morning. He stood his ground, captured the heart of Angela, and using his "zap-a-state" raygun, successfully fought off the evil and paraphyletic acalyptroids.

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## TRAVEL NEWS AND TIPS

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### Notes from the field: A new species of redheaded Nemestrinidae from South Africa may shake up some botanical names.

By Shelah Morita

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*Shelah Morita is currently in South Africa as a NSF International Research Fellow studying long-proboscid fly systematics and pollination biology. Her specific focus is on two groups, Tabanidae and Nemestrinidae. Although this work is not in North America, one can be assured that Morita is a North American Dipterist!*

The “Little Karoo” region of South Africa, the most eastern portion of the Western Cape Province, is walled in on all sides by mountains. Not just any mountains, but steep, majestic ones. A four to five hour drive from the major universities here, the eastern portion of the Little Karoo is less explored than the peninsular region.

Two weeks ago, I went to the eastern Little Karoo (see Figure 1) looking for *Tritoniopsis longituba* (Iridaceae) and its hypothesized pollinator, an enormous, rufous colored, long-proboscid nemestrinid that David Barraclough says is a new species.

One of my post-doc sponsors, Bruce Anderson, had caught a few of these flies previously. He hypothesized that these redheaded beasts were the pollinators for several species of long-tubed *Tritoniopsis*. We were discussing possible pollinators for *T. longituba*, a long tubed pink flower fitting a long-proboscid fly pollination syndrome and looking in an outdated flower guide (although the only one available) for the Outeniqua ranges. It showed both *T. longituba*, and a long tubed reddish flower, *T. anthozyla*, which is bird pollinated. A systematist at heart, I took a few minutes to look up the current status of the name. To our surprise, we found that *T. longituba* and *T. anthozyla* had been synonymized (see Figure 2). How could this be! Well, our work was cut out for us. We just needed to find these populations of “*Tritoniopsis longituba*,” and document that its pollinator is a long-proboscid fly.

So, we had Bruce’s collections of the fly in two or three places and one reported site for *T. longituba*. They did not overlap.



Figure 1. Mountains on the edge of the eastern Little Karoo. This is the view from the Slypsteenberg. Yes, I climbed up there. Photo by S. Morita.



Figure 2. Left – *Tritoniopsis anthozyla*. Photo from “South African Wild Flower Guide 10, Cederberg”. This is from the western portion of the Western Cape Province. Right – *Tritoniopsis longituba* = *anthozyla* from the eastern Little Karoo. Photos by S. Morita.

So, I struck out to the eastern border of the Western Cape. My first site was to the reported population of *T. longituba*. After driving along a closed road and some crashing through senile fynbos (see Figure 3), I found them. Several of them. And after many hours of bundu-bashing, watching nectar robbing carpenter bees and falling into a lot of holes (old fynbos is hard to walk through, you can’t see your feet!), I finally saw a fly! Yes, and it came to visit *Tritoniopsis*! Of course, I had just started to engage my pooter to collect some other bug when I heard its booming flight as it came in for a landing. A bit startled, I frantically grabbed my net, an act that scared the fly off.



Figure 3. Senile fynbos where I found *Tritoniopsis longituba*. Note the number of invasive pines.

Eventually, I saw three pollination events. The place wasn't really kicking. But I did catch the fly! What a beauty! Almost all the nemestrinids you encounter in South Africa are grey or grayish-yellow. But this one had a rufous coloring and gorgeous red tufts on the sides of its abdomen (see Figure 4). That's when I started calling it the "redheaded" fly.



Figure 4. Redheaded Nemestrinidae, *Prosoeca* sp. nov?

Next, I traveled to the Antoniesberg (see Figure 6). This mountain is right on the border with the Eastern Cape, and, more importantly, it's within an hours drive to Willowmore. Any Dipterist working with South African specimens should be familiar with Willowmore and the notable 'Dr. Brauns.' Dr. Brauns, as all his labels read, was an insect collector in South Africa during the late 1800's and early 1900's. Around 1920, Dr. Brauns retired to Willowmore. Subsequently, he acquired many specimens by paying farm workers and children to collect for him. However, the localities of these collections, regardless of the source, were labeled "Willowmore Capeland."



Figure 6. The Antoniesberg.

Brian Stuckenberg imparted this information to me, and this is why Bruce had come to the Antoniesberg. Because he was looking for *Prosoeca ganglbaueri*, another nemestrinid collected by Dr. Brauns from "Willowmore."

After talking to the farmers about accessing their land, I started my ascent. South African farmers generally have no problem with biologists, a concept that takes getting used to after working in the foothills of California. Usually, they are excited to hear about cool insects and flowers on their land. In fact, one farmer gave me advice as to where I might find the flowers after I described them. He remembered seeing them when looking for his sheep, he said. It turned out to be the wrong species of plant, but I was impressed.

Part of this may be due to the fact that South Africa has only recently implemented property tax. So, historically, farmers have been happy to leave large portions of their farms undeveloped, and they have no fear or eminent domain.

So, where was I... walking up the mountain? I didn't get very far before I started catching flies. This mountain was healthy and recently burned (about 6 yrs old, youngish for Karoo veld). I could see my feet. Although it was windy, I was able to catch 4 species of nemestrinid on this mountain, including the redhead. Near the top of the mountain, I caught a recently eclosed nemestrinid. I was walking along and I heard the revving noise of pre-flight thermogenesis. Just as I looked in that direction, I heard flight. The fly clumsily flew in my direction and I caught it easily. To my surprise, the abdomen looked funny and expanded. Apparently, it hadn't finished expelling the meconium. I rushed over to where I thought I had seen it alight, and searched all among the rocks. Unfortunately, I found only a few ant nests, but not the pupal exuvia I was looking for.

And, I found no *Tritoniopsis*. All the flies were visiting relatively short tubed (about 1-1.5 cm) flowers called *Jamesbrittina* and *Sutra*. But, interestingly, the redheads I caught from Antoniesberg have proboscis lengths about one third the length of other populations (around 1.5 cm). This longer proboscid populations of redheads (closer to 7 cm) are found with *Tritoniopsis*. *Tritoniopsis* has tube lengths of about 7 cm. (see Figure 7).

Ironically, it turns out that the synonymy came about because of pollination syndromes, but indirectly. Originally, there were several genera of iridaceous flowers that were defined by floral characteristics due to convergence in pollination syndrome. For instance, the genus *Anapalina* was composed of several unrelated species all with bird pollinated flowers. During the splitting of genera like *Anapalina*, I believe the plant taxonomists were, rightly, trying to ignore such convergent characters. Consequently, the synonymized *T. antholyza* with *T. longituba*. But the story is more complicated. Flowers in the western part of *T. longituba*'s distribution do not look like those on the eastern edge of its range. So, perhaps, specimens labeled and called *T. longituba* in the western reaches are actually *T. antholyza*. But it is interesting to note, that in Manning and Goldblatt's (2005) paper on pollination guild of *Tritoniopsis*, they did not visit any eastern populations of *T. antholyza* (and therefore, they did not observe the *T. longituba* form).



Figure 7. Two redheaded nemestrinids. Top: from the Langeberg (Western Cape).  
Bottom: from the Eastern Little Karoo.

So, now we have documentation of a different pollinator for *Tritoniopsis longituba*, and some evidence that the long proboscides on the nemestrinid pollinator may be co-evolved with the flowers. We hope to get more data on these interesting patterns next field season.

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## Ecuador – Tandayapa Valley and area

by Jeff Skevington

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My wife Angela and I were just in Ecuador for a short holiday. We learned a few things that might be helpful to others planning a collecting trip or holiday there. We spent our time ~2 hours NW of Quito in the Tandayapa Valley (Figure 1) and adjoining areas.

The most important ‘discovery’ that we made was of a small hotel called Mirador Rio Blanco (Figure 2) in the town of Los Bancos (00°01'21"N, 78°53'28"W; telephone number: 2-770-307). Los Bancos is a bit of an eyesore but the Mirador Rio Blanco is an oasis in the midst of the squalor. The cost was US\$25 per night per person including all meals. The food was exceptional and all including drinks was safe to eat, the lodging was clean, the view over the river valley from the little restaurant was wonderful, there were loads of tanagers (11 species) and hummingbirds at the restaurant feeders, there is secure parking, etc. The only negative was that there was a fair bit of truck traffic noise through the night since they are on the main highway – nothing that earplugs couldn’t solve though.



Figure 1 (left). Spot in the Tandayapa Valley. Figure 2 (right). Mirador Rio Blanco hotel in Los Bancos.

Within 10 minutes by car of Mirador Rio Blanco are the Milpe reserves (on a gravel road that starts near km 91 on the main highway). Of course, permits are needed to collect here, but it is a superb area of mid-elevation forest (1100 m). There are two reserves at Milpe. The first is less than 1 km down the gravel road on the right. Watch for the small sign with MCF and an Umbrellabird on it (MCF stands for Mindo Cloudforest Foundation; <http://www.mindocloudforest.org/>). This is the only marker indicating that you are at a preserve. The second site is a few hundred meters further along the road and seems equally good (Milpe Gardens – 00°02'07"N, 78°52'15"W). Milpe Gardens has a covered, open sided building with hammocks, cooking facilities, tables, etc. if you are really doing things on the cheap. We also were able to hit Rio Silanche (00°08'42"N, 79°08'29"W; 400 m) from Mirador Rio Blanco. The drive there takes about 1 hour. Exit the main highway onto the gravel road near km 127. Collecting along the gravel access road is excellent. A permit would be required for the Preserve itself. This was a spectacular site with typical lowland forest. The Preserve is about 10 km down the gravel road; watch for the small MCF signs indicating turns that you need to make along this road.

Renting a car in Quito was easy. Just walk out of the airport and there are three or four rental places right there. I booked ahead through Avis but they had no record of my booking and I ended up paying \$700 for 8 days when it should have cost about \$500 (I learned later). You can easily just get your car when you arrive without booking ahead. They are all open 7 days a week from about 8am to 8pm. Driving was typical of Latin America, easy enough if you are defensive. Signage was non-existent. Try to work out your routes and get maps before going. There were no maps available from the rental car place and getting out of Quito was tricky. We ended up hiring a cab for \$10 and following him for 45 minutes until we were out of town. Once out of the city there is only one main road so things were considerably easier. Do not get a vehicle GPS to help you around Quito. It was the reason that we got lost. You are better off without it and it's preferred routes on goat paths.

Other places that we stayed were excellent but they were on the birding circuit and thus cost a fortune. I would recommend all of them, but not everyone will want to drop that much cash. Bellavista Lodge (<http://bellavistacloudforest.com/index.html>; 00°00'58"S, 78°40'53"W; 2300 m) costs about US\$72 per night per person including all meals. Food and accommodation were good, the forest is excellent and there are lots of trails. This is a good starting point for a trip since they are about the only place in Ecuador that was well signed. They also provide a decent bed and breakfast for \$27 per person in Quito for those arriving late in the day. Someone will meet you at the airport and take you there. Bellavista has a research station for \$10 per night but it was pretty rough. There were nice new showers, decent accommodation for leaders, foam bunks for students and a pretty rugged kitchen area where you have to make your own meals. I wouldn't recommend it unless you check it out first.

Tandayapa Lodge (00°00'08"N, 78°40'37"W; 1700 m) costs about \$92 per night per person including all meals. It is completely unsigned. Take the first road/driveway on the right after you pass through Tandayapa and it goes up to the lodge. As with Bellavista, food and accommodation were good, the forest is excellent and there are lots of trails. The hummingbird feeders were exceptional with 19 species at them the days we were there. This Lodge is within striking distance of Yanacocha Preserve (Figures 3, 4) (00°06'41.5"S, 78°35'05"W; 3500 m).



Figures 3 (left) and 4 (right). Yanacocha Preserve.

This is a superb high elevation site very near Quito and about 1.5 hours from Tandayapa. There are places to stay a bit closer at Nono that should be cheaper but we did not investigate them. Do not expect to find Yanacocha Preserve unless you come prepared with maps from Google Earth or elsewhere. It is

unsigned and there are about four turns needed to get there. I collected at Bellavista, Tandayapa and Yanacocha without any problems. They were totally unconcerned with me carrying my net in full view around the buildings.

A superb experience was visiting La Paz (00°01'12"N, 78°42'26"W; 1900 m). It is about 45 minutes from either Tandayapa or Bellavista. Angel Paz leads birders around his trails here to show them Antpittas and Wood-Quail. The species targeted are amongst the hardest to see in Ecuador and he calls them out and feeds them worms. Quite an amazing experience. He also had no problem with us collecting on his property. The forest is very good with a network of trails. The road to this site also has lots of great collecting potential. The site is signed on the main highway (a small sign just past km 65 marks the road entrance). You would have to arrange access to Angel Paz and his property from one of the lodges. He charges \$15 per person for a day but would likely work out a different rate for those interested in collecting over several days.

We saw a couple of other spots that had potential. Mindo Lomo (phone: (593) 094228204; e-mail [minfo@mindolomacloudforest.com](mailto:minfo@mindolomacloudforest.com); \$55 per day per person, all meals included) had good trails, was far enough off the main road to be quiet, and gives good access to Bellavista, Mindo, and area.

One other site with potential was the El Pahuma Orchid Preserve (<http://www.ceiba.org/elpahuma.htm>). It is well signed and less than one hour from Quito on the new highway. Stop at the little restaurant and the owner can show you the 'lodge' back in the forest. We did not look inside but it looked OK and cost about \$50 per night, I assume including food at the restaurant. This site has nice trails and could offer good access to decent forest closer to Quito (about 2700 m if I remember correctly). Their web site has directions from Quito airport, something that would have been useful to us.

Feel free to contact me if you have any specific questions about visiting this area.

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## SUBMISSION FORM DIRECTORY OF NORTH AMERICAN DIPTERISTS

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For those who have not yet sent in a synopsis of their interests for the *Directory of North America Dipterists*, the following form is provided. Please restrict yourselves to no more than 20 words when listing the titles of your major projects and the animals you work with. Should any of you like to expand or modify your entries from the last list, use the form to indicate the changes.

The information can be emailed, or the form completed and faxed or sent to the following address:

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**Projects and taxa studied:** \_\_\_\_\_

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