



# ***FLY TIMES***

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Welcome to the latest issue of *Fly Times*! As usual, I thank everyone for sending in such interesting articles! I hope you all enjoy reading it as much as I enjoyed putting it together! Its being a month late has allowed the issue to be larger than it would have been on time! Please let me encourage all of you to consider contributing articles that may be of interest to the Diptera community for the next issue. *Fly Times* offers a great forum to report on your research activities and to make requests for taxa being studied, as well as to report interesting observations about flies, to discuss new and improved methods, to advertise opportunities for dipterists, to report on or announce meetings relevant to the community, etc., with all the associated digital images you wish to provide. This is also a great place to report on your interesting (and hopefully fruitful) collecting activities! Really anything fly-related is considered. And of course, thanks very much to Chris Borkent for again assembling the list of Diptera citations since the last *Fly Times*!

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>. For this issue, I want to again thank all the contributors for sending me so many great articles! Feel free to share your opinions or provide ideas on how to improve the newsletter. Also note, the [Directory of North American Dipterists](#) is constantly being updated. Please check your current entry and send all corrections (or new entries) to [Jim O'Hara](#) – see the form for this on the last page.

Issue No. 55 of the *Fly Times* will appear next October. Please send your contributions by email to the editor at [stephen.gaimari@cdfa.ca.gov](mailto:stephen.gaimari@cdfa.ca.gov). All contributors for the next *Fly Times* should aim for 10 October 2015 (maybe then I'll get an issue out on time!) – but don't worry – I'll send a reminder! And articles after 10 October are OK too!

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## CONTENTS

### NEWS

Borkent, A., & Brown, B. — State of the Zurquí All Diptera Biodiversity Inventory (ZADBI) .....	1
Ferrington, L.C., Jr. — Chironomidae in SLICE Lakes, Assessment of Biodiversity of Chironomidae in Tier 1 SLICE Lakes of Minnesota .....	2
Gonçalves Miranda, G.F. — Tefé, Amazonas, Brazil – A short report through pictures .....	4
Hribar, L.J. — How Many <i>Dasyhelea</i> Eggs Make an Egg Mass? .....	11
Murphy, W.L. — Legacy data from Dr. Benjamin A. Foote .....	13
Borkent, C., Gillung, J. & Winterton, S. — Spider flies wanted! .....	13
Bayless, K.M. — Specimen request: freshly collected material of rare and unusual Acalypratae .....	14

### HISTORICAL DIPTEROLOGY

Korneyev, V.A. — Vitaliy Nikolaevich Tanasijtshuk (Tanasiychuk), January 18, 1928 – December 04, 2014 .....	17
Editor's note .....	20

### MEETING NEWS

Dahlem, G.A., Stireman, J.O., III, & DeBry, R.W. — Second Announcement, 2015 Field Meeting of the North American Dipterists' Society: Red River Gorge, KENTUCKY, 7-11 June 2015 .....	21
Dikow, T. — NADS meeting at ESA 2015 Meeting .....	24

### OPPORTUNITIES

Dikow, T. — Fellowship Opportunities at the Smithsonian Institution .....	25
Dikow, T., & S.W. Williston Fund committee — S.W. Williston Diptera Research Fund at the National Museum of Natural History, Smithsonian Institution .....	26

DIPTERA ARE AMAZING .....	28
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BOOKS AND PUBLICATIONS .....	32
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SUBMISSION FORM, DIRECTORY OF NORTH AMERICAN DIPTERISTS .....	47
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## NEWS

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### State of the Zurquí All Diptera Biodiversity Inventory (ZADBI)

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We are in the final year of our ZADBI project, with our overall objectives being to interpret the number of species of Diptera in the cloud forest at Zurquí, Costa Rica and to make some comparisons of that diversity to that found at Tapantí and Las Alturas. We have nearly completed the extraction and curation of all species from the two Malaise traps at Zurquí, with only a few specimens yet to be slide mounted. There will remain some unsorted samples from some specialized samples at Zurquí (some light traps, emergence traps, etc.) because these sampled more material than expected. All material from the Las Alturas Malaise trap has been curated, mostly because the numbers and diversity weren't high. The Tapantí material is much more abundant and diverse and the parataxonomists are steadily extracting and curating select groups at the present time.

The last of the prepared material from Zurquí is presently at the Los Angeles County Museum and will be disbursed shortly by our project manager Estella Hernandez. This should provide nearly all collaborators with the final specimens needing identification from Zurquí. Our parataxonomists will be employed till Aug. 31 of this year, when our NSF financing ends and hence any further extraction and/or curation for the project ends. We are hoping to have Zurquí specimens identified by September, using our web-based identification spreadsheets. Comparisons with the Las Alturas and Tapantí material will wait until all the final material is sent from INBio to LACM, likely sometime in August or early September.

We have some further results regarding the diversity of Diptera at Zurquí. There are now 72 families represented and input from a number of further collaborators over the last months has pushed the total number of species to 2,348 species (based on 13,381 specimens). Some of the "big" families have not yet been fully interpreted and we are looking forward to hearing from all our collaborators over the coming months.

Many of you will know that there have been major changes at INBio, with the ownership of their large collection now under the auspices of the National Museum. The collection itself is still physically in the same location as before but there is discussion suggesting they will have a new facility in the next few years. All the ZADBI material, and the work space for our parataxonomists remains under the care of INBio and is NOT part of the collection now governed by the National Museum. It will remain independent for the foreseeable future. The parataxonomists did, however, need to move from the collection building to the main INBio building where they actually have more space to work.

A publication in Zootaxa has recently appeared describing the significance of the ZADBI project and the methods involved. It is open access and available as the following citation. It has some nice photos of our parataxonomists as well ☺

Borkent, A. and B.V. Brown. 2015. How to inventory tropical flies (Diptera)—one of the megadiverse orders of insects. Zootaxa 3949: 301–322.

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**Chironomidae in SLICE Lakes**  
**Assessment of Biodiversity of Chironomidae in Tier 1 SLICE Lakes of Minnesota**



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**Scientific Context for this Study**

The Section of Fisheries of the Minnesota Department of Natural Resources is leading a collaborative effort to monitor and record biological and chemical changes that may occur over long periods in a sample of lakes that are representative of the state's most common aquatic environments. The collaborative effort is referred to as "*SLICE: Sustaining Lakes In A Changing Environment*" and our lab one of the partner groups involved in this effort. More details of the SLICE Lakes effort is on-line at:

<http://www.dnr.state.mn.us/fisheries/slice/index.html>

<http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/lakes/sentinel-lakes.html>

<http://www.dnr.state.mn.us/fisheries/slice/investigations.html>

Chironomidae are a family of aquatic flies (Diptera) that are exceptionally species rich and useful in documenting water and habitat quality in freshwater systems (Ferrington, 2008; Ferrington *et al.*, 2008). In Minnesota lakes, these flies serve as the primary food sources for a number of sport and

forage fish species, and they are essential links in nutrient cycling and energy flows in freshwater systems. In our lakes they are usually the most biologically diverse group of aquatic insects and are considered to be reliable indicators of water quality, habitat structure and climate conditions. They can be very species rich and numerically abundant in healthy aquatic habitats, with more than 100 species known to occur in some streams in Minnesota, and at least 80 species in some urban lakes of the Twin Cities (Rufer & Ferrington, 2008). We anticipate encountering more than 100 species across the Tier 1 SLICE Lakes.

### Scope of Research

We will use an innovation field collection technique during this research that has been shown to be efficient at detecting species, effective in determining phenological patterns, and is highly cost-effective (Ferrington, 1987; Ferrington *et al.*, 1991; Bouchard & Ferrington, 2011). The method relies on collections of surface-floating pupal exuviae (SFPE) that are concentrated on the water surface by wind and wave action. Both wind direction and intensity of wave action can change over time, consequently we will collect at several pre-determined points in each slide lake (3-5 depending on bay structure and habitats) to ensure that collections are representative of the species emerging on each sample date.

### References

- [Bouchard, R. W., Jr. and L. C. Ferrington, Jr. 2011.](#) The effects of subsampling and sampling frequency on the use of surface-floating pupal exuviae to measure Chironomidae (Diptera) communities in wadeable temperate streams. *Environmental Monitoring and Assessment* 181:205-223.
- [Ferrington, Leonard C. Jr. 1987.](#) Collection and Identification of Floating Pupal Exuviae of Chironomidae for Use in Studies of Surface Water Quality. Prepared for U. S. EPA, Region VII, Kansas City, KS as SOP No. FW130A. 39 pp. + appendix.
- [Ferrington, L.C., Jr. M. A. Blackwood, C.A. Wright, N. H. Crisp, J. L. Kavanaugh and F. J. Schmidt. 1991.](#) A Protocol for Using Surface-Floating Pupal Exuviae of Chironomidae for Rapid Bioassessment of Changing Water Quality. pp.181-190. In: *Sediment and Stream Water Quality in a Changing Environment: Trends and Explanations*. IAHS Publication Number 203. 374 pp.
- [Ferrington , L. C., Jr. 2008.](#) Global biodiversity of non-biting midges (Chironomidae: Diptera) in freshwater. *Hydrobiologia (Special FADA Issue)*. 595(1): 447-455.
- [Ferrington, Jr., L.C., M.B. Berg, and W.P. Coffman. 2008.](#) Chironomidae. Chapter 26, pp. 847-989. In: R.W. Merritt, K.W. Cummins, and M.B. Berg, eds. *An Introduction to the Aquatic Insects of North America*. 4th Ed., Kendall/Hunt Publishing Co., Dubuque, Iowa.
- [Rufer, M. M. and L. C. Ferrington, Jr. 2008.](#) Sampling frequency required for chironomid community resolution in urban lakes with contrasting trophic states. *Boletim do Museu Municipal do Funchal (História Natural)* No. 13:77-84.

**For more information follow links below.**

[Field Design and Sampling Methods](#)

[Products and Deliverables](#)

[Values Added Aspects](#)

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## Tefé, Amazonas, Brazil – A short report through pictures

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Hello Fly Times friends!

I was in Tefé in the state of Amazonas, Brazil, this past April collecting and photographing and I wanted to share some pictures taken there. I didn't have time to properly id the Diptera so please feel free to let me know if you have any identification to contribute.

Tefé was known as Ega and was one of Henry Walter Bates stops in the Amazon. The region around Tefé is a lowland rainforest that suffers periodic flooding and, although by the margin of the Solimões river, it has influence of black-water as well. The pictures and collecting were carried out in an upland forest since the flooded areas were, well, flooded...

We met some very friendly locals who offered us lodging closer to the forest (Mr. Francisco in the pictures). One of the areas had a nice primary forest but most of the older trees had been cut down for timber already... They have some delicious fishes and fresh local açaí, which I highly recommend. Summarizing, I know some people to put you in touch if you ever decide to go to that way.

I hope you enjoy the pictures... cheers!



Mr. Francisco's humble house





(left) The extremely nice owner of the propriety where we spent a few days collecting; (right) A view of the Tefé Lake from the Oliveira Hotel where we stayed a few days



(left) Canopy trap; (right, upper) Small trap in a slightly more elevated area than the big Malaise trap; (right, lower) Malaise trap over a wide area of pooled rain water









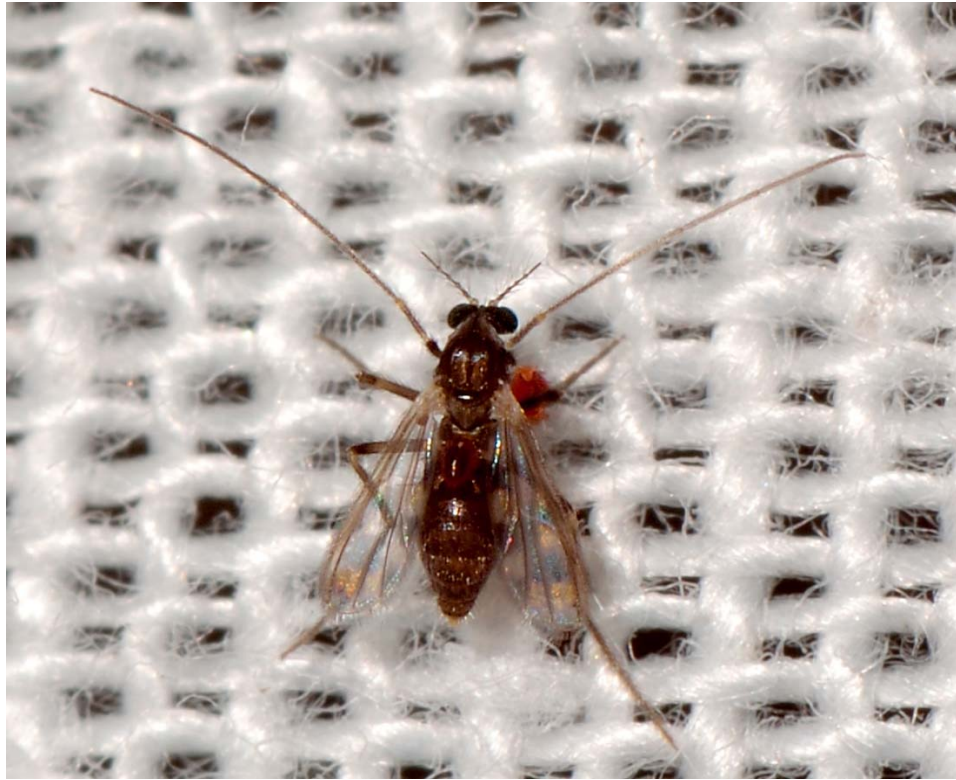












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## How Many *Dasyhelea* Eggs Make an Egg Mass?

Lawrence J. Hribar

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Among the standard methods employed for mosquito surveillance is the ovicup, also known as the “little black jar” (apologies to Coco Chanel) or LBJ (apologies to the Johnson family). The jar is partially filled with water and an oviposition substrate, such as seed germination paper or a wooden paddle or tongue depressor is placed in contact with the water. Mosquitoes such as *Aedes aegypti* (L.) will lay their eggs on the substrate just above the water. The substrate can be collected later and the number of eggs counted. Although the technique is used to monitor *Ae. aegypti*, other mosquitoes and other flies also use the container habitat. *Dasyhelea* midges (Ceratopogonidae) often use the same substrate as does *Ae. aegypti* (Martinez et al. 2010). The eggs of *Dasyhelea* spp. are easily recognizable by their horseshoe shape and the gelatinous matrix in which they are embedded. The species most commonly encountered in container habitats in the Florida Keys is *Dasyhelea pseudoincisurata* Waugh & Wirth (Hribar et al. 2004).

Thirty wooden tongue depressors collected from 2010 to 2012 on Conch Key, Lower Matecumbe Key, Upper Matecumbe Key, and Vaca Key were examined for *Dasyhelea* egg masses. Almost half (14) did not have any *Dasyhelea* egg masses. Of the remainder, the number of egg masses varied from one to five per depressor, with two exceptions: one depressor had nine egg masses and another had 19 masses. The number of eggs per mass varied from one to 74; nine was the most common number of eggs per mass (n = 6 egg masses), followed by 7, 17, and 25 (4 egg masses each). The counts of eggs per mass do not include 9 egg masses that were too badly damaged or encrusted in debris to get an accurate count. The total number of egg masses was 70 and the total number of eggs in the 61 egg masses that were possible to count was 1,244. The total number of eggs per tongue depressor varied from 22 to 201.

The number of eggs laid per *Dasyhelea* female varies from account to account. Keilin (1921) reported that a female *D. obscura* Winnertz lays about 120 eggs at a time. Thomsen (1937) stated that *Dasyhelea* egg masses contain between 15 and 80 eggs. Chan and LeRoux (1967) counted 22 *D. grisea* (Coquillett) egg masses; the number of eggs per mass varied from four to 167. Waugh and Wirth (1967) reported that *Dasyhelea* egg masses contain from 15 to 80 eggs. Chan and Linley (1991) reported that they found eggs of *Dasyhelea chani* Wirth and Linley on just over half (52.9%) of water lettuce (*Pistia stratiotes*) plants that they examined. Number of egg masses per plant varied from 1 to 5 and number of eggs per mass was “about 32”. Lee and Chan (1985) studied the biology of *D. ampullariae* Macfie in monkey cups (*Nepenthes* spp.) in Singapore and reported the number of eggs laid per pitcher varied from 61 to 72. They did not, however, report the number of eggs per egg mass. Martinez et al. (2010) found that less than 1% of their wooden paddles had eggs of *Dasyhelea necrophila* Spinelli and Rodriguez; number of egg masses varied from 1 to 22 and number of eggs per mass varied from 10 to 195.

A couple of questions come to mind, neither of which is easy to answer. The first is, why does a female *Dasyhelea* midge oviposit where she does? Presumably she does so in order to select the best habitat for her offspring, similar to the “mother knows best” hypothesis for herbivorous insects (Mayhew

2001). How *Dasyhelea* females select the optimal larval habitat is unknown, but studies of oviposition behavior of *Culicoides* midges indicate that different species' oviposition sites contain different levels of boron, calcium, chloride, potassium, sodium, and sulfate ions, as well as differing in electrical conductivity (Schmidtman et al. 2000). Given that *Dasyhelea* larvae can exploit a wide range of food items (Dominiak 2012 and references therein), selection of oviposition site might not be quite so particular, as long as there is access to water. The second question is, why does a female *Dasyhelea* midge lay the number of eggs per clutch that she does? There are benefits and risks to laying small and large clutches of eggs, both for the mother and the offspring (Weis et al. 1983). Laying more clutches of fewer eggs per clutch may lessen the possibility of loss of all potential offspring if one large clutch of eggs is laid (Freese and Zwölfer 1996). These are problems that better minds than mine will have to investigate.

## References

- Chan, K.L. and E.J. LeRoux. (1967). Ecological studies on three pond midges (Diptera: Ceratopogonidae) in Quebec. *Annals of the Entomological Society of Quebec* 12: 14-68.
- Chan, K.L. and J.R. Linley. 1991. Distribution of immature *Dasyhelea chani* (Diptera: Ceratopogonidae) on leaves of *Pistia stratiotes*. *Annals of the Entomological Society of America* 84: 61-66.
- Dominiak, P. 2012. Biting midges of the genus *Dasyhelea* Kieffer (Diptera: Ceratopogonidae) in Poland. *Polish Journal of Entomology* 81: 211-304.
- Freese, G. and H. Zwölfer. 1996. The problem of optimal clutch size in a tritrophic system: the ovipositional strategy of the thistle gallfly *Urophora cardui* (Diptera, Tephritidae). *Oecologia* 108: 293-302.
- Hribar, L.J., J.J. Vlach, D.J. DeMay, S.S. James, J.S. Fahey, and E.M. Fussell. 2004. Mosquito larvae (Culicidae) and other Diptera associated with containers, storm drains, and sewage treatment plants in the Florida Keys, Monroe County, Florida. *Florida Entomologist* 87: 199-203.
- Keilin, D. 1921. LVII. – On the life-history of *Dasyhelea obscura*, Winnertz (Diptera, Nematocera, Ceratopogonidae), with some remarks on the parasites and hereditary bacterial symbiont of this midge. *Annals and Magazine of Natural History Series* 9, 8: 576-590.
- Lee, K.M. and K.L. Chan. 1985. The biology of *Dasyhelea ampullariae* in monkey cups at Kent Ridge (Diptera: Ceratopogonidae). *Journal of the Singapore National Academy of Science* 14: 6-14.
- Martínez, M., B. Canneva, and M.M. Ronderos. 2010. Diptera, Ceratopogonidae, *Dasyhelea necrophila* Spinelli and Rodriguez, 1999; detection of eggs in ovitraps, in Uruguay. *Check List* 6: 239-241.
- Mayhew, P.J. 2001. Herbivore host choice and optimal bad motherhood. *Trends in Ecology and Evolution* 16: 165-167.
- Schmidtman, E.T., R.J. Bobian, and R. P. Beldian. 2000. Soil chemistries define aquatic habitats with immature populations of *Culicoides variipennis* complex (Diptera: Ceratopogonidae). *Journal of Medical Entomology* 37: 58-64.
- Thomsen, L.C. 1937. Aquatic Diptera. Part V. Ceratopogonidae. *Cornell University Agricultural Experiment Station Memoir* 210: 57-80.
- Waugh, W.T. and W.W. Wirth. 1967. A revision of the genus *Dasyhelea* Kieffer of the eastern United States north of Florida (Diptera: Ceratopogonidae). *Annals of the Entomological Society of America* 69: 219-247.
- Weis, A.E., P.W. Price, and M. Lynch. 1983. Selective pressures on clutch size in the gall maker *Asteromyia carbonifera*. *Ecology* 64: 688-695.

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### Legacy data from Dr. Benjamin A. Foote

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On behalf of the late Dr. Benjamin A. Foote, emeritus professor at Kent State University, Kent, Ohio, USA, and with the approval and encouragement of his widow, Anita, I would like to announce the availability for download of a consolidated, organized set of several thousand files comprising much of the biological data that Dr. Foote accumulated during his lifetime. I have arranged the files by general topic and then, where applicable, by order (mostly Diptera), family, genus, and species. A complete Excel list of the files is available at [www.trinidadbirding.com/BenFooteFiles.xls](http://www.trinidadbirding.com/BenFooteFiles.xls). The files can be downloaded as one zipped 309MB file at [www.trinidadbirding.com/BenFooteFiles.zip](http://www.trinidadbirding.com/BenFooteFiles.zip).

Please note that right-clicking in Windows on “unzip” will fail to unpack the downloaded zipped file. Use an unzipping program such as WinZip (<http://www.winzip.com/win/en/downwz.html>), Free Zip File Opener ([http://download.cnet.com/Free-Zip-File-Opener/3000-2250\\_4-76170817.html](http://download.cnet.com/Free-Zip-File-Opener/3000-2250_4-76170817.html)), or 7-Zip (<http://www.7-zip.org/>).

As an alternative to downloading the zipped file, the original files so they can be browsed and only files of interest downloaded; see <http://www.trinidadbirding.com/BenFooteFiles>.

The files of greatest interest to dipterists are in “BenFooteFiles\DIPTERA MANUSCRIPTS\\_FAMILIES OF DIPTERA,” as well as in “BenFooteFiles\REARING RECORDS\\_MISCELLANEOUS.”

I converted many of the files from older formats (WordPerfect, Quattro, dBase III, etc.) to newer ones (Microsoft Office). If a file does not look like you think it should, I would be happy to send you the original.

If use of Dr. Foote’s data leads to a publication, it would be appreciated if he were added as coauthor or acknowledged as a contributor. Please disseminate this information as widely as possible among your biologist friends and associates.

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### Spider flies wanted!

Chris Borkent, Jessica Gillung & Shaun Winterton

California State Collection of Arthropods, Plant Pest Diagnostics Branch,  
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As spring has arrived and the 2015 field season is getting underway, we would like to put out a special request to all those heading out with their sweep nets and Malaise traps. If you are collecting and come across any spider flies (Acroceridae), we would appreciate receiving any specimens you could spare (specimens will of course be returned to lending collections!). Ideally we would like to receive

specimens in 95% absolute ethanol (NOT denatured ethanol), so that we can use them for both morphological and molecular data. We are working on a worldwide phylogeny of the spider flies, as well as several genus-level revisions, and are looking for relatively fresh material of all genera and species, from anywhere. We are particularly interested in species of *Eulonchus*, *Lasia* and *Ocnaea*, but any specimens received will be of great help. We very much appreciate your help and look forward to hearing from you!



**Fig. 1.** *Eulonchus halli*

**Fig. 2.** *Lasia coleii*

**Fig. 3.** *Ocnaea sequoia*

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**Specimen request: freshly collected material of rare and unusual Acalyptratae**

Keith M. Bayless

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I am a PhD student working with fly phylogeny based on transcriptome data, as part of an international collaboration looking to gain insight, thousands of genes at a time, into the remarkable radiation of Schizophora. Our goals are to determine the major lineages of Schizophora and their branching pattern. I know some dipterists look at acalyptrates the same way most entomologists look at Diptera: small, obscure, and difficult to identify. Really, there's a wealth of fascinating morphological and behavioral adaptations in acalyptrate Schizophora. We desperately need a well supported phylogeny to unlock the full potential of these lines of inquiry. We don't yet have a consensus as for the three taxon statement of Drosophilidae, Tephritidae, and Calyptratae. Furthermore, our phylogenies using fewer genes have never found support for Diopsoidea, Opomyzoidea, Carnoidea, Sphaeroceroidea, or Heleomyzidae. Acalyptrate relationships are among the most difficult to recover in Insecta.

As part of an NSF funded project, lead by Michelle Trautwein and Brian Wiegmann, along with David Yeates, Rudolf Meier, and Sujatha Kutty, I am working to significantly increase the available evidence for acalyptrate phylogeny by sequencing the total RNA of adult flies. Each new transcriptome yields 30,000+ genes, and we now have transcriptomes for 110 Cyclorrhapha species. Thanks to rapidly developing bioinformatics from Karen Meusemann, Malte Petersen, and the rest of the 1KITE project ([1kite.org](http://1kite.org)), we have a pipeline for curating this wealth of data into an alignment for phylogenetic analyses. This project is progressing rapidly despite its huge scope.

Acalyptratae is rife with morphologically strange, species poor, and geographically isolated lineages. However, some of these are likely sister groups to other radiations, and their inclusion in the tree will certainly be informative. I need fresh material. Though my collaborators and I are deeply invested in

collecting trips around the globe, we will need assistance from the broader fly community for this project to reach its potential. The procedures for collecting are not very difficult or new.

Material must be collected recently as RNA can quickly degrade and RNase enzymes act fast. Ideally the specimen will be killed in RNAlater - a heavy salt solution preservative - and kept cold in a -20C or -80C freezer. Specimens in RNAlater can be kept at room temperature for a few days. Another useful collecting medium is 95% ethanol, but the specimen must be kept cold. We can send RNAlater, and help defray shipping costs of the specimens. Tissue must be macerated during RNA extraction but we can be accommodating and minimally disturb rare or critical taxa. We will share sequences with relevant parties as soon as they are available. We are also interested in developing projects on phylogeny and functional genomics with any Diptera expert. Along with this, we can also discuss changes to our sampling scheme to address other questions in Schizophora phylogeny. Our sampling scheme is not yet completely set, but we have a deadline of the end of 2015 for adding more taxa to this project.

A list of the acalyprate taxa we lack at this point follows. Taxa in bold are the highest priority- the most likely, in my opinion, to be critical for the project

### **Australimyziidae**

Camillidae

*Campichoeta*

Celyphidae

*Circumphallus*

Cryptochetidae

Ctenostylidae

Cypselosomatidae

*Eurygnathomyia*

Gobryidae

'Heleomyziidae'- *Prosopantrum*, *Cinderella*, *Heteromyza*, Rhinotorini, etc.

Helosciomyziidae

Huttoninidae

### **Inbiomyiidae**

### **Megamerinidae**

Nannodastiidae

Natalimyziidae

Neminidae

### **Neurochaetidae**

### **Nothybidae**

### ***Paraleucopis***

*Periscelis*

Phaeomyiidae

### **Somatiidae**

*Strongylophthalmyia*

### **Teratomyziidae**

The classification I'm using here is roughly in line with Systema Dipteroorum

(<http://www.diptera.org/FamilyTables.php>). If a family does not appear on this list, that means that we already have a specimen for that lineage.



Nothybidae is critical because it is associated with a superfamily name. Megamerinidae has previously been resolved as sister to most other Schizophora in previous projects. This is the most important missing taxon, in my opinion. If any Dipterists are collecting in Europe or Asia and think they can find Megamerinidae, please contact me.

The non-monophyly of Heleomyzidae is another serious confounding problem in the sampling scheme. In our preliminary analyses, Trixoscelidinae, *Tapeigaster*, and Heleomyzini+Suillini are not resolved as close relatives, strangely. Representatives of any other Heleomyzidae lineages would be extremely valuable.

Material for any of these taxa would be valuable for our project. In most instances, a single specimen is all that's needed. We have sequenced transcriptomes from a single *Gymnochiromyia* and a single *Odinia*. For flies smaller than that we may need multiple specimens to get a suitable RNA yield.

Please strongly consider whether you might be able to collect and share any of these families, particularly the ones in bold (Australimyziidae, Inbiomyiidae, Megamerinidae, Neurochaetidae, Nothybidae, *Paraleucopis*, Somatiidae, and Teratomyzidae). Please contact me (kmbayles@ncsu.edu) if you would like more specific information, about collecting, or about data gathering and analysis, any advice about sampling or collection, or any ideas for collaborations on genomic projects in your taxon of interest. This is really the beginning of a new integrative descriptive Dipterology, connecting genetics, phylogeny, and organismal biology. We just need a few more flies.

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## HISTORICAL DIPTEROLOGY

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**Vitaliy Nikolaevich Tanasijtshuk (Tanasiychuk)**

**January 18, 1928 – December 04, 2014**

Valery A. Korneyev

General and Applied Entomology Department, I.I. Schmalhausen Institute of Zoology,  
National Academy of Sciences of Ukraine, Kiev, Ukraine; [valery.korneyev@gmail.com](mailto:valery.korneyev@gmail.com)



Vitaliy Nikolaevich Tanasijtshuk (Tanasiychuk), “Chook,” was born on January 18, 1928 in Murmansk, Russia. His parents were biologists at Murmansk Hydrobiological Station. Later they moved to Leningrad (now Saint Petersburg). In 1933 his father, Nikolay Parfentyevich was arrested by the KGB and after prison, exiled to Astrakhan on the Caspian Sea to work as an ichthyologist at the Fishery Station. That apparently saved his life in 1937 and 1938, when many Soviet scientists, university professors, teachers, engineers and common people were imprisoned in Siberian camps for long years. His wife and son Vitaliy followed him, but in November 1941, as Nazis rapidly entered into Russia and came close to Moscow and Volga, they were forced to migrate together with prisoners on a ferry to Turkmenistan, and then in a train with luggage vans, to Uzbekistan. Passengers were dying of cold, diarrhea and camp fever, the dead were

thrown into the sea or left near the tracks without burial. Vitaliy, 13 years old, angry and suffering from rheumatism, observed that with his own eyes, and after 50 years depicted that winter in his story “The Special Migrant” (2000). Later, at the end of WWII, his family was allowed to come back to Astrakhan. In 1946 he passed his exams to Saratov University, first to the historical faculty, as he wanted to be an archaeologist. That gave him good knowledge of Latin and ancient Greek, along with his passion for ancient history. After one year and summer field trips where he was digging Scythian burial sites (mostly already robbed), he had to abandon further plans for archaeology: physicians diagnosed him a heart ailment, as the result of rheumatism survived in his childhood. Vitaliy enrolled Saratov University again, and started his specialization in entomology.

In 1950 Vitaliy started his studies on biocontrol of the olive moth in Crimea, as a student at the Nikita Botanical Garden; his supervisor was Ivan Rubtsov from the Zoological Institute. During the Christmas holidays, 1951, Vitaliy went to Leningrad as he needed confirmation of identifications of his material by experts. At the Zoological Institute of the Academy of Sciences, he met Alexander von Stackelberg. Vitaliy and spent a month in Leningrad, returning to the city of his childhood and becoming his dream.

He graduated from Saratov University in 1953, the year Stalin died. After the first attempt to pass exams for a doctoral fellowship at the Zoological Institute, Leningrad (with a very low score in the History of the Communist Party of the USSR!), Vitaliy worked at Astrakhan Nature Reserve as a zoologist for one year. His second attempt to become a doctoral student in 1954 was successful. Head of the Laboratory, Prof. Alexander von Stackelberg recommended him to study the family Chamaemyiidae, “silver flies,” with special emphasis on the genus *Leucopis*. That was his destiny.

Vitaliy Tanasijtshuk started his studies of silver flies under the supervision of Prof. Ivan Rubtsov. His first five papers, one of them in *Beiträge zur Entomologie*, resulted from comparing their aphid host species with differences in genitalic structures, which was a revolution in the systematics of Chamaemyiidae, previously based mostly on external characters. Receiving loans with the type specimens from Europe to the USSR was (and stays hitherto) extremely risky and expensive, so a few of the new species he described at that time without comparison with the types were later synonymized by Tanasijtshuk himself. But the rest, numerous species of flies he collected on his trips to his beloved Crimea, to the Caucasus and Pamir Mountains, to steppes and tundras, were really newly discovered.

Being an adored photographer, Vitaliy Tanasijtshuk was taking pictures on all his collecting trips, and not only of insects. He tried also to take underwater pictures with some self-made equipment, and also in the caves. As the prices for cameras and films were incompatible with the salary of a research scientist, Vitaliy found a source for additional funding as a text writer for the most famous Soviet popular scientific magazine “*Nauka i Zhizn*” (“Science and Life”); later some of his stories about animals were included into several picture-books for children. I was among those young readers. When I was eight years old, I found a short story with annotation of a German book “*Bau und Leben der Rhinogradentia*, with preface and illustrations by Gerolf Steiner,” which was published in the April issue, with some illustrations of weird animals, and signed by the author of that annotation, “V. Chook”. That was his common nickname among friends, and also his famous pseudonym.

He had many friends everywhere he was travelling or working. He was a child of the nineteen-sixties, a short period of freedom and hope, the so-called “Thaw”. Freedom was his faith, and universal humanistic values were his credo. As with many of my own friends, he lived his secret life in a world of “1984” or “Fahrenheit 451”; we recognized each other just from a special blink in the eyes in response to some secret words. And I was proud to be among his junior friends.

In 1986, Vitaliy Tanasijtshuk published his dipterological Magnum Opus, the chamaemyiid volume of the “Fauna of USSR”, which summarized the most comprehensive knowledge on silver flies. However, it was written in Russian. For this book, he got a certificate of Doctor of Sciences, the fourth and highest scientific degree in the Soviet academic career. These were the last days before the Berlin Wall came down, and the Iron Curtain was finally destroyed (at least as we thought then).

In 1980-1990s Vitaliy took several trips to Europe and North America, mainly with the mammoth exhibition, among them, to the Smithsonian (in 1992) and to Canada (in 1994), where he met some old friends: J. Frank McAlpine (who visited him in Leningrad in 1959) and Alex Konstantinov, whom he knew since the Soviet times. During his 1994 trip, he also visited the Illinois Natural History Survey to work with silver fly new-comer, then doctoral student Stephen Gaimari, who also returned the visit, going to Saint Petersburg for three week in 1996. After this time, due to problems with health he worked mostly at home, but it was becoming more and more difficult.

Luckily, in 1996, we both got free e-mails, and later dial-up Internet connections, which joined us for the last decade and a half. Soon after that Vitaliy Tanasijtshuk decided to concentrate his efforts on



non-fiction writing. “First of all, I promised my father, who died in 1960, to publish the diaries of his trip to Paraguay together with other four students of Saint Petersburg University in 1914-1917, and I have to keep my promises. Also, I want to write about him, his life after 1917. And I have a dream to write a book about my colleagues and friends, about Zoological Institute, our collecting trips and — about flies.”

After his first autobiographical story “The Special Migrant” («Спецпереселенец», 2000) he published a captivating book “The Five on Rio de Paraguay” («Пятеро на Рио де Парагвай», КМК Press, 2003) based on his father’s diaries, drawings and photographs; it can be considered a perfectly balanced retelling with landscapes, floras, faunas, persons, events, and dialogues reconstructed in minutest details, as if the writer were eyewitness of that trip. His next book, “Incredible Zoology (Zoological Myths and Mystifications)” («Невероятная зоология (зоологические мифы и мистификации)», КМК Press, 2009) was dedicated to the memory of his late friend Cyrill Yuryev, a great expert in the history of biology, from Gessner to Stümpke, and from Unicorn to Big Foot, a wonderful read about cryptozoology written by a true zoologist.

The last, and in my opinion, the main book written by Vitaliy Tanasijtshuk, was “Is the Fly a Chirrer? Memoires of an Old Entomologist” («Цокотуха ли муха? Записки старого энтомолога», КМК Press, 2011). This is a long and detailed trip to the past time, which keeps the memories of all the peculiar personalities, mostly zoologists he met in his life, from his parents, Nikolay and Vera, to our contemporaries and colleagues. It is not only a good reading. Every time I open it, I cannot stop that conversation with a quiet and refined interlocutor of the kind I rarely met on my way.

In 2013 we, my son Severyn and I, visited Vitaly and his wife, Dora, at their place twice. We fixed a drop of “Our Lady’s Milk” white wine and “Hennessy” and were talking. Just talking, about everything in the world, trips, poetry, common friends, living and passed away.



In the end we discussed his old article in the magazine “Science and Life”, in which Vitaliy told a story of miraculous discovery of the photographs taken in 1906-1913 in Koktebel, Crimea, where he started his studies of the silver flies. Numerous negatives were given to him by the widow of Maximilian Voloshin, a sculptor, painter and one of the most important poets in the Silver Age of Russian poetry. These photographs depicted many guests of Voloshin’s “House of Poet” in Koktebel, including Marina Tsvetaeva, Nikolay Gumilev and some other key persons of Russian literature before the WWI. Then we published the story and pictures on [Flickr](#).

In three weeks I was home, and there was a hot winter on Maidan in Kyiv, and then the annexing of Crimea by Putin’s Russia, and then the war with Russia. All this time Vitaliy Nikolayevich tried to support us Ukrainians. He was the only of my Russian friends who was not afraid to tell this aloud. “For your and our freedom.” And I greatly appreciate that.

And then... Then he died in his little flat in Saint Petersburg at night. His beloved Dora, who was with him all his life, and saved his life many times before that, could not manage to do anything that time. He was in the age when heartbeats and breaths sometimes become so weak that they cannot support even the most peculiar and brilliant brains and minds anymore. At ten a.m., when all the formalities were done, and only a heavy painless emptiness left with her, Dora turned on Vitaliy's computer and sent a short message.



“Tonight at four a.m., December 4, 2014, Vitaliy Nikolayevich Tanasiychuk passed away. He was 86, seriously ill for a long time, but never gave up. In his last days he said ‘I had a long and very lucky life’.”

I answered on his FB page: “Vitaliy Nikolayevich, how so? You had to, you were just obliged to live forever, climbing out from your diseases and starting up new books! We were always waiting you drop a line, every day, understanding that this next letter might be the last one.

You have done a miracle, you have done an impossible thing, you have had written all you wanted. I promised you to publish the photographs of Maximillian Voloshin you saved many years ago, and I am doing it today again as a memory of you and the magic hours of conversation with you. Thank you. We greatly appreciate your refinement and honesty, obtained from suffering, for your civic stance paid by personal knowledge of essence of Russian power, for your incredible erudition and your talent to be a Man with every authority. I do not say “we mourn”. After all, you need a rest from earthly work and suffering. We’ll meet again. Surely.”

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Editor's note:

As a tribute to two great Russian dipterists, Vitali Tanasiytshuk and Vera Richter, long time colleagues at the Zoological Institute who passed away within two short months of each other, here is a photo I took of them during my 1996 visit, over one of our daily coffee breaks. Vitali greatly encouraged and influenced my interest in chamaemyiids, and I am forever grateful for all the knowledge he passed me, and the help he was always so happy to provide. He was a phenomenally generous man, and I am forever grateful for the leg up he gave me. He will be sorely missed.

Please see the memorial for Vera Richter in Korotyaev & Ovtshinnikova (2015). My fond memories of Vera include our daily lunches at the Institute's cafeteria, and great conversations about a lot of things, from flies to Russian history and culture.

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## MEETING NEWS

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**Second Announcement**  
**2015 Field Meeting of the North American Dipterists' Society:**  
**Red River Gorge, KENTUCKY**  
**7-11 June 2015**



**Organizers:**

Dr. Gregory A. Dahlem  
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 Cincinnati, OH 45221; (513) 556-9743; [debryrw@ucmail.uc.edu](mailto:debryrw@ucmail.uc.edu)

The first announcement in Issue 53 of Fly Times (October, 2014) provided an overview of plans for the 2015 meeting to be held in the Red River Gorge Geological Area and Natural Bridge State Park of eastern Kentucky. The temperature can range from the low 90's to the high 40's (°F) in June in this part of the state. There is a chance of rain on one or more days during the meeting at this time of year, but hopefully we will be lucky and will only experience sunny days with pleasant temperatures. This announcement provides a tentative schedule and information on travel arrangements, accommodations, and registration.

Fees may be paid upon arrival at the meeting by cash or check made out to Greg Dahlem. Registration fees are currently estimated at \$40/participant and \$20 for students. It may be less



Zebra swallowtail enjoying rhododendron nectar



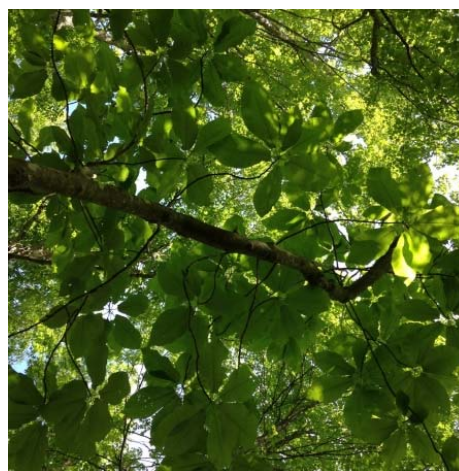
than that. We are still working out the cost involved (it will not be more than that). Registration includes the “Kentucky Derby Dinner” scheduled for Wednesday evening. We will supply an official receipt when you register.



Our “competition” appear to be fattening up before our arrival.

We still have room for another presentation or two for our presentation night scheduled for Monday. If you would like to present a paper, please send a list of authors, with speaker's name in bold, and a title to Greg Dahlem no later than June 3<sup>rd</sup>, 2015. The full program of presentations will be provided to participants and will be shared in our anticipated meeting summary for the fall issue of Fly Times. We are working to see if we can get a presentation from one or more of the park rangers that are familiar with the area to answer questions about particular microhabitats that individual participants might be hunting for.

The main meeting place for registration, presentations, group dinner, etc. will be the “Living on the Edge” cabin. (<http://www.redrivergorgecabinrentals.com/cabins/living-on-the-edge> ) Please stop by after you get settled in your personal cabin. Registration will be on Sunday, June 7, but we are planning on being in the cabin later in the day on Saturday to check things out and get set up, so feel free to stop by if you come in a day early. We will have copies of permits and other information you will need when you stop by for registration. Directions (from Cincinnati, OH / Lexington, KY area): Take I-75 south towards Lexington, Kentucky. Take I-64 east. Take Mountain Parkway- Exit #98- (east/south) toward Natural Bridge State Park. Follow Mountain Parkway to Exit #33 Slade, Kentucky. Turn right



Watch your step on the cliffs!

off exit onto Route 11, pass Natural Bridge State Park. Follow Route 11 until you reach Route 715. Take a sharp left onto Route 715. Follow Route 715 for approximately 1/2 mile until you see a sign that says "Cliffview Resort" and "Zipline" on right. Get on Cliffview Road and then take the first road to the right that will turn to gravel (you will pass a brown building on left). Continue on gravel road until you see "Living On The Edge" sign on the right. Turn right at the sign. Driveway is the first one on the left at the red gate. If you need any help along the way or during your stay, please call the office at 606-668-3272.

For those flying, the Blue Grass Airport in Lexington (LEX) would be the closest major airport, about a 1 hour 15 minute drive away from the cabins (about 70 miles to the west). This is a major airport with



a variety of car rental options. As you are driving to the Red River Gorge area, note that Winchester is the last city with full service grocery stores, restaurants, etc. This is the last city you pass before leaving I-64 and getting on Mountain Parkway. We would recommend that you stop at a grocery store to get food, drinks and other items you might want during the conference. Winchester has a Walmart and a variety of other shopping options. It is about a 40 minute drive from Winchester to the Gorge area. Shopping near the Gorge mainly consists of gas station minimart types of opportunities. We expect to have a nice supply of snacks and adult beverages at the main cabin to share with y'all. You will need to get your own supplies for breakfast, lunch and most dinners. The cabins have full kitchens with refrigerators. Fast food options are very limited in the area. We are hoping to work out places and times for some cookouts at various cabins for dinner using the grills that are a set design piece of almost all the cabins. You might want to pick up a bag of charcoal if your cabin grill does not run on gas.

Expect that cell phone coverage will be spotty in this area. Many of the cabins advertise that they have WiFi, but we do not know how high quality that will be. We can share our WiFi experience when we get together to find out who has the best connectivity. The "Living On The Edge" cabin should have good WiFi, but since we have not stayed at this location before we cannot say for sure how good or bad it will be.



We will have a processing and pinning area available at the main cabin, with dissecting scopes for anyone to use. We hope to have at least 6 dissecting scopes available. If you need other items (ethyl acetate, kill jars, ethanol, etc.), please let us know. We will try to have essential lab equipment and chemicals available for the group. We plan to have the main cabin open for people to work on their material. We are also planning on having some frozen Malaise samples available from this and/or other places in the general area. We are working out a schedule with a variety of trails to explore during our time together (Monday – Thursday morning) mainly based on the trails laid out in the book “Hiking Kentucky’s Red River Gorge” (details about this book are given in the first announcement – highly recommended). If anyone would like to schedule a visit to the University of Kentucky insect collection (in Lexington) while they are visiting the state, just let us know. So much to do, so much to see; we hope that everyone who attends this meeting in rural, eastern Kentucky will have a fun and productive time. Please contact the organizers if you have any questions.



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### **NADS meeting at ESA 2015 Meeting**

Torsten Dikow

Department of Entomology, National Museum of Natural History, Smithsonian Institution  
PO Box 37012, MRC 169, Washington, DC 20013-7012m USA; [DikowT@si.edu](mailto:DikowT@si.edu)

I have volunteered to organize this year’s NADS Meeting at the ESA meeting in Minneapolis, MN (November 15-18, [Entomology 2015](#)). The NADS meeting will take place on Tuesday evening (November 17) likely to start at 7:00 p.m.

Please contact me if you would like to present a talk in this symposium on any Diptera topic. The first deadline for me to upload presenters and titles is on May 15th after which you should be able to add presentations until the deadline in mid-June.

Let’s make this an exciting annual NADS meeting!

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## OPPORTUNITIES

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### Fellowship Opportunities at the Smithsonian Institution

Torsten Dikow

Department of Entomology, National Museum of Natural History, Smithsonian Institution  
PO Box 37012, MRC 169, Washington, DC 20013-7012m USA; [DikowT@si.edu](mailto:DikowT@si.edu)

The Smithsonian Institution's [National Museum of Natural History \(NMNH\)](#) and the [Office of Fellowships & Internships \(OFI\)](#) have an active and diverse program to support interns, predoctoral fellows (graduate students not having finished their degree), and postdoctoral fellows to allow scientists to visit our collections and conduct research here. I would like to take the opportunity to provide information on those fellowships that are of interest to dipterists and hope that some of you who are students or recently defended your dissertation think about applying to work for some time at the NMNH and utilize the outstanding [USNM Diptera collection](#).

For general information about the fellowships below and guidelines of the application process please see the [OFI web-site](#). All proposals dealing with entomological projects are first reviewed by the [Smithsonian Department of Entomology](#) and ranked within their respective categories (graduate, predoctoral, and postdoctoral). The top-ranked applications are then forwarded to the museum-wide competition including all of the biological departments (*i.e.*, Botany, Entomology, Invertebrate Zoology, Paleobiology, and Vertebrate Zoology). These fellowships are very competitive because applicants have to compete not just with other entomology proposals, but with applicants in other fields of systematic biology and taxonomy, too. Especially the postdoctoral fellowship, which receives the largest number of applications, will be the toughest one to succeed in. However, the Department of Entomology has in recent years at least obtained funding for its top-ranked candidate and in 2012, 2013, and 2015 even obtained funding for two postdocs each. These programs are open to students and researchers from around the world.

While the regular Smithsonian predoctoral and postdoctoral fellowships are only for 12 months, the NMNH has additional funds in the Peter Buck Fellowship Program to award two-year fellowships. Basically, the top-ranked museum-wide candidates will be given the two-year fellowship while one-year fellowships will be offered to as many proposals as funds allow. Especially for postdoctoral proposals, it would be advisable to submit a research proposal and budget for a two-year project to take advantage of the Peter Buck Fellowship Program.

**Application deadline:** December 1st, 2015.

#### **10-week Graduate Student Fellowship**

This fellowship is a great opportunity for graduate students to spend 10 weeks at the NMNH to study and work in our collection during this time period and incorporate the findings in their Masters or Ph.D. dissertation. (Note that only those Ph.D. students who have not yet advanced to candidacy are eligible.). **Fellowship funding:** up to US\$ 7,000.

#### **3–24 Month Predoctoral Fellowship**

This program supports those Ph.D. students who have fulfilled the requirements of candidacy (or its equivalent internationally) and who intend to spend up to 24 months working in our collection and

utilize our facilities for their research for inclusion of the findings in their dissertation. This fellowship could be seen as providing a stipend for up to 24 months, which could be spent entirely or at least in part at the NMNH. **Fellowship funding:** US\$ 32,700 annually plus a research budget of up to US\$ 4,000 annually.

### **12–36 Month Postdoctoral Fellowship**

Young scientists who have completed their Ph.D. within the past five years and who are interested in conducting research at the NMNH in close collaboration with one of the curators can apply to this fellowship program. The project proposals need to be cutting-edge and use the latest tools and methods in phylogenetic systematics in order to be competitive. A straight morphological taxonomic proposal will most likely not be competitive although proposing a taxonomic and phylogenetic project utilizing a diversity of approaches including morphology and molecular data on a large scale can be competitive. **Fellowship funding:** US\$ 48,000 annually plus a research budget of up to US\$ 4,000 annually. Note that health insurance coverage is not included in the fellowship and is the personal responsibility of the fellow with Smithsonian Institution healthcare options being available.

I am happy to discuss project ideas and proposals with graduate students and postdocs who are interested to apply to the above fellowships. It would be great to see several fellows in the Diptera unit at the NMNH.

### **Short-Term Visitor Program**

This program is available for a scholarly visit to the NMNH for research or collaboration of up to 21 days (funding of US \$2,000) or 30 days for scientists from developing regions of the world (funding of up to US \$4,000). Note, the application deadline is not fixed and submissions are welcome year round.

Links to further information:

[Smithsonian OFI Fellowships](#)

[Smithsonian OFI application procedure](#)

[NMNH Peter Buck Fellowship information](#)

[Smithsonian application system SOLAA](#)

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### **S.W. Williston Diptera Research Fund at the National Museum of Natural History, Smithsonian Institution**

Torsten Dikow, and S.W. Williston Fund committee

Department of Entomology, National Museum of Natural History, Smithsonian Institution  
PO Box 37012, MRC 169, Washington, DC 20013-7012m USA; [DikowT@si.edu](mailto:DikowT@si.edu)

The S.W. Williston Diptera Research Fund is a small Smithsonian Institution administered endowment fund established for the *increase and diffusion of knowledge about Diptera* and welcomes applications for funding annually on 30 November.



Samuel Wendell Williston was a distinguished biologist who made significant contributions to paleontology, entomology, medicine, and education. He was the first native dipterist in the U.S., the

first to produce generic monographs of Nearctic Diptera, the first to curate and study the Diptera of the USNM, and the first to make a contribution to that collection (his types of Nearctic Syrphidae). He is quoted by Shor (1971: 163) to have said, “The happiest hours of my life were those spent on the Diptera.”

About US \$6,000 are available from the endowment annually. To this day, the fund has supported the travel of graduate students and dipterists to the *International Congresses of Dipterology* and to our museum for collections-based research as well as field work.

For application procedures please see <http://asiloidflies.si.edu/content/williston-fund>.

Please consider donating to this endowment fund to support the increase and diffusion of knowledge about Diptera and particularly the research and travel of a new generation of dipterists.

To explore S.W. Williston’s life in greater detail please consult these references:

- Aldrich, J.M. 1918. Samuel Wendell Williston. *Entomological News* 29: 322–327.  
<http://biostor.org/reference/73380>.
- Shor, E.N. 1971. *Fossils and Flies: The Life of a Compleat Scientist, Samuel Wendell Williston (1851–1918)*. University of Oklahoma Press, Norman, 285 pp.
- Beckemeyer, R. 2009. Samuel Wendell Williston – the first and foremost Kansas dipterist. *Transactions of the Kansas Academy of Science* 112(3-4): 225–228.  
<http://dx.doi.org/10.1660/062.112.0412> (currently not open-access).

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## DIPTERA ARE AMAZING!

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Thank you very much to the several folks who sent such excellent photographs for your enjoyment! We'll start off with a series of mythicomyiids from Jorge Almeida (see more of his excellent photos at <https://www.flickr.com/photos/superegnum/sets/72157607322680938>).



*Cyrtisiopsis melleus* from Almería, Spain.

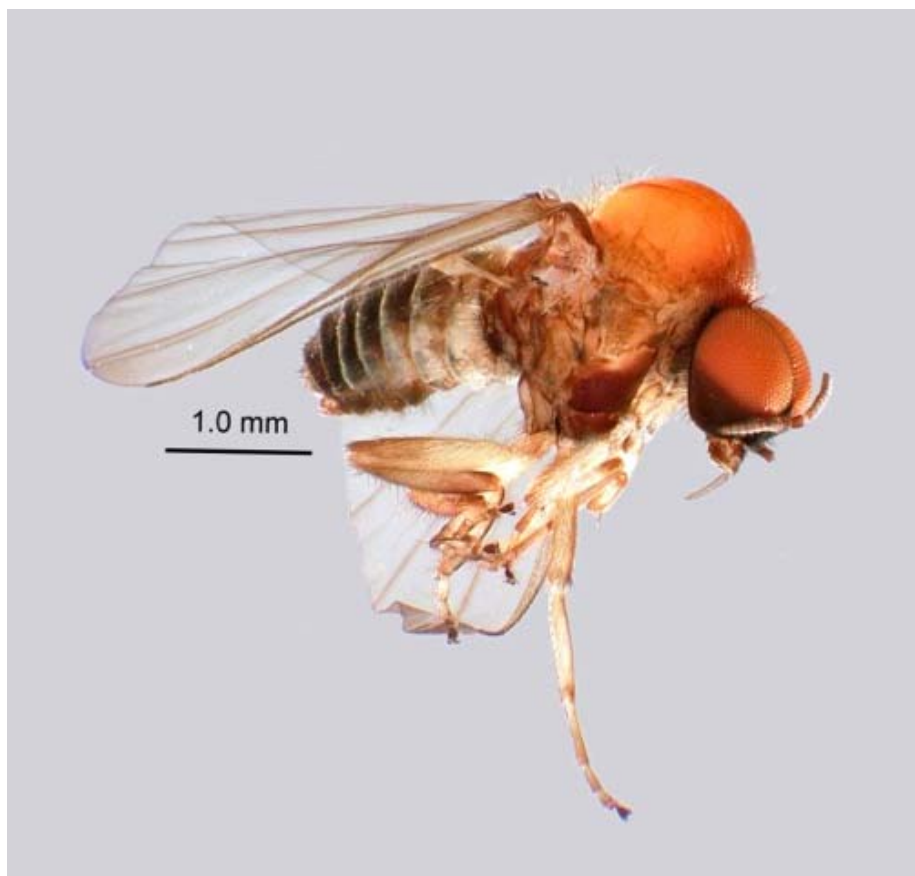


*Cephalodromia nitens* from Serra da Estrela, Portugal, in Zêzere glaciär valley.



*Platypygus ridibundus* from Serra da Estrela, Portugal, in Zêzere glaciär valley.

The following two photos of Australian simuliids were submitted by Douglas Craig. The larval head (top) is of *Paracnephia strenua*, a species that lives in very fast water. The adult (bottom) is the male 'black' fly (although definitely NOT black!) *Paracnephia aurantiaca*.





The following is a mating pair of *Chrysotus crosbyi* Van Duzee (Dolichopodidae), photographed by Lowell Tyler (Mililani, Oahu, Hawaii). Based on other photographs of this species by Lowell, this seems to be the posture of the male -- i.e., "hands free". Weird but true ...



## BOOKS AND PUBLICATIONS

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Here again is your biennial injection of Diptera discoveries, including new species, evolutionary relationships and ecological interactions. Enjoy!

As usual if we have not included a paper that you think should have been here please feel free to pass it along to Chris ([chris.borkent@gmail.com](mailto:chris.borkent@gmail.com)) and we will include it in the next issue. Unfortunately the online resources do not always catch everything and are a couple of months behind. We also apologize for the missing diacritics in some author's names, unfortunately this is a product of searching in Zoological Record and Web of Science, where they are removed.

- Adler, P.H., Inci, A., Yildirim, A., Duzlu, O., McCreadie, J.W., Kudela, M., Khazeni, A., Bruderova, T., Seitz, G., Takaoka, H. and others. 2015. Are black flies of the subgenus *Wilhelmia* (Diptera: Simuliidae) multiple species or a single geographical generalist? Insights from the macrogenome. *Biological Journal of the Linnean Society* **114**(1): 163-183. doi:10.1111/bij.12403.
- Ale-Rocha, R., Freitas, G. and Mathis, W.N. 2014. Revision of the Neotropical genus *Marbenia* Malloch (Diptera: Perisclididae). *Zootaxa* **3872**(4): 365-375.
- Amaral, A.P. and Pinho, L.C. 2015. New species and records of frog-biting midges from southern Brazil (Diptera: Corethrellidae). *Zootaxa* **3946**(2): 274-284.
- An, K.Y., Cao, H.L., Wang, X.L. and Chen, H.W. 2015. The subgenus *Ashima* (Diptera, Drosophilidae, *Phortica*) from China, with DNA barcoding and descriptions of three new species. *Systematics and Biodiversity* **13**(1): 42-51. doi:10.1080/14772000.2014.968235.
- Andrić, A., Šikoparija, B., Obreht, D., Đan, M., Preradović, J., Radenković, S., Perez-Bañon, C. and Vujić, A. 2014. DNA barcoding applied: identifying the larva of *Merodon avidus* (Diptera: Syrphidae) *Acta Entomologica Musei Nationalis Pragae* **54**(2): 741-757.
- Anjos-Santos, D., Funes, A., Spinelli, G.R. and Ronderos, M.M. 2014. The immatures of *Culicoides lacustris* Ronderos (Diptera: Ceratopogonidae). *Zootaxa* **3881**(6): 583-590.
- Arillo, A., Penalver, E., Perez-De La Fuente, R., Delclos, X., Criscione, J., Barden, P.M., Riccio, M.L. and Grimaldi, D.A. 2015. Long-proboscid brachyceran flies in Cretaceous amber (Diptera: Stratiomyomorpha: Zhangsolvidae). *Systematic Entomology* **40**(1): 242-267. doi:10.1111/syen.12106.
- Ayala, M.M., Spinelli, G.R., Funes, A. and Ronderos, M.M. 2015. Additional notes on biting midges from the subtropical forest of northeastern Argentina (Diptera: Ceratopogonidae). *Zootaxa* **3941**(1): 79-90.
- Azar, D., Huang, D.Y., Cai, C.Y. and Nel, A. 2015. The first trichomyiine from Burmese Cretaceous amber (Diptera, Psychodidae, Trichomyiinae). *Cretaceous Research* **53**: 48-58. doi:10.1016/j.cretres.2014.10.011.
- Azar, D., Mouawad, R. and Salame, Y. 2015. A new genus of Trichomyiinae (Diptera: Psychodidae) from Upper Cretaceous amber of New Jersey. *Cretaceous Research* **52**(B): 531-538.
- Azar, D. and Salame, Y. 2015. A new genus of Sycoracinae (Diptera: Psychodidae) from Upper Cretaceous amber of New Jersey. *Cretaceous Research* **52**(B): 539-547.
- Barr, N.B., Ledezma, L.A., Leblanc, L., San Jose, M., Rubinoff, D., Geib, S.M., Fujita, B., Bartels, D.W., Garza, D., Kerr, P. and others. 2014. Genetic diversity of *Bactrocera dorsalis* (Diptera: Tephritidae) on the Hawaiian Islands: Implications for an introduction pathway into California. *Journal of Economic Entomology* **107**(5): 1946-1958.
- Bartak, M. and Kubik, S. 2015. Three new species of European *Platypalpus* (Diptera, Hybotidae). *ZooKeys* **470**: 145-155.

- Bartak, M. and Shamshev, I. 2015. Species of *Platypalpus* Macquart (Diptera: Hybotidae) from Uzbekistan, with descriptions of thirteen new species. *Zootaxa* **3926(3)**: 351-376.
- Beebe, N.W., Russell, T., Burkot, T.R. and Cooper, R.D. 2015. *Anopheles punctulatus* group: Evolution, distribution, and control. *Annual Review of Entomology* **60**: 335-350. doi:10.1146/annurev-ento-010814-021206.
- Bellis, G.A., Halling, L. and Anderson, S.J. 2015. Pictorial key to adult female *Culicoides* Latreille, 1809 (Diptera: Ceratopogonidae) from the Northern Territory, Western Australia and South Australia. *Austral Entomology* **54(1)**: 28-59. doi:10.1111/aen.12099.
- Bergeron, M.D., Marshall, S.A. and Swann, J.E. 2015. A review of the New World *Coproica* (Diptera: Sphaeroceridae) with a description of 8 new species. *Zootaxa* **3953(1)**: 1-157.
- Borkent, A. 2014. The pupae of the biting midges of the world (Diptera: ceratopogonidae), with a generic key and analysis of the phylogenetic relationships between genera. *Zootaxa* **3879(1)**: 1-327.
- Borkent, A. and Brown, B.V. 2015. How to inventory tropical flies (Diptera)—One of the megadiverse orders of insects. *Zootaxa* **3949(3)**: 301-322.
- Brown, B.V., Amorim, D.D. and Kung, G.A. 2015. New morphological characters for classifying Phoridae (Diptera) from the structure of the thorax. *Zoological Journal of the Linnean Society* **173(2)**: 424-485. doi:10.1111/zoj.12208.
- Brown, B.V. and Hartop, E. 2014. Recognition of *Megaselia arizonensis* (Malloch, 1912) (Diptera: Phoridae), a common North American fly. *Contributions in Science (Los Angeles)* **522**: 45-49.
- Brown, B.V., Kung, G.A. and Porras, W. 2015. A new type of ant-decapitation in the Phoridae (Insecta: Diptera). *Biodiversity Data Journal* **3(e4299)**.
- Brown, B.V. and Porras, W. 2015. Extravagant female sexual display in a *Megaselia* Rondani species (Diptera: Phoridae). *Biodiversity Data Journal* **3(e4368)**.
- Bueno Mari, R., Bernues Baneres, A. and Jimenez Peydro, R. 2014. Biodiversity and larval habitat heterogeneity of mosquitoes (Diptera: Culicidae) in northern Spain. *Acta Zoologica Bulgarica* **66(4)**: 547-554.
- Burt, T.O., Skevington, J.H. and Rocha, L. 2015. Revision of Nearctic *Stylogaster* (Diptera: Conopidae). *Canadian Entomologist* **147(2)**: 125-147. doi:10.4039/tce.2014.39.
- Calhau, J., Nihei, S.S. and Lamas, C.J.E. 2014. Taxonomic revision of *Pseudorhopalia* Wilcox & Papavero, 1971 (Insecta, Diptera, Mydidae, Rhopaliinae), with description of a new species from the Brazilian Amazon. *Zootaxa* **3884(4)**: 333-346.
- Camara, J.T., Plant, A.R. and Rafael, J.A. 2014. Neotropical *Hemerodromia* Meigen (Diptera: Empididae), a world of discovery I: new generic record and new species from Brazilian Amazon Basin. *Zootaxa* **3893(2)**: 209-231.
- Capellari, R.S. 2015. Review of the *longipalpus*-group of *Chrysotus* Meigen (Diptera: Dolichopodidae), with description of four new species. *Neotropical Entomology* **44(1)**: 47-58.
- Carvalho-Filho, F.D.S. 2014. Description of new species of *Surimyia* Reemer and *Carreramyia* Doesburg (Diptera: Syrphidae) from the Brazilian Amazon. *Zootaxa* **3887(1)**: 79-87.
- Cavasini, R., Buschini, M.L.T., Machado, L.P.B. and Mateus, R.P. 2014. Comparison of Drosophilidae (Diptera) assemblages from two highland *Araucaria* forest fragments, with and without environmental conservation policies. *Brazilian Journal of Biology* **74(4)**: 761-768. doi:10.1590/1519-6984.00113.
- Cazorla, C.G. and Spinelli, G.R. 2015. A revision of the Patagonian predaceous midges of the subgenus *Acanthohelea* of *Stilobezzia* excluding the *S. (A.) edwardsi* group (Diptera: Ceratopogonidae). *Journal of Natural History* **49(3-4)**: 155-209. doi:10.1080/00222933.2014.939728.
- Celep, F., Atalay, Z., Dikmen, F., Dogan, M. and Classen-Bockhoff, R. 2014. Flies as pollinators of melittophilous *Salvia* species (Lamiaceae). *American Journal of Botany* **101(12)**: 2148-2159.



- Cerretti, P., O'Hara, J.E., Winkler, I.S., Lo Giudice, G. and Stireman, J.O. III. 2015. Two tribes hidden in one genus: the case of *Agaedioxenis* Villeneuve (Diptera: Tachinidae: Exoristinae). *Organisms Diversity & Evolution*: (preprint). doi: 10.1007/s13127-015-0211-0
- Choufani, J., El-Halabi, W., Azar, D. and Nel, A. 2015. First fossil insect from Lower Cretaceous Lebanese amber in Syria (Diptera: Ceratopogonidae). *Cretaceous Research* **54**: 106-116. doi:10.1016/j.cretres.2014.12.006.
- Choufani, J., Perrichot, V., Azar, D. and Nel, A. 2014. New biting midges (Diptera: Ceratopogonidae) in late cretaceous Vendean amber. *Paleontological Contributions* **10**: 34-40.
- Clarke, L.J., Soubrier, J., Weyrich, L.S. and Cooper, A. 2014. Environmental metabarcodes for insects: in silico PCR reveals potential for taxonomic bias. *Molecular Ecology Resources* **14**(6): 1160-1170. doi:10.1111/1755-0998.12265.
- Collins, R.A. and Cruickshank, R.H. 2014. Known knowns, known unknowns, unknown unknowns and unknown knowns in DNA barcoding: A comment on Dowton et al. *Systematic Biology* **63**(6): 1005-1009. doi:10.1093/sysbio/syu060.
- Copeland, R.S., Bukhebi, J. and Kirk-Spriggs, A.H. 2014. Newly discovered populations of the "terrible hairy fly", *Mormotomyia hirsuta* Austen (Diptera: Mormotomyiidae) in Kenya, with further observations on natural history. *African Invertebrates* **55**: 419-445.
- Cordeiro, D., Bravo, F., Wolff, M. and Carvalho, C.J.B. 2014. A new species of *Feuerborniella* (Diptera: Psychodidae) from the paramo of Colombia *Acta Entomologica Musei Nationalis Pragae* **54**(1): 377-382.
- Costa, D.N.R., Mathis, W.N. and Marinoni, L. 2015. Morphological phylogenetic analysis confirms the monophyly of *Rhysophora* Cresson (Diptera: Ephydriidae) and provides a framework for a revision of the genus. *Invertebrate Systematics* **29**(1): 71-103. doi:10.1071/is14028.
- Cranston, P.S. 2014. A new putatively cryptobiotic midge, *Polypedilum ovahimba* sp nov (Diptera: Chironomidae), from southern Africa. *Austral Entomology* **53**(4): 373-379. doi:10.1111/aen.12090.
- Crean, A.J., Kopps, A.M. and Bonduriansky, R. 2014. Revisiting telegony: offspring inherit an acquired characteristic of their mother's previous mate. *Ecology Letters* **17**(12): 1545-1552.
- Cumming, J.M. and Sinclair, B.J. 2014. The status of *Crossopalpus obscuripes* (Adams), a new junior synonym of *Crossopalpus aenescens* (Wiedemann) (Diptera: Hybotidae: Tachydromiinae). *Zootaxa* **3872**(4): 398-400.
- Da Silva, F.L. and Wiedenbrug, S. 2015. *Amazonimyia gigantea* gen. n., sp n., a new Tanypodinae (Diptera: Chironomidae) from the Neotropical Region. *Zootaxa* **3947**(2): 275-281.
- David, K.J., Hancock, D.L. and Ramani, S. 2014. Two new species of *Acroceratitis* Hendel (Diptera: Tephritidae) and an updated key for the species from India. *Zootaxa* **3895**(3): 411-418.
- David, K.J. and Singh, S.K. 2015. Two new species of *Euphranta* Loew (Diptera: Tephritidae: Trypetiinae) and an updated key for the species from India. *Zootaxa* **3914**(1): 64-70.
- Depaquit, J. 2014. Molecular systematics applied to Phlebotomine sandflies: Review and perspectives. *Infection Genetics and Evolution* **28**: 744-756.
- Diaz, F., Torreias, S.R.S., Spinelli, G.R. and Ronderos, M.M. 2014. A new species of *Dasyhelea* from Brazilian Amazonas and the description of the male of *D. paulistana* (Diptera: Ceratopogonidae) *Acta Entomologica Musei Nationalis Pragae* **54**(2): 715-728.
- Donato, M., Mauad, M. and Fuentes, M.C. 2015. A new species of *Parapsectrocladius* Cranston (Diptera: Chironomidae: Orthoclaudiinae) from Patagonia, Argentina. *Zootaxa* **3911**(4): 547-559.
- Drayson, N., Cranston, P.S. and Krosch, M.N. 2015. Taxonomic review of the chironomid genus *Cricotopus* v.d. Wulp (Diptera: Chironomidae) from Australia: keys to males, females, pupae and larvae, description of ten new species and comments on *Paratrachocladus* Santos Abreu. *Zootaxa* **3919**(1): 1-40.

- Eirin-Lopez, J.M. and Sanchez, L. 2015. The comparative study of five sex-determining proteins across insects unveils high rates of evolution at basal components of the sex determination cascade. *Development Genes and Evolution* **225**(1): 23-30. doi:10.1007/s00427-015-0491-6.
- El-Hawagry, M.S. and Al Dhafer, H.M. 2014. *Phthiria sharafi* sp. nov., a new record of the subfamily Phthiriinae (Bombyliidae, Diptera) from Saudi Arabia. *Zootaxa* **3872**(4): 387-392.
- Elsayed, A.K., Skuhrava, M., Karam, H.H., Elminshawy, A. and Al-Eryan, M.A. 2015. New records and new species of gall midges (Diptera: Cecidomyiidae) developing on Chenopodiaceae in Egypt. *Zootaxa* **3904**(1): 105-115.
- Espindola, A., Carstens, B.C. and Alvarez, N. 2014. Comparative phylogeography of mutualists and the effect of the host on the genetic structure of its partners. *Biological Journal of the Linnean Society* **113**(4): 1021-1035.
- Evenhuis, N.L. 2015. New species of *Campsicnemus* Haliday (Diptera: Dolichopodidae) from Moloka'i, Hawaiian Islands1. Bishop Museum Occasional Papers **116**: 3-17.
- Evenhuis, N.L. 2015. Two new records of Diptera (Insecta) from the Hawaiian Islands. Bishop Museum Occasional Papers **116**: 27-29.
- Everatt, M.J., Convey, P., Mirbahai, L., Worland, M.R., Bale, J.S. and Hayward, S.A.L. 2014. Can the Antarctic terrestrial midge, *Eretmoptera murphyi*, tolerate life in water. *Ecological Entomology* **39**(6): 732-735.
- Fachin, D.A. and Lamas, C.J.E. 2015. A catalogue of the types of Stratiomyidae (Diptera: Brachycera) in the collection of the Museu de Zoologia da Universidade de Sao Paulo, Brazil. *Zootaxa* **3918**(3): 406-414.
- Falaschi, R.L., Albertoni, F.F. and Fusari, L.M. 2014. A new species of Forcipomyia (Microhelea) Meigen (Insecta: Diptera: Ceratopogonidae) from the Neotropical region. *Zootaxa* **3878**(4): 379-389.
- Fang, X.L., Wang, X.H. and Fu, Y. 2014. A new species of *Corynoneura* Winnertz from Oriental China (Diptera: Chironomidae: Orthoclaadiinae). *Zootaxa* **3884**(6): 567-572.
- Felippe-Bauer, M.L. and Spinelli, G.R. 2015. New species and new records of the predaceous midge genus *Parabezzia* Malloch (Diptera: Ceratopogonidae) from Brazil. *Zootaxa* **3915**(3): 390-402.
- Ferguson, D.J. and Yeates, D.K. 2015. A new species, new immature stages, and new synonymy in Australian *Dasybasis* flies (Diptera: Tabanidae: Diachlorini). *Zootaxa* **3946**(2): 261-273.
- Gagne, R.J., Barosh, T. and Kephart, S. 2014. A new species of *Dasineura* Rondani (Diptera: Cecidomyiidae) in flower galls of *Camassia* (Asparagaceae: Agavoideae) in the Pacific Northwest, USA. *Zootaxa* **3900**(2): 271-278.
- Gomez, G.F., Bickersmith, S.A., Gonzalez, R., Conn, J.E. and Correa, M.M. 2015. Molecular taxonomy provides new insights into *Anopheles* species of the neotropical *arribalzagia* series. *Plos One* **10**(3): 17. doi:10.1371/journal.pone.0119488.
- Gonzalez, C.R. 2014. Two new species of the genus *Dasybasis* Macquart, 1847, from Chile (Diptera: Tabanidae: Diachlorini). *Zootaxa* **3893**(2): 293-300.
- Gonzalez, C.R., Reyes, C. and Rada, V. 2015. Redescription of the adults and new descriptions of the previously unknown immature stages of *Culex* (*Culex*) *articularis* Philippi, 1865 (Diptera: Culicidae) from central Chile. *Zootaxa* **3955**(3): 444-450.
- Goodman, K.R., Evenhuis, N.L., Bartosova-Sojkova, P. and O'Grady, P.M. 2014. Diversification in Hawaiian long-legged flies (Diptera: Dolichopodidae: *Campsicnemus*): Biogeographic isolation and ecological adaptation. *Molecular Phylogenetics and Evolution* **81**: 232-241. doi:10.1016/j.ympev.2014.07.015.
- Grichanov, I.Y. 2015. Palearctic species of the *Hercostomus plagiatus* group (Diptera: Dolichopodidae) with description of a new species from the Middle East. *Zootaxa* **3918**(3): 424-432.

- Grieshop, K. and Polak, M. 2014. Evaluating the post-copulatory sexual selection hypothesis for genital evolution reveals evidence for pleiotropic harm exerted by the male genital spines of *Drosophila ananassae*. *Journal of Evolutionary Biology* **27(12)**: 2676-2686.
- Grimaldi, D.A., Ginsberg, P.S., Thayer, L., McEvey, S., Hauser, M., Turelli, M. and Brown Brian, V. 2015. Strange little flies in the big city: Exotic flower-breeding Drosophilidae (Diptera) in urban Los Angeles. *Plos One* **10(4)**: e0122575.
- Grootaert, P. and Shamshev, I. 2014. New species of *Platypalpus* (Diptera: Hybotidae) from the Democratic Republic of the Congo. *European Journal of Taxonomy* **103**: 1-20.
- Grootaert, P., Tang, C. and Yang, D. 2015. New species of *Thinophilus* Wahlberg (Diptera: Dolichopodidae) from mangroves in southern China (Shenzhen). *Zootaxa* **3956(4)**: 547-558.
- Growns, I., Ryder, D., Kobayashi, T. and Garcia, A. 2014. Freshwater macroinvertebrates of Lord Howe Island. *Journal of Natural History* **48(43-44)**: 2675-2687.
- Grzywacz, A., Goral, T., Szpila, K. and Hall, M.J.R. 2014. Confocal laser scanning microscopy as a valuable tool in Diptera larval morphology studies. *Parasitology Research* **113(11)**: 4297-4302. doi:10.1007/s00436-014-4125-0.
- Guillade, A.C. and Folgarait, P.J. 2015. Effect of phorid fly density on the foraging of *Atta vollenweideri* leafcutter ants in the field. *Entomologia Experimentalis Et Applicata* **154(1)**: 53-61. doi:10.1111/eea.12255.
- Han, H.Y. and Chen, X.L. 2015. Phylogeny of the genus *Paramyiolia* Shiraki (Diptera: Tephritidae: Trypetini) with descriptions of five Chinese species. *Florida Entomologist* **98(1)**: 86-99.
- Hancock, E.G., Hewitt, S.M., Horsfield, D., Lyszkowski, R.M., Macgowan, I., Ricarte, A., Rotheray, G.E. and Watt, K. 2015. Nematocera flies recorded in Serra do Courel, northwest Spain, May 2012 (Diptera: Anisopodidae, Blepharoceridae, Cyllindrotomidae, Limoniidae, Pediciidae, Tipulidae and Trichoceridae) including descriptions of two new species of Limoniidae. *Zootaxa* **3911(2)**: 231-244.
- Harbach, R.E. and Taai, K. 2014. *Nyctomyia biunguiculata*, a new cavernicolous species of tribe Aedini (Diptera: Culicidae) from southern Thailand. *Zootaxa* **3895(3)**: 427-432.
- Harne, R.L. and Wang, K.W. 2015. Dipteran wing motor-inspired flapping flight versatility and effectiveness enhancement. *Journal of the Royal Society Interface* **12(104)**: 14. doi:10.1098/rsif.2014.1367.
- Harrup, L.E., Bellis, G.A., Balenghien, T. and Garros, C. 2015. *Culicoides* Latreille (Diptera: Ceratopogonidae) taxonomy: Current challenges and future directions. *Infection Genetics and Evolution* **30**: 249-266. doi:10.1016/j.meegid.2014.12.018.
- Hartop, E.A., Brown, B.V. and Disney, R.H.L. 2015. Opportunity in our ignorance: Urban biodiversity study reveals 30 new species and one new Nearctic record for *Megaselia* (Diptera: Phoridae) in Los Angeles (California, USA). *Zootaxa* **3941(4)**: 451-484.
- Hauser, M. 2014. Order Diptera, family Stratiomyidae. Further records and the description of a new species. *In* *Arthropod Fauna of the United Arab Emirates. Edited by A. van Harten*. pp. 695-703.
- Hernandez-Triana, L.M., Chaverri, L.G., Rodriguez-Perez, M.A., Prosser, S.W.J., Hebert, P.D.N., Gregory, T.R. and Johnson, N. 2015. DNA barcoding of Neotropical black flies (Diptera: Simuliidae): Species identification and discovery of cryptic diversity in Mesoamerica. *Zootaxa* **3936(1)**: 93-114.
- Hippa, H. and Ševčík, J. 2014. Notes on Nepaetricha (Diptera: Sciaroidea incertae sedis), with description of three new species from India and Vietnam *Acta Entomologica Musei Nationalis Pragae* **54(2)**: 729-739.
- Hippa, H., van Steenis, J. and Mutin, V.A. 2015. The genus *Sphegina* Meigen (Diptera, Syrphidae) in a biodiversity hotspot: the thirty-six sympatric species in Kambaiti, Myanmar. *Zootaxa* **3954(1)**: 1-67.



- Hrcek, J. and Godfray, H.C.J. 2015. What do molecular methods bring to host-parasitoid food webs? *Trends in Parasitology* **31(1)**: 30-35. doi:10.1016/j.pt.2014.10.008.
- Huang, J., Li, T. and Chen, H.W. 2014. The genus *Leucophenga* (Diptera, Drosophilidae), part IV: the *ornata* species group from the East Asia, with morphological and molecular evidence (II). *Zootaxa* **3893(1)**: 1-55.
- Huang, Y.M. and Rueda, L.M. 2015. Pictorial keys to the species of the subgenera *Albuginosus* and *Aedimorphus* (*grjebinei* and *apicoannulatus* groups) of the genus *Aedes* Meigen in the Afrotropical region (Diptera: Culicidae). *Zootaxa* **3925(1)**: 25-36.
- Huerta, H. and Dzul, F. 2015. A distinctive new species of Genus *Neorhegmoclemina* Cook (Diptera: Scatopsidae) from Mexico. *Zootaxa* **3911(3)**: 369-380.
- Jiao, K. and Bu, W. 2014. Gall midges (Diptera: Cecidomyiidae) recorded from China during the period from 1900 to 2012, with faunistic comparison between China and Japan. *Japanese Journal of Systematic Entomology* **20(2)**: 201-214.
- Kang, Z.H. and Yang, D. 2015. New record of *Horaia* (Diptera: Blephariceridae) in China with descriptions of two new species. *Florida Entomologist* **98(1)**: 118-121.
- Kania, I. 2015. Subfamily Limoniinae Speiser, 1909 (Diptera, Limoniidae) from Baltic Amber (Eocene): The Genus *Elephantomyia* Osten Sacken, 1860. *Plos One* **10(2)**: 24. doi:10.1371/journal.pone.0117434.
- Kania, I. 2015. The taxonomy of selected genera of the subfamily Limoniinae (Diptera: Limoniidae) from Baltic amber (eocene), with notes their phylogeny. *Annales Zoologici* **65(1)**: 71-100. doi:10.3161/00034541anz2015.65.1.007.
- Kania, I. and Krzeminski, W. 2015. A new species of *Dactylolabis* (*Idiolabis*) Alexander, 1931 from the Eocene Baltic amber and its relationships among Dactylolabinae (Diptera: Limoniidae). *Palaeontologia Electronica* **18(1)**: 15.
- Kania, I., Krzeminski, W. and Krzeminska, E. 2015. The oldest representative of the genus *Gonomyia* (Diptera, Limoniidae) from Lebanese amber (Lower Cretaceous): New subgenus and species. *Cretaceous Research* **52(B)**: 516-521.
- Kania, I., Wang, B. and Szwedo, J. 2015. *Dicranoptycha* Osten Sacken, 1860 (Diptera, Limoniidae) from the earliest Cenomanian Burmese amber. *Cretaceous Research* **52(B)**: 522-530.
- Kazerani, F., Khaghaninia, S., Talebi, A.A. and Shamshev, I. 2014. New data on *Empis* Linnaeus (Diptera: Empididae) from Iran, with description of a new species of the subgenus *Lissemipis* Bezzi. *Zootaxa* **3884(2)**: 185-193.
- Keeseey, I.W., Knaden, M. and Hansson, B.S. 2015. Olfactory specialization in *Drosophila suzukii* supports an ecological shift in host preference from rotten to fresh fruit. *Journal of Chemical Ecology* **41(2)**: 121-128. doi:10.1007/s10886-015-0544-3.
- Kehlmaier, C. 2014. A new *Lampromyia* Macquart from Europe (Diptera: Vermileonidae). *Zootaxa* **3887(4)**: 481-493.
- Kits, J.H. and Marshall, S.A. 2015. A revision of *Boreantrops* Kits & Marshall (Diptera: Sphaeroceridae: Archiborborinae). *Zootaxa* **3915(3)**: 301-355.
- Koch, N.M., Soto, I.M. and Ramirez, M.J. 2015. First phylogenetic analysis of the family Neriidae (Diptera), with a study on the issue of scaling continuous characters. *Cladistics* **31(2)**: 142-165. doi:10.1111/cla.12084.
- Kolesik, P. and Butterill, P.T. 2015. New gall midges (Diptera: Cecidomyiidae) from Papua New Guinea. *Austral Entomology* **54(1)**: 79-86. doi:10.1111/aen.12095.
- Korotyaev, B.A. and Ovtshinnikova, O.G. 2015. In memoriam. Vera Andreevna Richter. *Biodiversity Data Journal* **3** (e4187, Suppl. material 3): 1–2. [Published as a supplement to: Pape, T. et al. (2015) Fauna Europaea: Diptera – Brachycera. *Biodiversity Data Journal* **3** (e4187): 1–31.]

- Kraemer, M.M.S., Kraemer, A.S., Stebner, F., Bickel, D.J. and Rust, J. 2015. Entrapment bias of arthropods in Miocene amber revealed by trapping experiments in a tropical forest in Chiapas, Mexico. *Plos One* **10(3)**: 24. doi:10.1371/journal.pone.0118820.
- Krolow, T.K., Henriques, A.L., Gorayeb, I.D., Limeira-de-Oliveira, F. and Buestan, J. 2015. Taxonomic revision of the Neotropical genus *Pityocera* Giglio-Tos, 1896 (Diptera: Tabanidae: Scionini). *Zootaxa* **3904(3)**: 301-333.
- Krzeminski, W., Kania, I. and Lukashovich, E. 2015. The first South American record of fossil Eoptychopterinae (Ptychopteridae, Diptera) from Lower Cretaceous Santana formation. *Cretaceous Research* **52(B)**: 548-555.
- Kurina, O., Ounap, E. and Poldmaa, K. 2015. Two new *Neuratelia* Rondani (Diptera, Mycetophilidae) species from western Palaearctic: a case of limited congruence between morphology and DNA sequence data. *ZooKeys*(**496**): 105-129. doi:10.3897/zookeys.496.9315.
- Kvifte, G.M. 2014. Nomenclature and taxonomy of *Telmatoscopus* Eaton and *Seoda* Enderlein; with a discussion of parameral evolution in Paramormiini and Pericomaini (Diptera: Psychodidae, Psychodinae). *Zootaxa* **3878(4)**: 390-400.
- Kyriacou, C.P. 2014. Sex and rhythms in sandflies and mosquitoes: An appreciation of the work of Alexandre Afranio Peixoto (1963-2013). *Infection Genetics and Evolution* **28**: 662-665. doi:10.1016/j.meegid.2014.06.016.
- Lamas, C.J.E., Falaschi, R.L. and Evenhuis, N.L. 2015. A new genus and species of micro bee flies from Brazil (Diptera: Mythicomyiidae: Psiloderoidinae). *Zootaxa* **3955(3)**: 403-416
- Lapoint Richard, T., Magnacca, K.N. and O'Grady, P.M. 2014. Phylogenetics of the *antopocerus*-modified tarsus clade of Hawaiian *Drosophila*: Diversification across the Hawaiian Islands. *Plos One* **9(11)**: 1.
- Leblanc, L., Aftab, H.M., Khan, S.A., San, J.M. and Rubinoff, D. 2014. Additions to the fruit fly fauna (Diptera: Tephritidae: Dacinae) of Bangladesh, with a key to the Species. *Proceedings of the Hawaiian Entomological Society* **46**: 31-40.
- Lencioni, V., Jousson, O., Graziano, G. and Bernabo, P. 2015. Cold adaptive potential of chironomids overwintering in a glacial stream. *Physiological Entomology* **40(1)**: 43-53.
- Li, X.K., Ding, S.M., Cameron, S.L., Kang, Z.H., Wang, Y.Y. and Yang, D. 2015. The first mitochondrial genome of the sepsid fly *Nemopoda mamaevi* Ozerov, 1997 (Diptera: Sciomyzoidea: Sepsidae), with mitochondrial genome phylogeny of Cyclorrhapha. *Plos One* **10(3)**: 26. doi:10.1371/journal.pone.0123594.
- Li, Z., Tang, C.F. and Yang, D. 2014. Two new species of *Plagiozopelma* from Vietnam (Diptera: Dolichopodidae). *Entomological News* **124(3)**: 204-210. doi:10.3157/021.124.0305.
- Lin, X.Q., Shih, C.K. and Ren, D. 2015. New fossil mesosciophilids (Diptera: Nematocera) from the Yixian Formation (Lower Cretaceous) of western Liaoning, China. *Cretaceous Research* **54**: 86-97. doi:10.1016/j.cretres.2014.11.007.
- Lin, X.Q., Shih, C.K. and Ren, D. 2015. Revision of the genus *Epimesoplecia* Zhang, 2007 (Diptera, Nematocera, Protopleciidae) with five new species. *ZooKeys*(**492**): 123-143. doi:10.3897/zookeys.492.6852.
- Liu, R.S., Wang, M.Q. and Yang, D. 2015. Three new species of *Diaphorus* Meigen (Diptera: Dolichopodidae) from Tibet. *Zootaxa* **3946(2)**: 233-240.
- Liu, X.Y. and Yang, D. 2014. Species of the genus *Aragara* Walker (Diptera: Chloropidae: Chloropinae: Mindini) from China with key to species of the world. *Zootaxa* **3895(1)**: 127-136.
- Liu, X.Y. and Yang, D. 2015. Three new species of genus *Apotropina* Hendel from China (Diptera, Chloropidae). *Zootaxa* **3947(1)**: 122-130.
- Llanos, L., Gonzalez, C.R. and Saldarriaga-Córdoba, M. 2015. Revision of the New World species of the genus *Pelecorhynchus* Macquart, 1850 (Diptera: Pelecorhynchidae). *Zootaxa* **3955(2)**: 188-210.

- Lock, K. and van Maanen, B. 2014. The blackflies of the Netherlands (Diptera: Simuliidae). *Nederlandse Faunistische Mededelingen* **43**: 67-91.
- Logue, K., Small, S.T., Chan, E.R., Reimer, L., Siba, P.M., Zimmerman, P.A. and Serre, D. 2015. Whole-genome sequencing reveals absence of recent gene flow and separate demographic histories for *Anopheles punctulatus* mosquitoes in Papua New Guinea. *Molecular Ecology* **24(6)**: 1263-1274. doi:10.1111/mec.13107.
- Lukashevich, E.D. and Przhiboro, A.A. 2015. A new tribe of Diamesinae (Diptera: Chironomidae) from the Lower Cretaceous of Mongolia. *Cretaceous Research* **52**: 562-569. doi:10.1016/j.cretres.2014.03.016.
- Luoto, T.P. and Nevalainen, L. 2015. Climate-forced patterns in midge feeding guilds. *Hydrobiologia* **742(1)**: 141-152.
- Maca, J. and Otranto, D. 2014. Drosophilidae feeding on animals and the inherent mystery of their parasitism. *Parasites & Vectors* **7**: 8. doi:10.1186/s13071-014-0516-4.
- Makarchenko, E.A. and Makarchenko, M.A. 2015. Review of the genus *Abiskomyia* Edwards (Diptera: Chironomidae: Orthoclaadiinae), with description of new taxa from the Russian Far East and bordering territories. *Zootaxa* **3919(1)**: 41-60.
- Makarchenko, E.A. and Semenchko, A.A. 2014. Morphological redescription and DNA barcoding of *Linevitshia prima* Makarchenko, 1987 (Diptera: Chironomidae: Diamesinae) from Amur River basin (Russian Far East), with notes on systematics of the genus. *Zootaxa* **3872(4)**: 355-364.
- Malinga, G.M., Valtonen, A., Vesterinen, E.J., Nyeko, P. and Roininen, H. 2014. Communities of galling insects on *Neoboutonia macrocalyx* trees in continuous forests and remnants of forest fragments in Kibale, Uganda. *African Entomology* **22(4)**: 742-754.
- Marshall, S.A. 2015. *Mesoconius* Enderlein (Diptera, Micropezidae, Taeniapterinae) of Central America. *Zootaxa* **3914(5)**: 525-540.
- Marshall, S.A., Luk, S.P.L. and Dong, H. 2014. A revision of the New Zealand species of *Howickia* Richards. *Zootaxa* **3887(1)**: 1-36.
- Marshall, S.A. and Yau, T. 2014. Paramosina, a new genus of high Andean Limosininae (Diptera: Sphaeroceridae). *Zootaxa* **3872(4)**: 393-397.
- Martin-Vega, D. 2014. On the identity of *Prochyliza nigrimana* (Meigen) and *Prochyliza nigricornis* (Meigen) (Diptera: Piophilidae), with a synopsis of *Prochyliza* Walker and description of a new species. *Zootaxa* **3893(2)**: 277-292.
- Mathew, F.M., Prasifka, J.R., Gaimari, S.D., Shi, L., Markell, S.G. & Gulya, T.J. 2015. *Rhizopus oryzae* associated with *Melanagromyza splendida* and stem disease of sunflowers (*Helianthus annuus*) in California. *Plant Health Progress* **16(1)**: 39-42.
- Mathis, W.N., Costa, D.N.R. and Marinoni, L. 2015. A review of *Mimapsilopa* Cresson (Diptera: Ephydriidae) from Brazil. *Zootaxa* **3926(4)**: 499-522.
- Mathis, W.N., Marinoni, L. and Costa, D.N.R. 2014. A review of *Scatellini* (Diptera: Ephydriidae) from Brazil. *Zoologia* **31(6)**: 561-576. doi:10.1590/s1984-46702014000600005.
- McCreadie, J.W. and Adler, P.H. 2014. Abundance-occupancy relationships of larval black flies (Diptera: Simuliidae) in temperate Nearctic streams. *Insect Conservation and Diversity* **7(6)**: 523-532. doi:10.1111/icad.12075.
- Men, Q.-L. 2015. Two new species of the genus *Libnotes* Westwood (Diptera: Limoniidae) from China, with a key to Chinese species. *Zoological Systematics* **40(1)**: 79-85.
- Men, Q.L. and Yu, D.P. 2015. One new species of the subgenus *Hexatoma* (*Eriocera*) Macquart (Diptera, Limoniidae) from China with a key to Chinese species. *ZooKeys*(**477**): 157-171. doi:10.3897/zookeys.477.7570.
- Mengual, X. 2015. Revision of the genus *Rhinoprosopa* (Diptera: Syrphidae). *Canadian Entomologist* **147(1)**: 1-22. doi:10.4039/tce.2014.25.



- Mengual, X., Kazerani, F., Talebi, A.A. and Gilasian, E. 2015. A revision of the genus *Pelecocera* Meigen with the description of the male of *Pelecocera persiana* Kuznetsov from Iran (Diptera: Syrphidae). *Zootaxa* **3947**(1): 99-108.
- Michelsen, V. and O'Hara, J.E. 2014. A review of genus-group names in Diptera (Insecta) that JC Fabricius 'borrowed' from other dipterists and proposed as new in his systematic works from 1775 to 1805. *Zootaxa* **3873**(1): 73-81.
- Mico, E., Garcia-Lopez, A., Sanchez, A., Juarez, M. and Galante, E. 2015. What can physical, biotic and chemical features of a tree hollow tell us about their associated diversity? *Journal of Insect Conservation* **19**(1): 141-153. doi:10.1007/s10841-015-9754-9.
- Millette Katie, L. and Keyghobadi, N. 2015. The relative influence of habitat amount and configuration on genetic structure across multiple spatial scales. *Ecology and Evolution* **5**(1): 73-86.
- Monteiro, N.J.S., Carvalho, F.D. and Esposito, M.C. 2015. A new species of *Japanagromyza* Sasakawa (Diptera: Agromyzidae) from the Brazilian Amazon with notes on biology. *Zootaxa* **3919**(3): 493-500. doi:10.11646/zootaxa.3919.3.4.
- Montes De Oca-Aguilar, A.C., Rebollar-Tellez, E. and Ibanez-Bernal, S. 2014. Descriptions of the immature stages of *Dampfomyia* (*Coromyia*) *beltrani* (Vargas & Diaz-Najera) (Diptera: Psychodidae), with notes on morphology and chaetotaxy nomenclature. *Zootaxa* **3887**(3): 251-297.
- Moosa-Kazemi, S.H., Zahirnia, A.H., Sharifi, F. and Davari, B. 2015. The fauna and ecology of mosquitoes (Diptera: Culicidae) in western Iran. *Journal of Arthropod-Borne Diseases* **9**(1): 49-59.
- Morgulis, E. 2015. Two peculiar new species of *Otites* Latreille 1804 (Diptera: Ulidiidae) with reduced phallus. *Zootaxa* **3949**(4): 567-574.
- Mulieri, P.R., Mariluis, J.C., Patitucci, L.D. and Olea, M.S. 2015. The Sarcophaginae (Diptera: Sarcophagidae) of southern South America. I. The species of *Microcerella* Macquart from the Patagonian Region. *Zootaxa* **3933**(1): 1-88.
- Munari, L. 2015. Taxonomic and distributional notes on two species groups of the genus *Dasyrhicnoessa* Hendel (Diptera: Canacidae: Tethininae). *Zootaxa* **3920**(4): 545-554. doi:10.11646/zootaxa.3920.4.3.
- Munari, L. and Almeida, J.M. 2014. A new species of Canace Haliday from Portugal, with a revised key to species (Diptera: Canacidae: Canacinae). *Zootaxa* **3873**(2): 195-200.
- Mutin, V. and Ichige, K. 2014. A new species of *Xylota* Meigen (Diptera: Syrphidae) from the Far East. *Zootaxa* **3878**(2): 196-200.
- Namin, S.M. and Korneyev, S.V. 2015. Revision of *Heringina* Aczél, 1940 (Diptera: Tephritidae), with description of a new species from Iran and Turkey. *Zootaxa* **3949**(1): 111-122.
- Namin, S.M., Korneyev, S.V., Parchami-Araghi, M. and Gilasian, E. 2015. Revision of the *Tephritis maccus* species group (Diptera: Tephritidae) with description of a new species from Iran *Zootaxa* **3956**(6): 589-599.
- Nartshuk, E.P. and Kurina, O. 2014. A new mycophagous species of the genus *Gaurax* Loew, 1863 (Diptera: Chloropidae) from Benin, Africa. *Zootaxa* **3873**(3): 297-300.
- Nerudová, J., Kovac, D. and Tóthová, A. 2015. Description of larva and puparium of *Oplodontha rubrithorax* (Diptera: Stratiomyidae) from the Oriental Region. *Zootaxa* **3955**(1): 123-131.
- Nielsen, S.A. and Kristensen, M. 2015. Delineation of *Culicoides* species by morphology and barcode exemplified by three new species of the subgenus *Culicoides* (Diptera: Ceratopogonidae) from Scandinavia. *Parasites & Vectors* **8**: 12. doi:10.1186/s13071-015-0750-4.
- Nihei, S.S. 2015. The misplaced genus *Trischidocera* Villeneuve (Diptera, Tachinidae). *Zootaxa* **3926**(2): 279-286. doi:10.11646/zootaxa.3926.2.8.

- Nihei, S.S. 2015. Revision of the Neotropical Exoristini (Diptera, Tachinidae): The status of the genera *Epiplagiops* and *Tetragrapha*. *Journal of Insect Science* **15**: 5. doi:10.1093/jisesa/iev023.
- Nihei, S.S. 2015. Systematic revision of the ormiine genera *Aulacephala* Macquart and *Phasioormia* Townsend (Diptera, Tachinidae). *Zootaxa* **3931(1)**: 1-26.
- Nilotpol, P., Harsha, R. and Mazumdar, A. 2014. A new species of *Forcipomyia* Meigen (Diptera: Ceratopogonidae) described with immature stages from India. *Zootaxa* **3881(2)**: 165-174.
- Oliveira, S.S. 2015. On Afrotropical *Mohelia* Matile (Diptera, Mycetophilidae): new species and phylogenetic comments. *Zootaxa* **3947(2)**: 251-263.
- Omad, G.H. 2014. A new species of Psychodinae (Diptera: Psychodidae) from Argentina. *Revista Mexicana De Biodiversidad* **85(4)**: 1061-1064. doi:10.7550/rmb.45895.
- Orford, K.A., Vaughan, I.P. and Memmott, J. 2015. The forgotten flies: the importance of non-syrphid Diptera as pollinators. *Proceedings of the Royal Society B-Biological Sciences* **282(1805)**: 6. doi:10.1098/rspb.2014.2934.
- Ortiz, M.F., Wallau, G.L., Graichen, D.A.S. and Loreto, E.L.S. 2015. An evaluation of the ecological relationship between *Drosophila* species and their parasitoid wasps as an opportunity for horizontal transposon transfer. *Molecular Genetics and Genomics* **290(1)**: 67-78. doi:10.1007/s00438-014-0900-y.
- Osborne, C.J., Mayo, C.E., Mullens, B.A. and Maclachlan, N.J. 2014. Estimating *Culicoides sonorensis* biting midge abundance using digital image analysis. *Medical and Veterinary Entomology* **28(4)**: 461-464.
- Paggi, A.C. and Garay, G.N.R. 2015. The presence of species of *Pseudochironomus* Malloch 1915 (Diptera: Chironomidae) in watercourses of Chaco Serrano Ecoregion (Argentina, South America). *Zootaxa* **3957(3)**: 334-341.
- Palaczyki, A., Slowinska, I. and Klasa, A. 2015. The genus *Bergenstammia* Mik, 1881 (Diptera: Empididae: Clinocerinae) in Poland with description of *Bergenstammia glacialis* sp. nov. from the Tatra mountains. *Annales Zoologici* **65(1)**: 53-64. doi:10.3161/00034541anz2015.65.1.005.
- Pan, L., Chiang, T., Weng, Y., Chen, W., Hsiao, S., Tokuda, M., Tsai, C. and Yang, M. 2015. Taxonomy and biology of a new ambrosia gall midge *Daphnephila urnicola* sp. nov. (Diptera: Cecidomyiidae) inducing urn-shaped leaf galls on two species of *Machilus* (Lauraceae) in Taiwan. *Zootaxa* **3955(3)**: 371-388.
- Pape, T., Beuk P., Pont, A., Shatalkin, A., Ozerov, A., Woźnica, A., Merz, B., Bystrowski, C., Raper, C., Bergström, C., Kehlmaier, C., Clements, D., Greathead, D., Kameneva, E., Nartshuk, E., Petersen, F., Weber, G., Bächli, G., Geller-Grimm, F., Van de Weyer, G., Tschorsnig, H., de Jong, H., van Zuijlen, J., Vaňhara, J., Roháček, J., Ziegler, J., Majer, J., Hůrka, K., Holston, K., Rognes, K., Greve-Jensen, L., Munari, L., de Meyer, M., Pollet, M., Speight, M., Ebejer, M., Martinez, M., Carles-Tolrá, M., Földvári, M., Chvála, M., Barták, M., Evenhuis, N., Chandler, P., Cerretti, P., Meier, R., Rozkosny, R., Prescher, S., Gaimari, S., Zatwarnicki, T., Zeegers, T., Dikow, T., Korneyev, V., Richter, V., Michelsen, V., Tanasijtshuk, V., Mathis, W., Hubenov, Z., de Jong, Y. 2015. Fauna Europaea: Diptera – Brachycera. *Biodiversity Data Journal* **3**: e4187. doi: 10.3897/BDJ.3.e4187
- Patitucci, L.D., Mulieri, P.R., Dominguez, M.C. and Mariluis, J.C. 2015. The type specimens of Calyptratae (Diptera) housed in non-traditional institutions in Argentina. *Zootaxa* **3905(4)**: 557-572.
- Paul, N. and Mazumdar, A. 2015. *Chaudhuriomyia*, a new tanypod genus of Macropelopiini (Diptera: Chironomidae: Tanypodinae) from the Eastern Himalaya *Zootaxa* **3955(4)**: 537-548.
- Perrichot, V. and Engel, M.S. 2014. Youngest occurrence of the genus *Microphorites* (Diptera: Dolichopodidae): A new species in late cretaceous Vendean amber. *Paleontological Contributions* **10**: 30-33.

- Petsch, D.K., Pinha, G.D., Dias, J.D. and Takeda, A.M. 2015. Temporal nestedness in Chironomidae and the importance of environmental and spatial factors in species rarity. *Hydrobiologia* **745(1)**: 181-193.
- Pinho, L.C. and Andersen, T. 2015. *Limnophyes guarani* sp n., a new hygropetric Orthocladiinae from southern Brazil (Diptera: Chironomidae). *Zootaxa* **3948(1)**: 137-144.
- Pinho, L.C., Fusari, L.M. and Lamas, C.J.E. 2015. Three new species of *Polypedilum* Kieffer (Diptera: Chironomidae) from Neotropical region. *Zootaxa* **3947(4)**: 563-572.
- Podenas, S., Byun, H.W. and Kim, S.K. 2015. New *Dicranoptycha* Osten Sacken, 1859 Crane flies (Diptera: Limoniidae) of North and South Korea. *Zootaxa* **3925(2)**: 257-270.  
doi:10.11646/zootaxa.3925.2.7.
- Podenas, S. and Hye-Woo, B. 2014. New species of *Antocha* Osten Sacken, 1860 crane flies (Diptera: Limoniidae) for South Korea. *Zootaxa* **3900(1)**: 117-126.
- Pont, A. 2015. Description of a new species of *Fannia* Robineau-Desvoidy, 1830 (Diptera: Fanniidae) and distribution records of the genus from the Caucasus Mountains. *Zootaxa* **3956(1)**: 140-148.
- Poppe, J.L., Schmitz, H.J. and Valente, V.L.S. 2015. The New World genus *Rhinoleucophenga* (Diptera: Drosophilidae): new species and notes on occurrence records. *Zootaxa* **3955(3)**: 349-370.
- Prat, N., Gonzalez-Trujillo, J.D. and Ospina-Torres, R. 2014. Key to chironomid pupal exuviae (Diptera: Chironomidae) of tropical high Andean streams. *Revista De Biología Tropical* **62(4)**: 1385-1406.
- Puniamoorthy, N. 2014. Behavioural barriers to reproduction may evolve faster than sexual morphology among populations of a dung fly (Sepsidae). *Animal Behaviour* **98**: 139-148.  
doi:10.1016/j.anbehav.2014.10.005.
- Purse, B.V., Carpenter, S., Venter, G.J., Bellis, G. and Mullens, B.A. 2015. Bionomics of temperate and tropical *Culicoides* midges: Knowledge gaps and consequences for transmission of *Culicoides*-borne viruses. *Annual Review of Entomology* **60**: 373-+.  
doi:10.1146/annurev-ento-010814-020614.
- Qi, X., Lin, X.L., Liu, Y.D. and Wang, X.H. 2015. Two new species of *Stenochironomus* Kieffer (Diptera, Chironomidae) from Zhejiang, China. *ZooKeys*(**479**): 109-119.  
doi:10.3897/zookeys.479.8364.
- Rafael, J.A. and Cumming, J.M. 2015. Revision of the genus *Macrostomus* Wiedemann (Diptera, Empididae, Empidinae). IV. The *amazonensis* species-group. *Zootaxa* **3947(1)**: 109-121.
- Ramakodi, M.P., Singh, B., Wells, J.D., Guerrero, F. and Ray, D.A. 2015. A 454 sequencing approach to dipteran mitochondrial genome research. *Genomics* **105(1)**: 53-60.  
doi:10.1016/j.ygeno.2014.10.014.
- Reid, J.N., Hoffmeister, T.S., Hoi, A.G. and Roitberg, B.D. 2014. Bite or flight: the response of mosquitoes to disturbance while feeding on a defensive host. *Entomologia Experimentalis Et Applicata* **153(3)**: 240-245. doi:10.1111/eea.12245.
- Rocheftort, S. and Wheeler, T.A. 2015. Diversity of Piophilidae (Diptera) in northern Canada and description of a new Holarctic species of *Parapiophila* McAlpine. *Zootaxa* **3925(2)**: 229-240.  
doi:10.11646/zootaxa.3925.2.5.
- Rodrigues, F.A.J., Mathis, W.N. and Hauser, M. 2015. Argentine *Hydrellia* Robineau-Desvoidy (Diptera, Ephydriidae): new species and key to identification. *Zootaxa* **3957(1)**: 131-136.
- Rognes, K. 2015. Revision of the frog fly genus *Caiusa* Surcouf, 1920 (Diptera, Calliphoridae), with a note on the identity of *Plinthomyia emimelania* Rondani, 1875. *Zootaxa* **3952(1)**: 1-80.
- Rognes, K., O'Hara, J.E. and Cerretti, P. 2015. The identity of *Tachina westermanni* Wiedemann, 1819 (Diptera: Calliphoridae or Tachinidae) with a solution to a nomenclatural problem. *Zootaxa* **3957(4)**: 467-479.



- Roháček, J. 2014. The identity and family affiliation of *Scelomyza hirticornis* (Diptera: Opomyzidae, Anthomyzidae), with a new checklist of Afrotropical Anthomyzidae Acta Entomologica Musei Nationalis Pragae **54(1)**: 383-398.
- Roháček, J. 2014. *Reliquantha eocena* sp. nov., first tertiary representative of an extant genus of Anthomyzidae (Diptera) Acta Entomologica Musei Nationalis Pragae **54(2)**: 773-784.
- Rotheray, G.E. 2014. Development sites, feeding modes and early stages of seven European *Palloptera* species (Diptera, Pallopteridae). Zootaxa **3900(1)**: 50-76.
- Runyon, J.B. and Hurley, R.L. 2015. A revision of the Nearctic species of *Liancalus* Loew (Diptera, Dolichopodidae). ZooKeys **483**: 97-147.
- Ruo-Si, L., Meng-Qing, W. and Yang, D. 2015. *Chrysotus* Meigen (Diptera: Dolichopodidae) from Shanxi, China, with descriptions of two new species. Zoological Systematics **40(1)**: 86-92.
- Saad, A., Kittelmann, S. and McGregor, A.P. 2015. From shavenbaby to the naked valley: trichome formation as a model for evolutionary developmental biology. Evolution & Development **17(1)**: 120-126.
- Samad, K. and Kazeraniz, F. 2014. Contribution to the knowledge of thick-headed flies (Dip.; Conopidae) of Iran II: Myopinae, Sicinae & Zodioninae. Biharean Biologist **8(2)**: 75-82.
- Samoh, A., Boonrotpong, S. and Grootaert, P. 2015. *Ngirhaphium* Evenhuis & Grootaert from southern Thailand (Diptera: Dolichopodidae) with the description of a new species. Zootaxa **3946(1)**: 125-132.
- Sarvasova, A., Kocisova, A., Halan, M., Delecolle, J.-C. and Mathieu, B. 2014. Morphological and molecular analysis of the genus *Culicoides* (Diptera: Ceratopogonidae) in Slovakia with five new records. Zootaxa **3872(5)**: 541-560.
- Schutze, M.K., Aketarawong, N., Amornsak, W., Armstrong, K.F., Augustinos, A.A., Barr, N., Bo, W., Bourtzis, K., Boykin, L.M., Caceres, C. and others. 2015. Synonymization of key pest species within the *Bactrocera dorsalis* species complex (Diptera: Tephritidae): taxonomic changes based on a review of 20 years of integrative morphological, molecular, cytogenetic, behavioural and chemoecological data. Systematic Entomology **40(2)**: 456-471. doi:10.1111/syen.12113.
- Schutze, M.K., Mahmood, K., Pavasovic, A., Bo, W., Newman, J., Clarke, A.R., Krosch, M.N. and Cameron, S.L. 2015. One and the same: integrative taxonomic evidence that *Bactrocera invadens* (Diptera: Tephritidae) is the same species as the Oriental fruit fly *Bactrocera dorsalis*. Systematic Entomology **40(2)**: 472-486. doi:10.1111/syen.12114.
- Shah, D.N., Domisch, S., Pauls, S.U., Haase, P. and Jaehnig Sonja, C. 2014. Current and future latitudinal gradients in stream macroinvertebrate richness across North America. Freshwater Science **33(4)**: 1136-1147.
- Shi, G.F., Shih, C.K. and Ren, D. 2015. A new genus with two new species of mesosciophilids from the Middle Jurassic of China (Diptera: Nematocera: Mesosciophilidae). Journal of Natural History **49(19-20)**: 1147-1158. doi:10.1080/00222933.2014.951085.
- Shi, L. and Ding, Y. 2014. Supplements to species groups of the subgenus *Homoneura* in China (Diptera: Lauxaniidae: Homoneura), with descriptions of twenty new species. Zootaxa **3890(1)**: 1-117.
- Shi, L. and Yang, D. 2014. Three new species of subgenus *frendelia* (Diptera: Lauxaniidae: *Minnettia*) in southern China, with a key to known species worldwide. Florida Entomologist **97(4)**: 1511-1528.
- Shih, C.K., Dong, F., Kania, I., Liu, L.X., Krzeminski, W. and Ren, D. 2015. A new species of Tipulidae (Diptera) from the Lower Cretaceous Yixian formation of Liaoning, China - Evolutionary implications. Cretaceous Research **54**: 98-105. doi:10.1016/j.cretres.2014.12.009.
- Shima, H. 2015. *Melastrongygaster*, a new genus of the tribe Strongygastrini (Diptera: Tachinidae), with five new species from Asia. Zootaxa **3904(3)**: 427-445.

- Silva, F.L., Ekrem, T. and Fonseca-Gessner, A.A. 2015. Out of South America: phylogeny of non-biting midges in the genus *Labrundinia* suggests multiple dispersal events to Central and North America. *Zoologica Scripta* **44(1)**: 59-71. doi:10.1111/zsc.12089.
- Singh, S.K., David, K.J., Kumar, D. and Ramamurthy, V.V. 2015. A new species of *Magnimyiolia* Shiraki (Diptera: Tephritidae: Trypetinae) and new records of Acanthonevrini from India. *Zootaxa* **3949(1)**: 129-134.
- Siri, A. and Donato, M. 2015. Phylogenetic analysis of the tribe Macropelopiini (Chironomidae: Tanypodinae): adjusting homoplasies. *Zoological Journal of the Linnean Society* **174(1)**: 74-92. doi:10.1111/zoj.12228.
- Siri, A. and Yngve, B. 2014. Cladistic analysis of *Rheochlus* and related genera, with description of a new species (Diptera: Chironomidae: Podonominae) *Acta Entomologica Musei Nationalis Pragae* **54(1)**: 361-375.
- Sivaramakrishnan, K.G., Janarthanan, S., Selvakumar, C. and Arumugam, M. 2014. Aquatic insect conservation: a molecular genetic approach. *Conservation Genetics Resources* **6(4)**: 849-855.
- Ssymank, A. and Mengual, X. 2014. *Paragus caligneus* sp. nov., a new Afrotropical species of flower fly (Diptera: Syrphidae) *Acta Entomologica Musei Nationalis Pragae* **54(2)**: 759-772.
- Standfuss, K., Dils, J. and Standfuss, L. 2015. Bee flies (Diptera: Bombyliidae) of the olive tree zone of southeast Thessaly/Greece.]. *Entomofauna* **36(19)**: 237-244.
- Starý, J. 2014. Two new species of *Austrolimnophila* from the Mediterranean (Diptera: Limoniidae) *Acta Entomologica Musei Nationalis Pragae* **54(1)**: 355-360.
- Stucky, B.J. 2015. Infection behavior, life history, and host parasitism rates of *Emblemasoma erro* (Diptera: Sarcophagidae), an acoustically hunting parasitoid of the cicada *Tibicen dorsatus* (Hemiptera: Cicadidae). *Zoological Studies* **54**: 17. doi:10.1186/s40555-015-0105-z.
- Szadziewski, R., Giika, W. and Urbanek, A. 2015. A blood sucking biting midge from Upper Cretaceous Burmese amber with a key to the determination of fossil species in the relictual genus *Leptoconops* Skuse (Diptera: Ceratopogonidae). *Cretaceous Research* **54**: 255-259. doi:10.1016/j.cretres.2014.12.013.
- Szadziewski, R., Ross, A. and Gilka, W. 2015. Further records of biting midges (Diptera: Ceratopogonidae) from Upper Cretaceous Burmese amber (Myanmar). *Cretaceous Research* **52(B)**: 556-561.
- Tang, C., Zhang, L. and Ding, Y. 2014. New species of *Hercostomus* baishanzuensis group from Tibet (Diptera: Dolichopodidae, Dolichopodinae). *Zootaxa* **3881(6)**: 549-562.
- Tang, C.F., Wang, B.H. and Yang, D. 2015. New species of *Medetera* (Diptera: Dolichopodidae, Medeterinae) from Tibet. *Zootaxa* **3946(3)**: 427-435.
- Tang, H.-Q., Cranston, P.S., Jian-Gang, Z., Chan-Wa, L., Kai-Chin, W. and Li, Z.-Q. 2014. The immature stages of *Polypedilum* (*Pentapedilum*) *nodosum* (Johannsen) and *Polypedilum* (*Tripodura*) *masudai* (Tokunaga) (Diptera, Chironomidae, Chironominae). *Zootaxa* **3893(3)**: 416-428.
- Tantawi Tarek, I. and Whitworth, T. 2014. First record of *Lucilia bufonivora* Moniez, 1876 (Diptera: Calliphoridae) from North America and key to North American species of the *L. bufonivora* species group. *Zootaxa* **3881(2)**: 101-124.
- Tkoč, M., Pecharová, M. and Ježek, J. 2014. Catalogue of the type specimens of Diptera deposited in the Department of Entomology, National Museum, Prague, Czech Republic. Moth flies (Psychodidae). *Acta Entomologica Musei Nationalis Pragae* **54(2)**: 789-837.
- Tkoč, M. and Rozkošný, R. 2014. New synonymy of *Oplodontha minuta* (Diptera: Stratiomyidae) with its first record from Socotra Island *Acta Entomologica Musei Nationalis Pragae* **54 supplement**: 429-439.

- Trivinho-Strixino, S. and Pepinelli, M. 2015. A systematic study on *Endotribelos* Grodhaus (Diptera: Chironomidae) from Brazil including DNA barcoding to link males and females. *Zootaxa* **3936(1)**: 1-41.
- Uramoto, K., Zucchi, R.A. and Norrbom, A.L. 2015. Redescription of three species of *Anastrepha* (Diptera, Tephritidae) rediscovered in Brazil, with the establishment of a new synonym. *Zootaxa* **3911(3)**: 411-423.
- Urso-Guimaraes Maria, V., Pelaez-Rodriguez, M. and Trivinho-Strixino, S. 2014. New species of *Lopesia* (Diptera, Cecidomyiidae) associated with *Eichhornia azurea* (Pontederiaceae) from Brazil. *Iheringia Serie Zoologia* **104(4)**: 478-483.
- van Herk, W.G., Vernon, R.S., Cronin, E.M.L. & Gaimari, S.D. 2015. Predation of *Thereva nobilitata* (Fabricius) (Diptera: Therevidae) on *Agriotes obscurus* L. (Coleoptera: Elateridae). *Journal of Applied Entomology* **139(1)**: 154-157.
- Verdeny-Vilalta, O., Aluja, M. and Casas, J. 2015. Relative roles of resource stimulus and vegetation architecture on the paths of flies foraging for fruit. *Oikos* **124(3)**: 337-346.
- Verves, Y., Radchenko, V. and Khrokalo, L. 2015. A review of species of subtribe Apodacrina Rohdendorf, 1967 with description of a new species of *Apodacra* Macquart, 1854 from Turkey (Insecta: Diptera: Sarcophagidae: Miltogramminae: Miltogrammini). *Turkish Journal of Zoology* **39(2)**: 263-278. doi:10.3906/zoo-1312-14.
- Vieira, R., Albertino, R.J. and Fisher, E.M. 2014. Two new species of *Martintella* Artigas, 1996 (Diptera, Asilidae, Asilinae) from Costa Rica. *Zootaxa* **3878(5)**: 451-461.
- Vilkamaa, P., Hippa, H. and Mohrig, W. 2014. The genus *Epidapus* Haliday (Diptera, Sciaridae) in New Caledonia, with the description of four new species. *Zootaxa* **3900(3)**: 429-436.
- Virgilio, M., Jordaens, K., Verwimp, C., White, I.M. and De Meyer, M. 2015. Higher phylogeny of frugivorous flies (Diptera, Tephritidae, Dacini): Localised partition conflicts and a novel generic classification. *Molecular Phylogenetics and Evolution* **85**: 171-179. doi:10.1016/j.ympev.2015.01.007.
- Wang, N., Wang, B.H. and Yang, D. 2015. Two new species of the genus *Diostracus* Loew from Tibet, with a key to the Himalayan fauna (Diptera, Dolichopodidae). *ZooKeys*(**488**): 91-104. doi:10.3897/zookeys.488.8919.
- Wang, N., Wang, B.H. and Yang, D. 2015. *Wiedemannia* (Diptera: Empididae) newly found in China with description of a new species from Tibet. *Florida Entomologist* **98(1)**: 44-46.
- Wang, Q., Zhang, C.T. and Wang, X.H. 2015. Review of the genus *Parerigone* Brauer (Diptera: Tachinidae) with five new species from China. *Zootaxa* **3919(3)**: 457-478. doi:10.11646/zootaxa.3919.3.2.
- Wendt, L.D. and Ale-Rocha, R. 2015. Antlered richardiid flies: new species of *Richardia* (Tephritoidea: Richardiidae) with antler-like genal processes. *Entomological Science* **18(2)**: 153-166. doi:10.1111/ens.12122.
- Wesner Jeff, S., Meyers, P., Billman, E.J. and Belk, M.C. 2015. Habitat selection and consumption across a landscape of multiple predators. *Ecology and Evolution* **5(1)**: 121-129.
- Winkler, I.S., Blaschke, J.D., Davis, D.J., Stireman, J.O. III, O'Hara, J.E., Cerretti, P. and Moulton, J.K. 2015. Explosive radiation or uninformative genes? Origin and early diversification of tachinid flies (Diptera: Tachinidae). *Molecular Phylogenetics and Evolution* **88**: 38-54.
- Wong, E.S., Dahlem, G.A., Stamper, T.I. and DeBry, R.W. 2015. Discordance between morphological species identification and mtDNA phylogeny in the flesh fly genus *Ravinia* (Diptera : Sarcophagidae). *Invertebrate Systematics* **29(1)**: 1-11. doi:10.1071/is14018.
- Wong, W.H., Tay, Y.C., Puniamoorthy, J., Balke, M., Cranston, P.S. and Meier, R. 2014. 'Direct PCR' optimization yields a rapid, cost-effective, nondestructive and efficient method for obtaining DNA barcodes without DNA extraction. *Molecular Ecology Resources* **14(6)**: 1271-1280. doi:10.1111/1755-0998.12275.

- Xi, Y.Q. and Yang, D. 2014. *Neophyllomyza* (Diptera: Milichiidae) recorded from China with descriptions of three new species. *Florida Entomologist* **97(4)**: 1640-1647.
- Ya'cob, Z., Takaoka, H. and Sofian-Azirun, M. 2014. *Simulium ledangense*, a new species of the *Simulium feuerborni* species-group of the subgenus *Nevermannia* (Diptera: Simuliidae) from Mount Ledang, Peninsular Malaysia. *Zootaxa* **3881(3)**: 228-236.
- Yamaguchi, C. and Lamas, C.J.E. 2014. The discovery of a second species of *Mallophthiria* Edwards (Diptera, Bombyliidae, Crocidiinae) from Chile. *Zootaxa* **3900(1)**: 141-149.
- Yan, C.C., Yan, J., Jiang, L., Guo, Q., Liu, T., Ge, X.Y., Wang, X.H. and Pan, B.P. 2015. *Parachironomus* Lenz from China and Japan (Diptera, Chironomidae). *ZooKeys*(**494**): 31-50. doi:10.3897/zookeys.494.6837.
- Zakrzewska, M. and Gilka, W. 2015. The Tanytarsini (Diptera: Chironomidae) in the collection of the Museum of Amber Inclusions, University of Gdansk. *Zootaxa* **3946(3)**: 347-360.
- Zhang, C., Shima, H., Wang, Q. and Tschorsnig, H.-P. 2015. A review of *Billaea* Robineau-Desvoidy of the eastern Palearctic and Oriental regions (Diptera: Tachinidae). *Zootaxa* **3949(1)**: 1-40.
- Zhang, R.L., Song, C., Wang, L.Q. and Wang, X.H. 2015. Two new species of the *acifer* species group of *Polypedilum* subgenus *Tripodura* Townes from China (Diptera: Chironomidae). *Zootaxa* **3918(4)**: 571-578. doi:10.11646/zootaxa.3918.4.6.
- Zhang, X., Li, Y. and Yang, D. 2015. A review of the genus *Elephantomyia* Osten Sacken from China, with descriptions of two new species (Diptera, Limoniidae). *Zootaxa* **3919(3)**: 553-572.
- Zhang, Y. and Chen, H.-W. 2015. Four new species of the *Stegana ornatipes* species group (Diptera: Drosophilidae) from Yunnan, China, with DNA barcoding information. *Zootaxa* **3095(1)**: 131-137.

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

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

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