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Welcome to the latest issue of *Fly Times*! Sorry it's late of course - but May is better than June for an April newletter! Being in Vietnam for most of March didn't help! I thank everyone for sending in such interesting articles – I hope you all enjoy reading it as much as I enjoyed putting it together! Please let me encourage all of you to consider contributing articles that may be of interest to the Diptera community. We all greatly appreciate your contributions! *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, and to report on or announce meetings relevant to the community. This is also a great place to report on your interesting (and hopefully fruitful) collecting activities!

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

The *Directory of North American Dipterists* is constantly being updated and is currently available at the above website. Please check your current entry and send all corrections to Jim O'Hara. There is a form for this on the last page of the newsletter.

Issue No. 49 of the *Fly Times* will appear next October. If possible, please send your contributions by email to the editor at stephen.gaimari@cdfa.ca.gov. All contributors for the next *Fly Times* should aim for 10 October 2012 – don't worry – I'll send a reminder! And articles after 10 October are OK too!

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NEWS

Comments from the Editor

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Again I apologize for this issue being a couple of weeks late. Not my plan to make it a habit! In any case, it is for similar reasons as the last issue – Martin Hauser and I were collecting in Vietnam through the end of March (collecting was better in Borneo, but we got good stuff in Vietnam too!). I am of course very pleased with the terrific articles waiting for me, and submitted during April (and I even got a few stragglers in May). Again, I have a number of my fly photographs to present in the "Flies are Amazing" section, but I never intended for this to be a showcase of my own stuff! Using mine is just a default when I don't get any submissions! That said, I hope some of you will take the time to send me photographs for this section – I know we all like good photos of flies! Perhaps I'll start specifically soliciting some of you – so beware. In any case, I hope you all like the great array of articles, and I heartily thank those of you who submitted! Thanks for your patience, and I hope it was worth the wait!

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Dome Light Update

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Simple and effective dome lights (using soft, whitish light reflected from inside hemispherical domes placed above LED ring lights) have proved popular with entomologists for use in digital photography (Kerr, et al 2008 – see http://www.cdfa.ca.gov/plant/ppd/entomology/dome.html; for original build information see http://www.cdfa.ca.gov/plant/ppd/entomology/Dome/kd-200.html). One type of dome light, using a high quality but relatively inexpensive LED ring light manufactured in China, has been found to be especially useful. This particular dome light is discussed here, and tips for construction and improving lighting performance are given. (Refer to the above citation for original build information; mainly new information is presented below.)

Ring light: The one now recommended for dome light construction is the “144 LED Microscope Camera Ring Light (4 zone control 61mm max diam)” – distributed by Gain Express Holdings Ltd., of Hong Kong; the light control unit is labeled “YK-B144T”; see: http://www.gainexpress.com/product_info.php?products_id=361&osCsid=54bh5n07epbj5gd84phi2t0fr6. It is widely available on eBay, with a typical price of about $90 US (plus $18 shipping). Mail delivery from China is fairly quick and service from Gain Express has been dependable. (NOTE: we have no commercial arrangement with this company – other than as satisfied customers.) This particular ring light is favored because it offers: 1) high-quality construction; 2) large interior ‘arena’ of 61mm

(the central ring area – originally designed for insertion on cylindrical camera lenses or microscopes but used by us for an insect pinning stage); 3) low profile in build (especially helpful with the low working distances that some stereo microscopes have); 4) multiple electronic controls (full dimming capability and 4 independent zones for lighting 36 LEDs each); 5) universal voltage and AC adaptability. This particular type of ring light is an improved version of the light discussed by us in 2008 (Gain Express "KD-200") and, most importantly, it has the same external diameter, which means it uses the exact same type of dome as before.

Fig. 1: 144 LED ring light and controls

Dome: the original plastic dome is still recommended for use ("H_2O on the GO Jr." 1L/32 oz. size). This type of dome is designed to sit above the LEDs, utilizing 4 (or 6) machine screws, which rest on top of the plastic cover. I suggest using nylon screws if possible, as these will help to prevent any scratching of the plastic cover. It is not easy to keep these screws level, as you need to insert them through the rim of the dome, then add "5 min. epoxy" at the inside base of each screw. If they are not fixed level, with all of them in the same plane, the dome will always wobble a bit; not a serious problem but still irritating. The technique I recommend is the following: insert two opposite screws at the same time and glue them; quickly 'fix' (clip, etc.) them to a straight, flat, narrow object that is ca. 90mm (3 ½") long, which will span the distance between screws, and allow them to set and dry in-line; repeat this with each pair of screws (allowing 10 – 20 minutes drying time for each pair). A narrow, straight tube (or several telescoping tubes together) is also a possible means of keeping the screws parallel. These plastic water bottles are still readily available at Wall Mart, also at Kmart, Target and other major retail stores, as well as on-line; the manufacturer is Arrow Plastic Mfg. Co., but this firm does not offer retail sales directly to the public.

New dome type: another source of good dome material is available at Michaels craft stores during Christmas season. These are 100mm (4") diameter, clear plastic spheres, designed to be painted or fixed-up as ornaments. When cut in half (into a hemisphere), they fit *perfectly* on the edge of the black metal rim of the 144 LED ring light – making a great dome cover that does not need screws for support. They can be spray painted just as with the original dome material. (The plastic seems to be very similar, and is easy to cut with scissors along the midline; note, however, that the 'pole' ends are much thicker, and you will need to drill, saw or 'Dremel' the hole for the 'oculus'.) I have not yet found a source for these plastic Christmas ornament spheres other than Michaels.

Fig. 2: Xmas sphere, and finished dome

Oculus (photography hole): removing the neck of the bottle or ornament leaves a 25mm (1") hole. I have found that a larger hole (ca. 35mm to 40mm) is better: this allows larger insects to be photographed, and provides additional space to position the camera lens directly above the specimen. There is a trade-off though: a large oculus produces less light dorsally (less light reflects downward from the dome interior). This can result in a darker dorsal surface of the specimen or – in the case of insects with shiny cuticles – a 'black hole' left on top of the specimen in the photo (which is a direct reflection of the oculus). This problem is best countered by using reflective discs.

Reflective discs: I now strongly recommend the use of ca. 60mm diameter discs, which are then placed on top of the dome with a 35-40mm oculus (the fact that this flat part will disrupt the perfect hemisphere of the dome interior does not seem to be important for light distribution). These discs are spray-painted 'flat white' on one side (same as the inside of the dome), with varying sizes of smaller oculus holes in the center – a different size for each disc. This allows you to select the correct-sized disc for a particular specimen, so the optimum amount of light can be reflected back onto the specimen (small specimen = small oculus). I suggest using the smallest oculus possible – one just large enough to eliminate vignetting in the corners of the image. A little trial and error will quickly demonstrate how effective proper oculus choice is: placing a 5mm fly beneath a 35mm oculus will give you less light (often insufficient) than a 5mm fly under a 5-10mm oculus. The greater amount of white reflective surface will produce more light (and lessen – but not completely eliminate – the black hole in a photo). Another advantage with using discs is that their smaller oculi have freedom to be placed directly over the specimen – using the larger dome oculus space beneath to advantage.

I have tried various materials for making these discs: plastics of different thickness, cardboard, even thin metal. Anything that will hold flat white spray enamel is fine. I use a thin (<0.5mm), flexible black plastic (the kind used for storing some postage stamp collections); only one side needs painting! Manila file folder material works fine too. I have a set of 12 or so, with holes that range from 6mm to 30mm. I originally used a thicker plastic (2mm thick) but found that these sometimes reduced working distance above the dome too much (see further discussion below). "X-acto" blade knives and a hole template, chisels, or hole punches can be used for cutting holes, even scissors for the larger holes.

Fig. 3: Pinning foam, pinning post and base, diffuser ring and reflective discs

Pinning substrate: I now prefer to use 'plastazote' poly foam for a pinning substrate; it lasts about forever – but I wish it came in a nice 'neutral photo gray' color (my preferred background color). The only gray foam I have been able to find (not even a true photo gray) is soft, and this is quickly damaged from pinning holes. So, I spray paint one side of the plastazote with gray 'primer' enamel (also not quite photo gray; still searching for the right gray spray enamel…). As poly foam does not take to painting very well at all (!), I need to spray the paint on heavily, in several coats, and squash the paint into the little air holes in the foam as much as possible (using a paint roller to assist this). This will produce a gray foam that holds the color fairly well – even after lots of pinning. The other side of the plastazote is the original white – so it can be flipped over if a white background is desired. (Note: when shooting a large subject at low magnification, you may achieve enough depth of field to show some texture of the

poly foam bottom in the photo.) A thick poly plastic (2mm X 60mm) disc is used for the bottom of the pinning arena, which holds the more flexible foam in position. This also serves as the base to which the pinning post is attached.

Pinning post: this is made from poly foam glued to a rigid acrylic plastic back (the latter originally sold as a hook for hanging items). This sturdy acrylic item is 10mm wide, about 3mm thick, and has a flat, T-shaped base, good for attaching to the poly base; it is sold by Taps Plastic Company (many stores in the w. U.S., at least). The bent top of the acrylic hook is cut-off, as is one leg of the T at the bottom, leaving an L-shaped piece ca. 40mm tall. A 40mm X 10mm piece of poly foam is attached to the 'inside' (above the remaining part of the T base) of the acrylic post, using 5 min. epoxy. (The key to a good attachment with these plastics is to heavily scratch the surface of the acrylic before gluing the foam; the foam needs to be firmly pressed to the acrylic until dry.) The piece of foam is offset, so one end is located 10mm above the top of the acrylic. The bottom of the acrylic is drilled, then attached to the edge of the poly base with a 'pop' rivet (a small bolt and nut could be used instead). Fixing the post firmly to the base makes for a sturdy surface for horizontal pinned specimens.

Gray color (or white) modeling clay is also good for pinning, and is often substituted for the foam. (Sometimes a piece of clay is essential for inserting pins upside-down for photography. The clay can be placed on a larger card or plastic disc – so it won't mess-up the surface of the foam.)

Diffuser: This is a new addition to my dome lights – designed to prevent direct illumination from the LEDs onto the specimen. When in place (it fits around the pinning arena, just inside the inner metal wall of the ring light), it allows only indirect light – reflected from the interior of the dome – to illuminate the object being photographed. (I have noticed that a thin, bright line of light may show along the bottom edge of some photos, which I believe is caused by this direct light; the diffuser eliminates this bright line.) The ring is made from a semi-opaque ('natural') poly bottle or jar; dimensions are 60mm ~ 62mm diameter, 25mm height. It may also be made from a long strip of flexible natural (semi-opaque) poly or other material 25mm high, with the ends stapled together to form a ca. 62mm diameter ring. Experiment to achieve a proper balance – where bright, diffuse light is passed through but not direct light shine.

Fig. 4: Finished dome light and domes

Photography with the dome light.
White balance of dome light: this seems quite good as is, rarely needing adjustment from auto setting of the camera. Color temperature of the LEDs is listed at 6400K; the actual color temp. of the light reflected from the flat white color of enamel paint inside the dome is probably warmer than this.

Working distance: the interior height of the dome spans about 50mm (oculus level to top of foam at base), and the optimum illumination area seems to be at about 20mm to 30mm below the oculus. This means that a minimum working distance – for the proper focus between camera lens or microscope objective to the specimen inside the dome – is about 22mm; therefore, 25mm (1") is the practical

minimum working distance for comfortable focusing on a specimen. This distance is an important figure to keep in mind when selecting lenses for photographic work when using a dome light.

Stereoscopic microscopes: dome lights work well beneath stereo scopes, almost always providing superior light for photography than other kind of lighting (fiber optic lights, conventional ring lights, incandescent and halogen lights, etc.). A variety of camera types can be fitted to trinocular ports or to eyepieces, and these will produce good images. The compact size and light weight of these dome lights make them excellent choices for using when traveling to museums and collections – where they will provide you with very dependable lighting for photographing specimens.

Photo stands: this is where dome lights really excel – on photo stands that are setup for image stacking – in order to produce extended depth of field images. With these setups, a microscope is unnecessary and the images are produced solely with digital cameras and lenses. With photo stacking, numerous images are needed (sometimes hundreds), and a dome light is perfect for providing continuous, stable lighting of the same exposure setting. Flash photography, for example, will occasionally produce improperly exposed images, and these need to be corrected immediately – in the proper sequence – or the final stacked image will have some off-color layers. Flash photography is also relatively expensive and can be inconvenient (either needing a constant exchange of batteries or pricey studio-lighting flash units).

Fig. 5: Photo stand with dome light

Example of photo stand: most of my 'dome lighting' these days is done with a photo stand for purposes of image stacking (see. Fig. 5). This particular setup uses a "Canon EOS 40D" camera, mounted to a sturdy focusing rack that is attached to the adjustable arm of an Olympus photo stand for microscopes. The dome light rests on a movable table attached to a "Newport 462 linear XYZ stage." (Also present are flexible arms holding the "Twin Lites" of a Canon "24EX Macro Flash" – which are seldom used of late.) The photo stand holds the camera very steady at varying positions and heights, while the linear stage is capable of adjustments as small as .002mm. The Canon EOS system is excellent for photo stacking because of an ability to take vibration-free images, and because of "Live View" – where the camera can be tethered to a computer by a USB cable, and all image shooting is then done remotely from the computer monitor, using a mouse. One key benefit of my photo stand setup is that vibration, which is a major cause of problems in high resolution photography, is reduced to an absolute minimum. (Most of the hardware shown in Fig. 5 was purchased

in used condition on eBay, at a fraction of the original retail price.) The software I prefer to use for image stacking is "ZereneStacker."

Camera lenses: Canon DSLR cameras have the "MP-E 65mm Macro Photo Lens" available for use, which is capable of 1-5x life size imaging. This is the lens I use most often for photo stacking; at 5x the working distance is 41mm – perfect for use with the dome light. The MP-E is an expensive lens and requires a Canon camera for use. Of course, a wide variety of other types of 'macro' lenses (capable of >1x magnification) are available that also offer a 25mm or more working distance; some of these are quite affordable, especially at used prices. Short focal length lenses (<70mm), especially those designed to be used on bellows or extension tubes, were produced by most camera and optical firms, with the following manufacturers – Canon, Leitz, Minolta, Nikon, Olympus, and Zeiss – all contributing suitable lenses of the very highest quality. The lens shown in Fig. 5 is an Olympus "OM Zuiko Auto-Macro 38mm/2.8" and is attached to my Canon camera via an Olympus "Telescopic Auto Tube 65-116mm." When this lens is used in the configuration shown, it is capable of between ca. 3.3x to 4.6x magnification, at a working distance of 42mm. With additional extension, the lens can be pushed to a higher magnification but then the resolution will decrease, due to a phenomenon termed 'diffraction.'

Enlarger lenses, of 28 to about 50mm focal length, also work very well on photo stands; El-Nikkor (from Nikon), Rodenstock and Schneider-Kreuz all produce excellent enlarger lenses – which work especially well when reversed on bellows or extension tubes. The "El-Nikkor 50mm/2.8" is inexpensive, readily available on eBay, and also is highly regarded for photo stacking.

Microscope objectives are the lenses with have the highest resolving power, and offer the greatest resolution at high magnification. However, it is difficult to find objectives with a working distance high enough (>25mm) for dome light use. One manufacturer, Mitutoyo, does offer outstanding objectives of 5x, 10x and 20x that have >30mm working distance. These are 'infinity' lenses of the Mitutoyo "M Plan Apo" series, which require special 'tube lens' setups for proper use (needing an intermediate, second objective lens); unfortunately these long working distance Mitutoyo objective lenses are expensive.

Expert advice: for additional information on higher magnification macro photography, image stacking, camera equipment, etc., and also for viewing great photos, I highly recommend frequent browsing through the various forums in the "Photomacrography" website at http://www.photomacrography.net. There are many hundreds of informative contributions and discussions stored on this still-active site, and they provide a wealth of information on these subjects.

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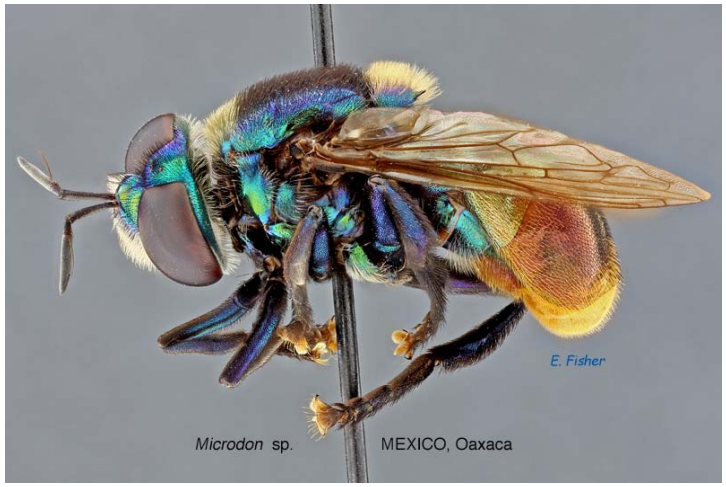
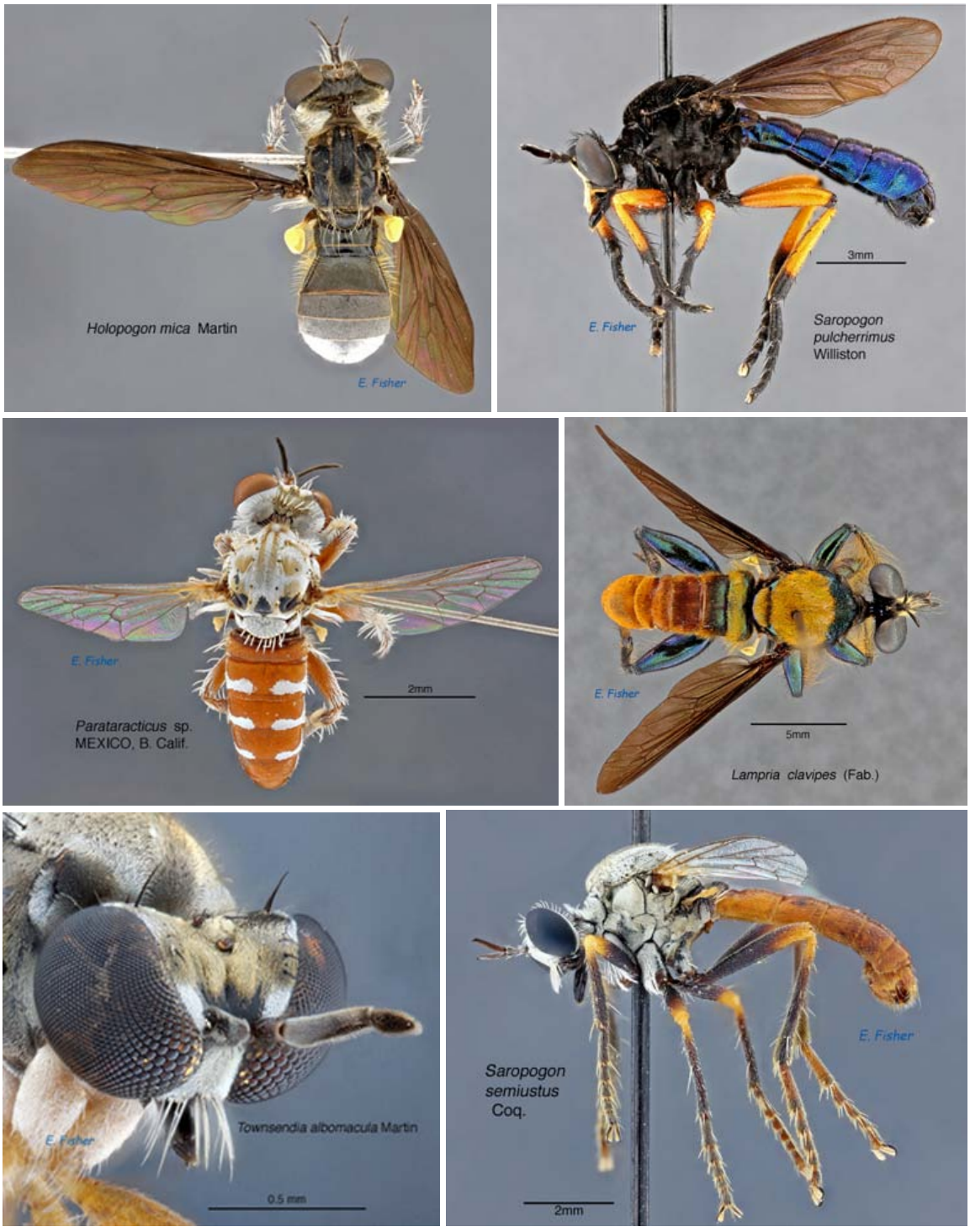
Examples of flies photographed with Dome Light illumination




Holopogon mica Martin
E. Fisher
3mm
E. Fisher
Saropogon
pulcherrimus
Williston
E. Fisher
2mm
Parataracticus sp.
MEXICO, B. Calif.
E. Fisher
5mm
Lampria clavipes (Fab.)
E. Fisher
Townsendia albomacula Martin
0.5 mm
Saropogon
semiustus
Coq.
E. Fisher
2mm

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Color restoration of Fly Eyes

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As photographers of insects, we have learned that to capture the vivid color in the eyes of such flies as Tabanidae and Dolichopodidae we must photograph them soon after collection because the eyes start to loose their luster shortly after the insect dies. The change in eye color can be delayed by freezing the insect, but the degradation starts immediately and accelerates once the insect has thawed. The distinctive color pattern of tabanid eyes, transverse stripes in many Tabaninae and intricate curved patterns in *Chrysops* spp., are lost in dried specimens (compare face images in Thomas & Marshall 2009; Thomas 2011).

Osten Sacken (1876) appears to be the first to comment on restoring the coloration of the eyes in *Tabanus* (includes *Hybomitra*): "*can usually be revived in dry specimens by putting them on moistened sand for a few hours*." He also used the eye color and pattern to "*plainly show the connection which exists between the coloring of the eye and the relationship of the species*" (Osten Sacken 1876). Little emphasis has been placed on eye color of tabanids since then. Price & Goodwin (1979) reviewed the relevant literature and Fairchild (1983) emphasized both color and pattern in his study of the *Tabanus lineola* complex.

Price & Goodwin (1979) described a technique for reviving both color and pattern in tabanid eyes by submerging a severed head in tap water. Our technique is essentially the same but differs in detail. In all other reports, pattern and colors are descriptive with black-and-white line drawings at best. With the recent advances in digital imaging and computer technologies we can present full color images which allow for objective evaluation of the technique.

The pattern of stripes in the Tabaninae is a useful key character and we suspect that color could be of use if it were possible to restore color to the eyes of dried tabanids. Regardless, we find that an image of a bright-eyed tabanid or dolichopodid is more aesthetically pleasing than the typical images of blank-eyed pinned specimens.

Recently we were asked about reviving the color in dehydrated fly eyes from a collection by re-hydration. We were skeptical but tried some experiments and were pleasantly surprised by the results. Below we describe the very simple process we used for re-hydration and include some before and after photographs to illustrate the results. Generally the original eye color was approximately restored, and the eye color persisted for several hours. The restored color lasted long enough to photograph the specimen and document the eye coloration.

The process was tested on three specimens. The first was a small long legged fly (Dolichopodidae: *Condylostylus* sp.) approximately 4mm in length, the second a larger deer fly (Tabanidae: *Chrysops montanus*), and the third a horse fly *Hybomitra lasiophthalma*. The very simple process is described in Figure 1. It consists of immersing the insect in a slightly warm (35 Deg C) container of water; except that for the horse fly only the severed head was immersed. A tiny bit of dish washing suds was added to the container to help break down the surface tension of the water and improve the wetting of the outside

of the insect. Following immersion, the fly (head) was gently rinsed in clean water and carefully blotted dry with the folded edge of a paper towel. The fly was then immediately photographed. Several additional photographs were taken after the fly was removed in the bath to get an indication of how long the more or less normal eye color would persist.

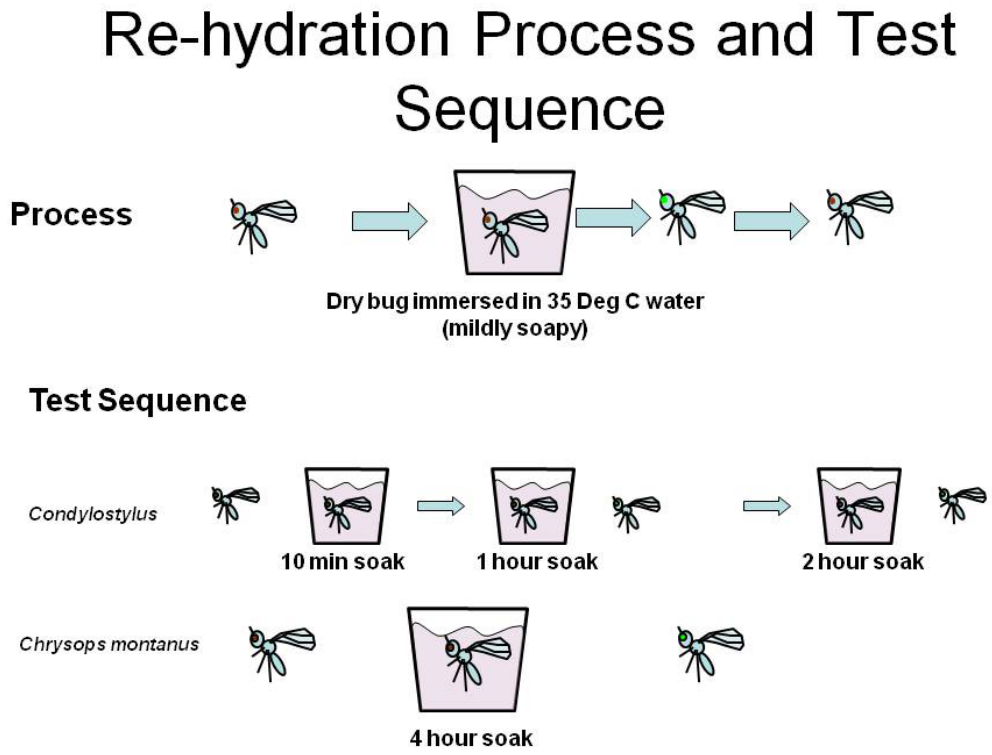


Fig. 1. Re-hydration process and test sequence. One day elapsed between each soak of *Condylostylus.*

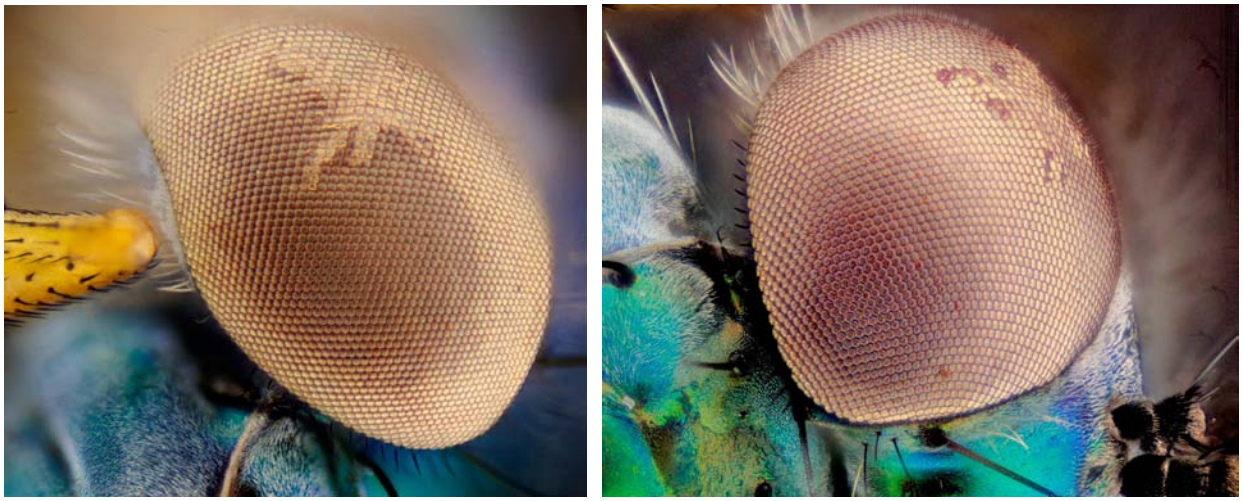
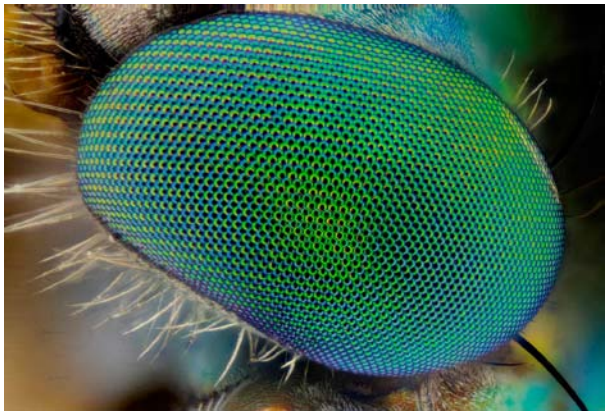


Fig. 2 (left). Dry *Condylostylus* prior to experiments. Fig. 2 (right). After 10 minute soak in warm water.

The small *Condylostylus* was tested first. The specimen was collected and frozen in September 2011, thawed in early February 2012 and photographed several days later as a test subject for a new

photographic illumination setup. After these tests it was set aside and allowed to dry for approximately 6 weeks. The appearance of the fly eye prior to attempting re-hydration is shown in Figure 2, and after a 10 minutes soak in Figure 3 and after a 1 hour soak in Figure 4. The 1 hour soak was quite successful. Figures 4 and 5 illustrate the restoration of the green eye color. Also visible are the subtle stripes often found in Dolichopodidae.



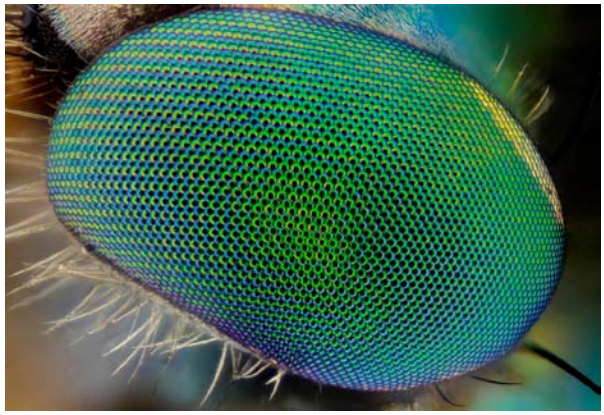


Fig. 3 (left). *Condylostylus* after 1 hour soak in warm soapy water. Fig. 4 (right). One hour after removal from 1 hr soak.

Since it was expected that a larger insect would require longer immersion, the same fly was tested with a 2 hour soak to determine if the longer soak would damage the eye. This test was performed one day after the one hour soak. The fly's eye had started to become dehydrated and the appearance prior to the 2-hour soak is shown in Figure 6. Soaking for an additional 2 hours produced no obvious damage. Again the specimen was rinsed and blotted. Figures 7 and 8 illustrate the appearance after the test. It should be pointed out that the eye started to develop speckles, a possible precursor to mold (?).

Fig. 5. *Condylostylus* prior to 2 hour soak

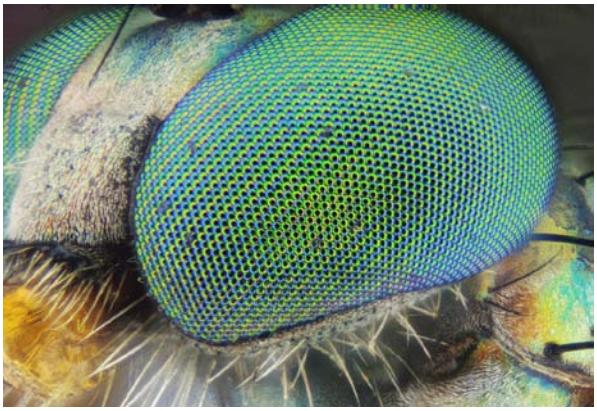


Fig. 6 (right). *Condylostylus* immediately after 2 hour soak. Fig. 7. 45 minutes after 2 hour soak

The larger *Chrysops montanus* was collected in July 2010. After being photographed it was set aside and allowed to dry. The appearance of the fly (stored uncovered on top of a work bench in a dry, humidity controlled basement) prior the re-hydration experiments is shown in Figure 9. The fly was initially soaked in the warm water (35 deg C) with soap suds for two hours. After 2 hours the fly was checked with a hand lens. The green color between the darker bands of the fly's eye had a normal appearance but the darker areas did not look as vivid as with a fresh fly. We decided to continue the soak for some additional time to help restore the color in the brown striped areas. The soak was continued for an additional 2 hours (4 hours total). The fly was then removed from the bath, rinsed, blotted and photographed. The re-hydrated fly is shown in Figures 10, 11 and 12. As can be seen in these photographs, the fly begins to dry out relatively quickly (more quickly than when it was initially collected) and the eye color began to degrade after a few hours.


Fig. 8 (left). *Chrysops montanus* prior to soak. Fig. 9 (right). Immediately after 4 hour soak


Fig. 10 (left). *Chrysops montanus* 1 hour after removal from bath. Fig. 11 (right). 3.5 hours after removal from bath. Colors are disappearing as eye returns to desiccated coloration.

The *Hybomitra lasiophthalma* was collected and pinned on July 5 2009 and photographed April 1 2012 after 4 hours of treatment. The treated head is top and head of a fresh specimen for comparison below (Fig. 13).

A few additional comments:

- The amount of soap added to the bath was minute. The intent was to improve wetting of the insect while not requiring extensive rinsing. We used dishwashing liquid and added the soap by

taking a small golf ball size dollop of suds from the top of a basin of dish washing IN the kitchen sink. The dollop of suds was placed on top of a small (~ 150ml) container of warm water.

- We would recommend testing this technique on a non critical specimen of similar size to the specimen that you desire to re-hydrate.
- While the technique may temporarily restore eye color, it is impossible to say that it restores the original eye color.
- We did not try other solutions or wetting agents. Other processes may work as well or better than the one we tested.

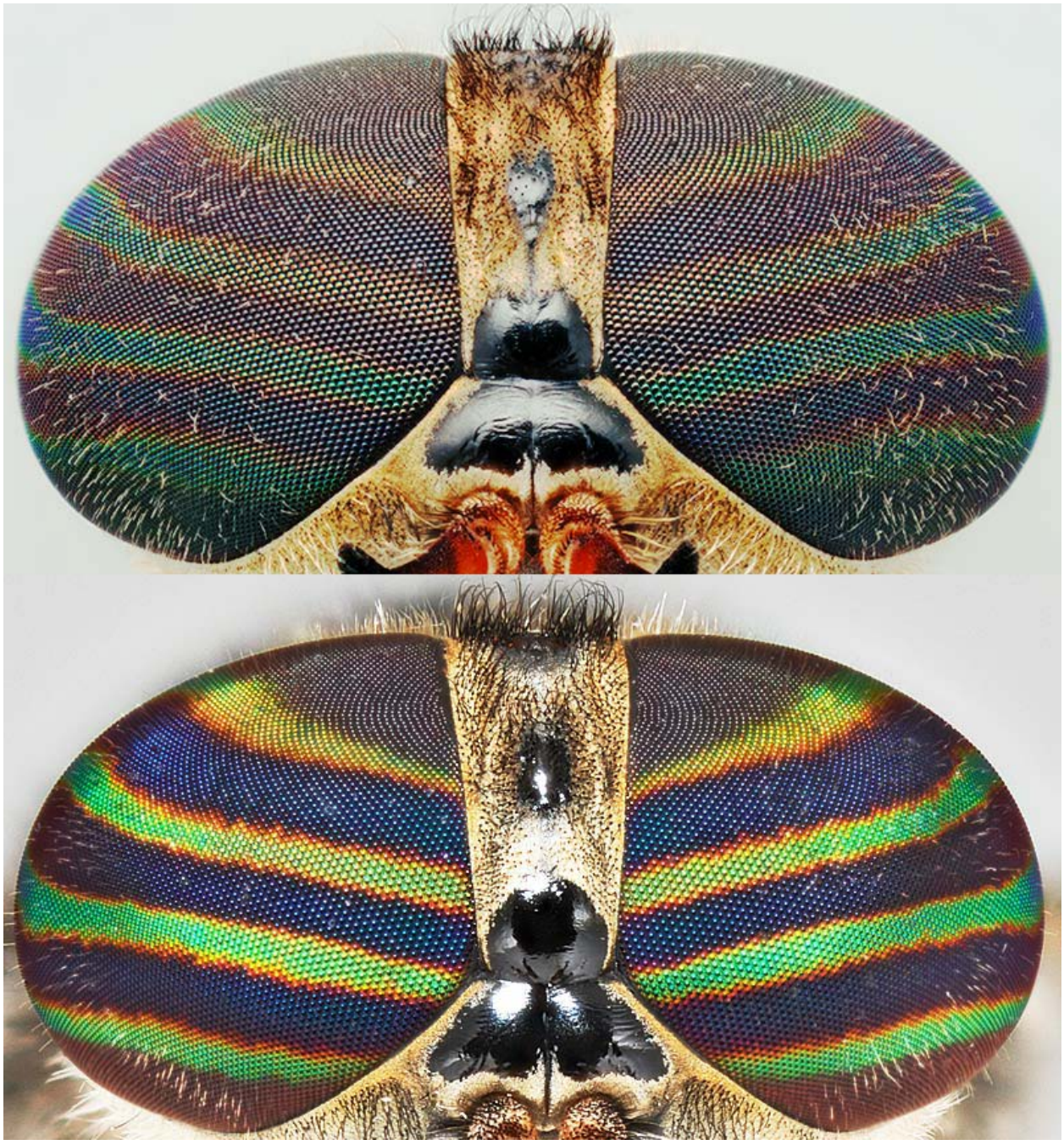


Fig. 13 (top). *Hybomitra lasiophthalma*, treated head. Fig. 14 (bottom). *Hybomitra lasiophthalma*, live.

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Thomas, A. 2011. Tabanidae of Canada, east of the Rocky Mountains 2: a photographic key to the genera and species of Tabaninae (Diptera: Tabanidae) Canadian Journal of Arthropod Identification No.13, 16 February 2011, available online at http://www.biology.ualberta.ca/bsc/ejournal/t_13/t_13.html, doi: 10.3752/cjai2011.13

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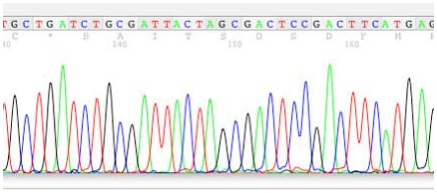
Graduate Research Assistantship (M.Sc.) Available in Entomology at the University of Tennessee-Knoxville

Revisionary Studies of Nearctic Seepage Midges (Diptera: Thaumaleidae)



John K. Moulton[1] & Bradley Sinclair[2]

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205 Ellington Plant Sciences Bldg., The University of Tennessee,
Knoxville, Tennessee 37996-4560, USA; jmoulton@utk.edu

[2] Canadian National Collection of Insects and Ottawa Plant Laboratory – Entomology, CFIA, K.W. Neatby Bldg., C.E.F., 960 Carling Ave.,
Ottawa, ON, Canada KIA OC6; bradley.sinclair@inspection.gc.ca

Project Description: Historically, the Thaumaleidae have been understudied and taxonomically difficult. This project is a collaborative research and training project between the entomology laboratories of the University of Tennessee and Canadian National Collection of Insects. The project will provide new information on the biology, diversity, ecology, and systematics of North American seepage flies, with extensive fieldwork in the western Cordillera. Research will involve description of new species and re-evaluation of species and generic concepts using collection-based specimens, rearing of immature stages, and freshly acquired material. Molecular analysis will include DNA fingerprinting/phylogenetics to discriminate all 21 known species of western Nearctic *Androprosopa* plus testing the validity of this genus with respect to *Thaumalea*.

Start Date: August 2012 or until suitable candidate found. Screening of applicants will begin 15 April 2012. Interested persons should contact John Moulton or Bradley Sinclair.

Stipend: $20,000+ per year for 2 years, with both in- and out-of-state tuition waived and health insurance included.

Qualifications: The successful M.Sc. candidate will have a B.Sc. in biology or a related science. Applicants will be evaluated on the basis of grades, letters of recommendation, GRE scores, resume, and letter of intent. The University of Tennessee is an EEO/AA/Title IX/Section 504/ADA employer.

Environment: The Department of Entomology and Plant Pathology is located on the Agricultural Campus of UT. The PI is housed in the new Plant Biotechnology Building that is equipped with modern equipment for biotechnology research. Knoxville, a city of 180,000, is the economic and cultural center of eastern Tennessee and is consistently ranked as one of the ten most livable cities in the USA. It lies just 40 miles west of The Great Smoky Mountains National Park.

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Bubbling in Flies

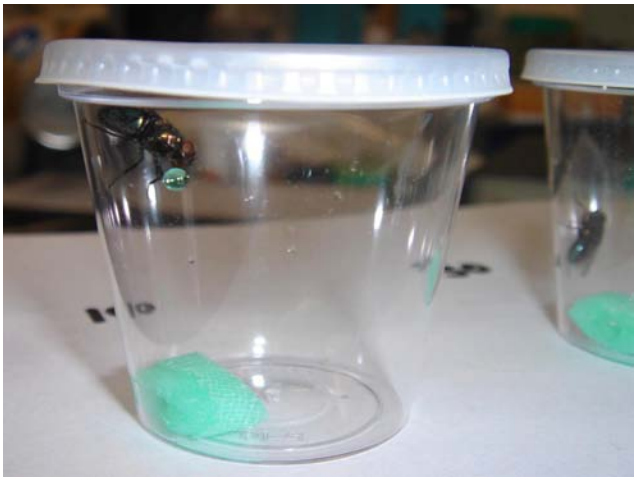
John Stoffolano

Dept. of Plant, Soil & Insect Sciences, Univ. of Massachusetts,
Amherst, MA 01003, USA; stoff@ent.umass.edu

Aaron Haselton and I have just finished a major review article for the Annual Review of Entomology on the dipteran crop (The Adult, Dipteran Crop: A Unique and Overlooked Organ). The article is scheduled for the 2013 issue. It was a major task and we received help from many dipterists who provided information or references. I would like to encourage those of you who do field work and make detailed observations on adult flies to watch, maybe take some notes and, images (still or video) should be taken. Go to the following website – http://diptera.info/articles.php?article_id=16 – or google flies bubbling. This will take you to the diptera info site. Go down to the Forum Threads and find 'Fly bubble blowing', which lists 153 files. This is probably the largest collection of different species of flies bubbling. One should know that flies do this behavioral bubbling by pumping liquids out of the crop lobes, bypassing the midgut and, push the fluid out onto the tip of their proboscis. Some flies hold the

Stomoxys calcitrans (left) and *Musca domestica* (right). Photos by Brad Mullens.

droplet, not a bubble, on the tip for some time while others re-ingest the droplet, continue to bubble and re-ingest again. Other flies, such as in some of the tephritids and sciomyzids, drop the bubble onto the substrate where it acts as a nuptial gift, a trap-line for re-ingestion, or mix it with salivary gland secretions forming a nuptial gift in a frothy pillar or the droplet can act as a lekking pheromone. You can add to the website above and/or send me copies of what you observe. Below are some references that provide information about this behavior in flies. What is needed, however, is to make observations on blood feeding adults to see if they bubble. The only photo I know of is by Brad Mullens showing



Phormia regina

a *Stomoxys* producing a small bubble. This process of 'bubbling' aids the fly in getting rid of excessive water in the meal (nectar, dung, etc.), thus unloading the water which aids in a more efficient flight. Blood feeding adults unload the water in a blood meal using rapid diuresis and involvement of the Malpighian tubules. Since nectar goes to the crop in these flies we do not know how they get rid of the water in the carbohydrate meal.

Hendrich J, Cooley SS, Prokopy RJ. 1992. Post feeding behaviour in fluid-feeding Diptera: concentration of crop contents by oral evaporation of excess water. *Physiological Entomology* 17: 153-61

Larson K, Stoffolano JG, Jr. 2011. Effect of High and Low Concentrations of Sugar Solutions Fed to Adult Male, *Phormia regina* (Diptera: Calliphoridae), on 'Bubbling' Behavior. *Annals of the Entomological Society of America* 104: 1399-403

Lu F, Teal PE. 2001. Sex pheromone components in oral secretions and crop of male Caribbean fruit flies, *Anastrepha suspensa* (Loew). *Arch Insect Biochem Physiol* 48: 144-54

Stoffolano JG, Jr. 1995. Regulation of a carbohydrate meal in the adult Diptera, Lepidoptera, and Hymenoptera. In *Regulatory Mechanisms in Insect Feeding*, ed. RF Chapman, G de Boer, pp. 210-47. New York: Chapman & Hall

Stoffolano JG, Jr., Acaron A, Conway M. 2008. "Bubbling" or droplet regurgitation in both sexes of adult *Phormia regina* (Diptera: Calliphoridae) fe various concentrations of sugar and protein solutions. *Annals of the Entomological Society of America* 101: 964-70

Stoffolano JG, Jr., Guerra L, Carcupino M, Gambellini G, Fausto AM. 2010. The diverticulated crop of adult *Phormia regina*. *Arthropod Struct Dev* 39: 251-60.

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Diptera collecting in Peru

Allen L. Norrbom

Systematic Entomology Lab (USDA), National Museum of Natural History,
Washington, DC 20013-7012, USA; Allen.Norrbom@ARS.USDA.GOV

Bruce Sutton, Gary Steck (FSCA) and I are involved in a project with the Centro de Ecologia y Biodiversidad (CIBIO), Lima concerning the taxonomy and natural history of flies (particularly Tephritidae & Tabanidae) of Peru. Specimens were collected by Malaise traps (dry FSCA; alcohol USNM), at metal halide/UV lights, or by hand. I am also receiving Diptera specimens from the survey that Caroline Chaboo (Univ. of Kansas) is conducting in the Cosnipata Valley (various types of traps; specimens are in alcohol). If you have any interest in this material, please let me know which families or if you would want to see trap residues. The normal restrictions apply; holotypes and half of any species are supposed to be deposited in a Peruvian institution. If you are interested in collecting in Peru (presuming you have funding), it may be possible to add your name to our permit with sufficient lead time (i.e., 6 months). For this year we are planning trips for June and November.

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FREUNDE DER ZOOLOGISCHEN STAATSSAMMLUNG MÜNCHEN E. V.

14th R. J. H. Hintelmann Scientific Award

for Zoological Systematics

established by Mrs. Elisabeth Hintelmann
in memory of her husband Robert J. H. Hintelmann

For outstanding achievements in zoological systematics, phylogenetics, faunistics or zoogeography the association "Freunde der Zoologischen Staatssammlung München e.V." has the pleasure to announce the **14th R.J.H. Hintelmann Scientific Award**. The prize has the value of Euro 5,000.- and its target group are young post-graduate scientists. The price was awarded annually since the year 2000 (see in the internet: www.zsm.mwn.de/events/wiss_preise.htm).

This prize is awarded not only in appreciation of the previous scientific performance of the applicant, but the prize-winner will also be given the opportunity to continue his/her research work in coordination with the Zoologische Staatssammlung München (ZSM). This may be carried out either by visiting the ZSM or by being provided with ZSM materials for work elsewhere. The 14th R.J.H. Hintelmann Scientific Award will be presented in January, 18th, 2013during a ceremony at the ZSM in Munich, where the prize-winner has to provide a short lecture on his/her research topics.

Nominations may name any young post-graduate scientist, preferably not in a permanent position, with outstanding performance in the fields mentioned above. The pertaining proposal or application should provide an account of the candidate's scientific achievement. In addition, curriculum vitae, list of publications, and selected reprints (not more than five) have to be submitted (please submit in **printed as well as digital form**, e.g. on CD-Rom). The submitted documents remain with the awarding association.

Candidates may be nominated by any zoologist; self-nomination and repetitive application in several years are also possible. The prize-holder is elected on absolute majority basis by a jury appointed by the executive committee of the "Freunde der Zoologischen Staatssammlung e.V." Depending on the quality of applications the association reserves the right to withhold the award in any given year.

Please send applications or nominations until **July 27th 2012** to the following address:
Freunde der Zoologischen Staatssammlung München e.V.
R. J. H. Hintelmann-Wissenschaftspreis
Münchhausenstrasse 21
D-81247 München, Germany

For further information please contact: schoenitzer@zsm.mwn.de
Munich, April, 2012

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Now is the time … to publish in CJAI. We need your keys!

Steve Marshall

University of Guelph Insect Collection and Insect Systematics Laboratory,
School of Environmental Sciences, 1216 Edmund C. Bovey Building, University of Guelph,
Guelph, ON, N1G 2W1, Canada; samarsha@uoguelph.ca

I suspect that almost everyone reading Fly Times is sitting on enough specialized knowledge about their favorite taxa to spin off a useful key on the back of a napkin in the time it takes to consume a leisurely beverage. How about saving that napkin for wiping your chin, and instead laying out your key in PowerPoint for publication in CJAI? Dropping couplets into PowerPoint using the template provided on the CJAI instructions to authors at (http://www.biology.ualberta.ca/bsc/ejournal/authors.html) is easier than scribbling on a napkin, and it is not much harder to drag and drop images right into the template. And taking character images is getting easier and easier, so that is no barrier either. CJAI is produced on behalf of the Biological Survey of Canada and the Entomological Society of Canada (it is now a core publication of the Society) fully refereed and open access. Just Google CJAI or The Canadian Journal of Arthropod Identification to see some of the fly keys already published. Once reviewed, your key will be converted to html and pdf versions for publication on our web site. Keys covering broad areas are encouraged, the only restriction being that they have some relevance to the Canadian fauna. Published keys range in scope from provincial to global, but most cover a big piece of the continent, such as northeastern North America.

With your support we could turn CJAI into a one-stop shop for user-friendly fly keys … a tremendously useful resource for all of us.

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In the shadows of giants: why would sciomyzids lurk on and around tarantulas?

Steve Marshall

University of Guelph Insect Collection and Insect Systematics Laboratory,
School of Environmental Sciences, 1216 Edmund C. Bovey Building, University of Guelph,
Guelph, ON, N1G 2W1, Canada; samarsha@uoguelph.ca

During a visit to Chile (in December 2008) I spotted a wandering male tarantula near Olmue, just north of Santiago. On close examination, the spider turned out to have several unusual associates and hitchhikers – small sciomyzid flies later identified by Lloyd Knutson as *Parectinocera inaequalis*. *Parectinocera* are unknown as larvae, but it is extremely unlikely that they have any real association with spiders. So why were several flies riding on the legs and body of the spider? Perhaps the spider was serving as an opportunistic lek site. Mating pairs were seen nearby, even under the spider's legs, as you can see in the photos. Does anyone have a better explanation?

In the shadows of giants - why would sciomyzids lurk on and around tarantulas?

Parectinocera inaequalis on or near a tarantula near Santiago, Chile; the single specimen here is on the knee of the spider, and mating pairs were found on the ground between the spider's legs. Larvae of this fly are unknown. The tarantula is probably Grammostola rosea.

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Ottawa Dipterology (1937–1989): Festschrift commemorating the coordinators of the *Manual of Nearctic Diptera* and their contributions to building the Canadian National Collection of Insects.

Bradley J. Sinclair, Jeffrey M. Cumming, Scott E. Brooks, James E. O'Hara & Jeffrey H. Skevington

Invertebrate Biodiversity, Agriculture and Agri-Food Canada,
K.W. Neatby Bldg, C.E.F., Ottawa, Ontario, Canada K1A 0C6

All three parts of the Festschrift have now been published in *The Canadian Entomologist*. Many thanks to all dipterists involved, especially authors and reviewers. We are especially indebted to the former Editor-in-Chief of *The Canadian Entomologist*, Dr. Robb Bennett. Robb's patience and editorial skills greatly facilitated the successful completion of this project. We have received very favourable feedback about the Festschrift from the dipterological community. As well, Monty, Frank, Dick and their families have expressed their heartfelt appreciation for this tribute.

The Festschrift was created to celebrate the careers of the former Diptera curators of the Canadian National Collection of Insects (CNC) and their efforts as coordinators of the three volumes of the *Manual of Nearctic Diptera*. The years 1937 to 1989 span the period beginning with the arrival of the first of the *Manual* coordinators at the CNC (Guy Shewell) until the publication of the third volume of the *Manual*. Each of the curators and coordinators of the *Manual* (Frank McAlpine, Bobbie Peterson, Guy Shewell, Herb Teskey, Dick Vockeroth and Monty Wood) has left a lasting legacy in dipterology. Details about their accomplishments were presented in the introductory paper of Part 1. Lists of their publications and patronyms, along with a selection of photographs, were also included in this introductory paper. These lists (updated to include newly published patronyms) and photographs are also available on the CNC website (www.canacoll.org/Diptera/Main/diptera.htm).

The three parts of the Festschrift were published in consecutive issues of *The Canadian Entomologist*, the first in volume 143 (6) and second and third in volume 144 (1, 2). In total the Festschrift comprises 578 published pages and includes contributions on 22 families of Diptera, thus covering a good portion of the diversity of the order. Part 1 can be currently viewed at http://pubs.esc-sec.ca/toc/ent/current and Parts 2 and 3 at http://journals.cambridge.org/action/displayBackIssues?jid=TCE, if you or your institution has a subscription to *The Canadian Entomologist*.

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Announcing publication of the book *Insects of Brazil: Diversity and Taxonomy*

José Albertino Rafael

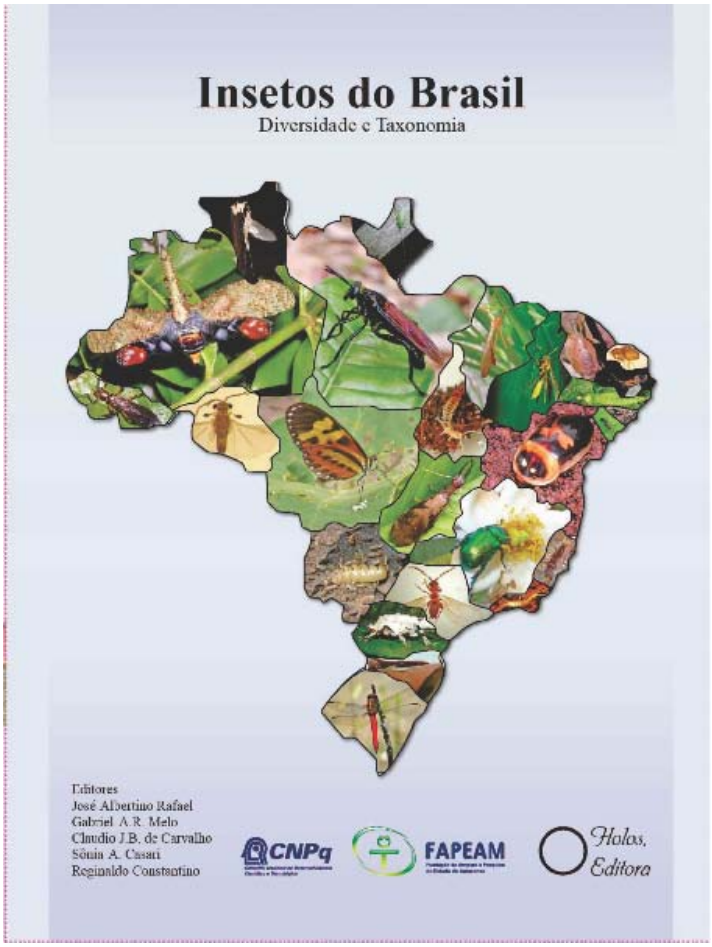
Instituto Nacional de Pesquisas da Amazônia – INPA
Coordenação de Biodiversidade - Entomologia
Manaus, Amazonas, Brazil, jarafael@inpa.gov.br

It is a pleasure to announce a new entomology book, *Insetos do Brasil: Diversidade e Taxonomia* (Insects of Brazil: Diversity and Taxonomy), just released by Holos, Editora.

Rafael, J.A.; Melo, G.A.R.; Carvalho, C.J.B. de; Casari, S.A. & Constantino, R. (eds.) 2012. **Insetos do Brasil: Diversidade e Taxonomia**, Holos, Editora, Ribeirão Preto, São Paulo, Brasil. xiv + 796 pp.

This book, written in Portuguese, can be purchased from the publisher at the website – www.holoseditora.com.br. There is also a webpage — www.insetosdobrasil.inpa.gov.br — with additional information on the book.

The costs for publication of the book were partially financed by two Brazilian funding agencies: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Fundação de Amparo à Pesquisa do Estado do Amazonas (FAPEAM).



The book is equivalent, in terms of scope, to the "Insects of Australia" or "Borror and Delong's Study of Insects", but focusing the Neotropical fauna. The introductory chapters deal on different subjects, as the history of Brazilian Entomology, external and internal morphology, physiology and anatomy, phylogeny and classification, Neotropical biogeography, biodiversity and conservation, agricultural entomology, forensic entomology, and principles of systematic, followed by separate chapters on all the 30 Hexapoda orders occurring in Brazil. A glossary and taxonomic index were included. The book has 810 pages, divided in 43 chapters, with over 1,760 line drawings and photographs. The preparation of the chapters involved 71 world insect experts, 53 of which from Brazil. All insect orders received a modern treatment, with updated information (or estimation) on number of known species occurring in Brazil.

The book intends to be an updated source of information for the preparation of new generations of entomologists at undergrad and grad levels, as well as a source for identification and understanding of all insect families occurring in Brazil and in other tropical countries in South America.

The chapter on Diptera was prepared by four Brazilians experts, Claudio J.B. de Carvalho, José Albertino Rafael, Márcia Souto Couri, and Vera Cristina Silva. It presents a key to all 96 families currently known to occur in Brazil and has a brief treatment for each of them.

In the name of the editors, I would like to congratulate all the authors for this achievement, as well as to everyone else who has contributed to produce this remarkable book dealing with the Brazilian insect diversity.

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Back in the West!

Chris Borkent

California State Collection of Arthropods, Plant Pest Diagnostics Center
California Department of Food and Agriculture, Sacramento, CA 95832, USA;
916-262-1152, chris.borkent@mail.mcgill.ca
http://www.cdfa.ca.gov/plant/ppd/staff/cborkent.html

I am pleased to announce that I have joined the Dipterists at the CDFA in Sacramento, CA as a postdoctoral researcher! After the submission of my PhD. thesis on mycetophilid systematics at McGill University, I was fortunate enough to be awarded a FQRNT (Fonds de recherche du Québec – Nature et technologies) Postdoctoral research fellowship to work at the CDFA. I will principally be continuing my research on the systematics and natural history of the Mycetophilidae and other Sciaroidea, in collaboration with Dr. Peter Kerr. I am planning to explore the phylogeny of the paraphyletic Gnoristinae as well as revise a few genera. I will also be dabbling in acrocerid systematics (a revision of the genus *Eulonchus*), and other Diptera related projects along the way. I am looking forward to an interesting and productive couple of years! As always I am happy receive any mycetophilid specimens that anyone feels like sending my way.

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Flies on Display in Australia

Christine Lambkin

Biodiversity Curator (Entomology), Queensland Museum & Sciencentre
P.O. Box 3300, South Brisbane BC, Queensland 4101, Australia;
christine.lambkin@qm.qld.gov.au

The Queensland Museum, Brisbane, Australia currently has a display “Rise of the Flies” outlining the evolutionary response by Diptera to catastrophes based on the recent Assembling the Tree of Life paper: Wiegmann, B.M., Trautwein, M.D., Winkler, I.S., Barr, N.B., Kim, J.-W., Lambkin, C., Bertone, M.A., Cassel, B.K., Bayless, K.M., Heimberge, A.M., Wheeler, B.M., Peterson, K.J., Pape, T., Sinclair, B.J., Skevington, J.H., Blagoderov, V., Caravas, J., Kutty, S.N., Schmidt-Ott, U., Kampmeier, G.E., Thompson, F.C., Grimaldi, D.A., Beckenbach, A.T., Courtney, G.W., Friedrich, M., Meier, R. and Yeates, D.K. 2011. Episodic radiations in the fly tree of life. *Proceedings of the National Academy of Sciences* **108**: 5690-5695.

On January 20 2012, the South Bank branch of the Queensland Museum (QM) reopened after 4 months of renovation to six new exhibitions. One exhibition on the public floors “Bouncing Back from Disasters” co-authored by QM geneticist Dr Jessica Worthington-Wilmer commemorated the anniversary of the 2011 floods that hit Queensland and Brisbane and included the “Rise of the Flies” display showing the evolutionary importance of disturbance authored by QM Curator of Entomology Dr Christine Lambkin.

The QM Display CATASTROPHES and Rise of the Flies with Jessica Worthington-Wilmer and Christine Lambkin. Photograph Noel Starick, QM.

“Rise of the Flies” aligns the evolution of flies to the catastrophic events that accelerate evolution by ultimately leading to environmental conditions that encourage the growth and diversification of life on Earth. Research by the Assembling the Tree of Life colleagues revealed that three bursts of diversification in the group Diptera coincide with times when the Earth was recovering following the 3 most recent mass extinction events.

Chris shows Jessica the Lower Diptera immatures in the QM Display Rise of the Flies. Photograph Noel Starick, QM.

The Rise of the Mosquitoes and Mosquito-like Flies. 220MYA

- Most likely due to massive volcanic eruptions that also set fire to huge coal deposits causing extreme changes in global climate, carbon cycles and acidity of the oceans.
- The great radiation of modern insects began within 3-4 Mya of the Permian-Triassic Mass Extinction 250MYA
- World's climate was hot and wet. Ave global temperatures went from 12-15oC to 22oC
- The success of mosquitoes and their relatives was due to their adaptive response to the warm, wet conditions by having aquatic larvae

Rise of the March (Horse) Flies 175MYA: Triassic-Jurassic Mass Extinction 200MYA

- Most commonly accepted explanation is climate change linked to mass volcanism similar to that which occurred at the end of the Permian (Central Atlantic Magmatic Province)
- World's climate became hot and dry.
- Terrestrial habitats dried out
- New desiccation resistance mechanisms evolved
- The success of March Flies and their relatives was due to the development of larvae that avoided desiccation by living in the soil (Soldier Flies and March Flies) or even inside another insect (Beeflies) and were often predatory (Stiletto Flies). .

Rise of the House and Bush Flies 50MYA: Cretaceous-Paleogene Mass Extinction: 65 MYA

- Asteroid impact with the Earth and associated global climate changes.
- The largest insect radiation of the Tertiary era
- World's climate became cooler and drier
- The success of this group of flies corresponds to the development of the desiccation resistant pupal case and "ptilinum" (head sac which is inflated at hatching).
- These flies literally blow open their face to form a battering ram that allows them to break out of the pupal case to start their adult lives!

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Dipterological Poems

Gordon Ramel

Associate Professor of English, Huai'yin Normal University,
71 Jaiotong Rd, Huai'an, Jiangsu, China P.R. 223001; gjramel@hotmail.com

A Fly

The micro-architecture is profound
each finely textured ridge, each joint and hair
perfect in every detail. Who has found
within the earth a gem that can compare?
And see! One wonder with another crowned
it lives, and with its wings swims through the air.
Such fearless magic surely must astound
even a mind sore dulled by earthly care.
It is a pleasure for the soul's delight
as grand a marvel as has ever been.
The poet strives in vain, but still must try
to bring such beauty to the common light
and call himself well blessed to know he's seen
the glory that upholds the humble Fly.

Chloropidae

Who knows of the Chloropids? They're so small,
full-stops with wings, there's little more to see
if you should chance to find one flying free,
most of the time they are not seen at all.
Alas, this weakness of our human eyes
robs us of so much beauty I could cry
were it not that our human minds can fly;
my microscope unveils a sweet surprise.
What was a dot is now a fly, complete
in all its parts, perfected and sublime.
The wonder of it lifts me out of time
into a moment so intense, replete
with joy and free from stress and pain,
it lures me back to life time and again.

The Sciomyzidae

The fascinating Sciomyzidae
live out their lives by some old pond or stream,
and in the night their hungry larvae dream
of fresh snail flesh for breakfast lunch and tea.
During the day the adults wander free
on often fuscate and attractive wings
searching for flowers and other tasty things,
as well as mates to share their repartee.
The thought of escargot eternally
alive, uncooked, bereft of garlic source
does not inspire me, but then of course
I'm not a fly to live so frugally,
or flit so freely through the summer's haze
and die untouched by winter's bitter days.

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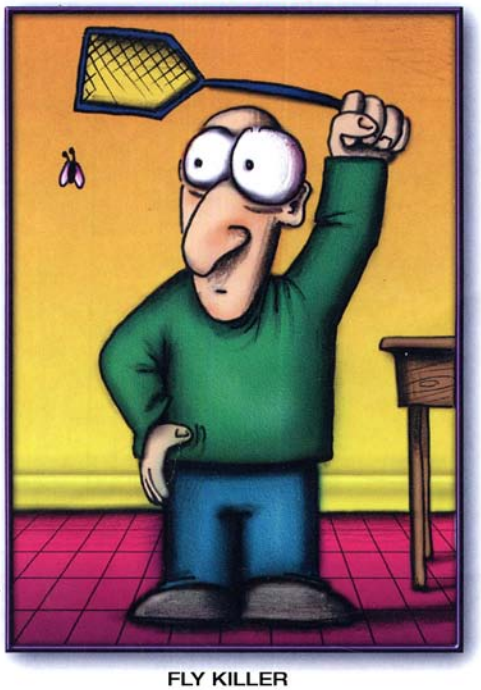
Special thanks go out to the artist Marco Marilungo, for his permission to let us use some of his individual variations on a dipterological theme – part of his "History of Art: The Avante garde" series commissioned by the Academy of Fine Arts in Macerata, Italy, as part of a promotional poster for enrollment in the Academy. I think they are all fantastic! I had a very difficult time picking eight to fit on two pages! Visit Marco's website – http://www.marilungo.com – to see the full series, and lots more!

REALISM



FLY KILLER

ART NOUVEAU

ENCHANTING FLORAL
WITH JOYFUL LITTLE FLY

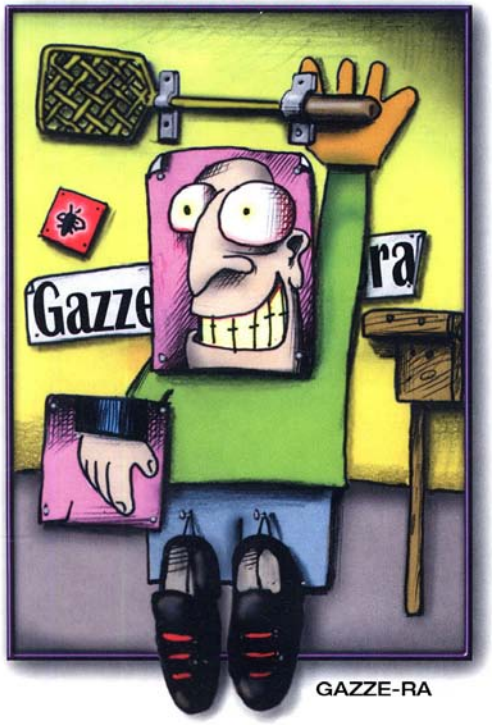
CUBISM

PORTRAIT OF MAN
AND FLY SWATTER IN HAND

EXPRESSIONISM

ME AND MY FLY

DADAISM

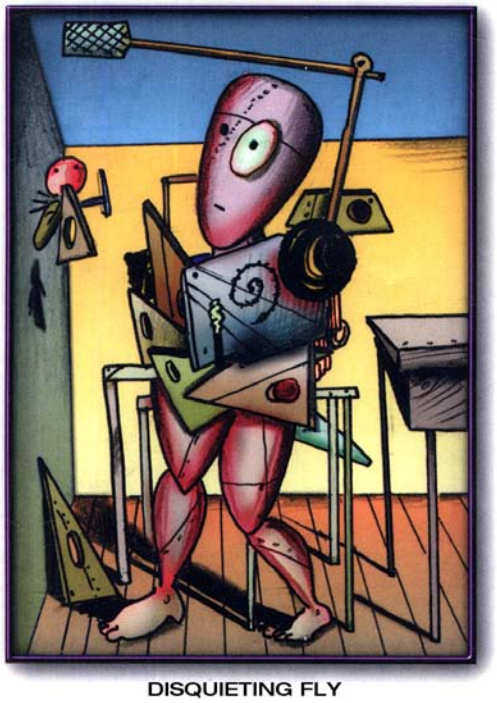


GAZZE-RA

SURREALISM

LANDSCAPE WITH FLY
AND A TABLE ON FIRE

METAPHYSICAL ART



DISQUIETING FLY

POP ART

OKAY...

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HISTORICAL DIPTEROLOGY

Dipterophilologicalities[1]. First Instar

Neal L. Evenhuis

J. Linsley Center for Research in Entomology, Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817-2704, USA; email: NealE@bishopmuseum.org

This is the first in a series of notes on names given to genera and species in Diptera. Some may be biographical in nature and possibly on the longish-side; others may be as short as the name in question. We often see a scientific name in a paper but do not think much past what it is as a species or a genus. This series will hopefully provide some interesting tidbits of information and maybe a bit of background to the people and places who are/were famous or maybe little-known but in any case for whom or what an author saw fit to honor with a Diptera taxon name.

Thanks to the Systema Dipterorum *database* (www.diptera.org) *for some of the statistical data used in the entries below.*

1. *Mya* Rondani, 1850
Rondani gave no etymology for the name but it is most often presumed that it is a corruption of the Greek *Myia*, which dictionaries define as "fly" (the fact that Rondani's genus-group name is preoccupied by a mollusk described by Linnaeus confounds the presumption, but for purposes of this eponymy, let's pretend that Rondani had a fly in mind and not a mollusk).

The origin of the Greek "Myia" derives from various old Greek legends and stories, one of which is that there was a maiden whose name was Myia who was vying with the goddess Selene for the love of Zeus's son, the handsome hunter Endymion. When the young man slept, she was constantly waking him with her gossip, singing, and merriment. Finally, he lost patience, and Selene, in her wrath, turned Myia to what she now is, a pesky fly. To this day, in her memory of Endymion, Myia still bothers sleepers in their rest. Sounds more like a mosquito to me...

2. *Anthrax belzebul* Fabricius, 1794; *Calobata belzebul* Schiner, 1868; *Mallophora belzebul* Schiner, 1867; *Diopsis belzebuth* Bigot, 1874; *Tephritopyrgota belzebuth* Hendel, 1914
The species-group name, here various spelled as *belzebul* or *belzebuth*, derives from the Hebrew Baʿal Zəbûb itself from the Arabic: بعل الذباب, Ba'al az-Zubab, meaning "Lord of the Flies". The spelling Belzebub, deriving from the Arabic, has since evolved into other spellings, the most common current version of which is "Beezelbub".

Determining the history of the meaning of this name is a complex one as there are two biblical interpretations: one from the Old Testament (the Lord of the Flies one) and a different one from the New Testament (a demonic character equaling Satan). It is most likely, however, that the Old Testament writers took the Arabic definition of the name and used it to deprecate idolatry; the New Testament

[1] The title of this series owes its inspiration to ornithologist, nomenclaturalist, and bibliographer, Elliot Coues and his "Ornthophilologicalities" that appeared in the 1884 *The Auk* (1: 49–58) as a retort to Prof. Augustus C. Merriam and his disagreements with the etymological derivations for bird names given by Coues.

writers simply embellished the negative connotation of the name to its ultimate extreme. However, before we go around boasting about some of our favorite species having a name that equals “Lord of the Flies”, it is useful to note that there is an interesting follow up on the history of the name. That is, some Jewish scholars had interpreted the “Ba’al” (= Lord) of the “Baal Zebub” as being a pile of dung, so that the followers of Ba’al were essentially flies attracted to dung. Muscoid workers should appreciate that allegory.

3. Unusual two-letter epithets

There are not many Diptera species who have been named based on only two letters. One of the more common is “io” having no less than 10 different fly species with that moniker. Io was the daughter of the Argive king Innachus, who for fear of Juno, changed her into a cow. She gives the name to the Ionian Sea, across which she is supposed to have swam... most likely before she was turned into a cow. And at least two flies bear the name of the Egyptian sun god “Ra”: *Tritoxa ra* Harriot, 1942 and *Chernovskiia ra* Pankratova, 1983. But there are a couple of two-letter epithets for which origins are not yet known: one is the syrphid *Eristalomyia fo* Bigot, 1880 from China and the other is the crane fly *Tipula bo* Mannheims, 1967 from Finland. If anyone knows the origin of either *fo* or *bo*, please let me know.

4. Some (probably) unintended unusual names

Long before these image transfer machines were commonplace (and now they are becoming obsolete!), *Volucella fax* was described by C.H. Townsend in 1895 for a syrphid fly from Colorado. Almost 50 years later A.E. Pritchard, in 1943, described a robber fly from New Mexico as *Cophura caca*.... no doubt exasperated that the fax machine had still not been invented.

5. How rare is rare?

At least 25 fly species are named “*rara*”, many in Mycetophilidae. And over 70 species of flies are named “*singularis*”, including two different times in *Liriomyza* (20 years apart) and in *Hilarimorpha* (100 years apart). So much for being singular or “rare”. In contrast 50 species are named “*communis*”. and 65 are named “*vulgaris*” (both names which derive from the word “common”).

6. Patronymophilia

When we name a species after someone, it is to honor them for service they have done to our work or to dipterology as a whole, whether it be as ephemeral as having collected the species in question or the more long-lasting influence our mentors and colleagues have had on us. If the number of patronyms is an indication of the impact a person has had on dipterology, then the Russian syrphidologist A.A. Stackelberg (1897–1975) is at the top of that list. He has some 170 species named for him. In comparison, a brief listing of some other luminaries follows with numbers of species-group patronyms in parentheses: Linnaeus (3); Robineau-Desvoidy (6); Fabricius (13); Okada (13); Rubtzov (13); Latreille (20); Fallén (22); Kovalev (22); Matsumura (22); Cole (26); Efflatoun (28); Kieffer (30); Austen (32); Shiraki (32); Wiedemann (34); Paramonov (36); Rondani (37); Enderlein (38); Oldroyd (40); Hennig (41); Hendel (42); Alexander (43); Bezzi (43); Zetterstedt (47); Schiner (48); Coquillett (51); Meigen (52); Osten Sacken (53); Kertész (56); Bigot (57); Stone (59); Colless (62); Frey (63); Townsend (65); Malloch (66); Macquart (72); Williston (77); Sabrosky (81); Loew (98); Wirth (99); Becker (102); Aldrich (114).

7. Celebrity flies

More eponymous naming here — this time for people of note. The recent naming of an Australian tabanid with bling on the bum in honor of singer Beyoncé and her bootylicious bum (*Scaptia beyonceae*

Lessard, 2011) has gotten some good press for our profession, but there are a few other celebrities who have had flies named after them too: *Eristalis gatesi* Thompson, 1997 (a rat-tailed maggot named for smart-home owner Bill Gates); *Carmenelectra shechisme* Evenhuis, 2002 (a fossil micro bee fly in amber with a spectacular body named for actress/model Carmen Elektra and her spectacular body; "elektra" means amber in Greek); *Campsicnemus charliechaplini* Evenhuis, 1996 (a Hawaiian long-legged fly named after Charlie Chaplin because the flies all died with their legs in a bandy-legged position, reminiscent of how he walked); *Dicrotendipes thanatogratus* Epler, 1987 (a chironomid fly named for the "Grateful Dead" — *thanatogratus* translates to that).

If you have a favorite odd name that you would like featured with more background information and/or history or have a question about the origin of a name, please send it to me and I will endeavor to include it in a forthcoming instar of this column.

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NECROLOGY

The North American Dipterists' Society regrets to inform its members of the recent loss of two of our esteemed colleagues. And thank you to the writers of these heartfelt obituaries to give us all more perspectives on the lives of our deceased friends.

- Colless, Vale Don (24 August 1922-16 Feb 2012)
- Weems, Howard V., Jr. (22 April 1922 - 18 June 2011)

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Vale Don Colless, Australian Dipterist, 24 August 1922-16 Feb 2012

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Fig. 1. A suave young Donald Colless, BAgSc. Image from family, taken from funeral service program.

Donald H. Colless (Don to all), who was the foremost Dipterist of the last half-century in Australia, died earlier this year. With a reputation for breadth of interests in the flies and his precocious computer-literacy, Don was globally-recognised scientist. His entomological and systematics activities continued throughout his retirement from the Australian National

Insect Collection (part of CSIRO Entomology), during which time he overlapped with his successors, Peter Cranston (1987-2000) and David Yeates (2000-continuing). This remembrance is compiled from our scientific collaborations, social interactions (perhaps especially during our time of overlap with Don the 'retiree'), some specific discussions in his final months, and from a personal memoriam that David Yeates gave at the funeral on 27th February in Canberra, Australia.

Don, whose youth was spent around Uralla on the Tablelands of northern New South Wales, started his formal education in entomology at the University of Sydney, graduating in 1947 with a BAgSc (Fig. 1). Interestingly his education from high school onwards was in tandem with that of Keith Taylor, who spent all of his subsequent career at CSIRO Entomology in Canberra. Don himself after graduating made a start with what was then CSIR (as termed before it became an 'organisation', CSIRO), but a few months later he answered a call to research in mosquitoes in South-East Asia. Thus Don spent the years 1947 to 1952 in North Borneo (now Sabah, part of Malaysia) and then 8 years at the University of Malaysia, Singapore (which changed from British 'rule' to self-governance, then merged ephemerally with Malaysia).

During this time, Don studied all the mosquitoes of the region, but emphasised the actual and potential disease vectors. One of Don's earliest papers was from this period and concerned 'The anopheline mosquitoes of north-west Borneo' and was published in *Proceedings of the Linnean Society of New South Wales*, appearing just one year after his arrival there. The regular flow of papers from the Malaysian days shows the breadth of Don's interests, ranging from identification of larval breeding sites, assessment of vector status and host preferences, as well as formal taxonomy (including the difficult *Anopheles leucosphyrus* group). And there were early indications of what was to become a core part of Don's later repertoire – the application of statistics in biology - in a paper calculating the components of catch curves - the 'biting cycle' – of a *Culex* species. That this appeared in *Nature* may surprise us these days, but it was already his 3rd paper in that august journal, and another followed the next year, namely another concerning daily survival-rate and the gonotrophic cycle – crucial factors in mosquito epidemiology. Two more papers by Don appeared in *Nature* – stressing that Don always was at the cutting edge of published entomological research. Don's PhD was awarded by the University of Malaysia in 1956, from the Department of Parasitology – there was no Entomology Department, then as now.

Fig. 2. Three ANIC Dipterists left to right, David Yeates, Don Colless and Peter Cranston, summer 2001. The location of Don's wine glass is uncertain. Photographer unknown.

Don was immersed deeply and broadly in the culture and natural history of Malaysia, and increasingly with the Sri Lankan diaspora. To his death, he loved to reminisce about those times, not least about the diversity of foods available in Singapore. Both Peter Cranston and David Yeates have more recent connections with this region and gained much pleasure

talking with Don, over wine of course (Fig. 2), about those formative years in Don's tropical days. Earlier this year Pete visited the University of Singapore, where Paddy Murphy (Don's successor as regional medical entomologist, now retired) told him that Don's mosquito studies remain invaluable, although dengue is now the greater problem, rather than the malaria and Japanese encephalitis of Don's time.

After more than a decade in Asia, and surely with some reluctance, Don left Singapore in 1960 to join CSIRO permanently in the position of Dipterist in the Australian National Insect Collection (ANIC) in Canberra. With promotion to chief research scientist in the 1970's he also became Chief Curator of the ANIC from 1971-1977 during a strong expansion phase. It was here that Don spent the remaining 50+ years of his life, interacting with a host of visiting scientists lured by the ever-expanding collections. In this time Don's taxonomic breadth expanded greatly to cover nearly all families of the Australian Diptera. His field experience was immense and he was the mainstay and ever-present participant in a series of major expeditions by ANIC to collect the diversity that was 'out there' in the more remote parts of the continent. Initially Pete was somewhat irked to find that no matter how remote his own aquatic field work had been, Don (and CSIRO colleagues) had been already 'been there, done that' - and all in the days when there was no ribbon of asphalt from east to west and north to south, or 4-hour flights to Darwin. But of course, the detailed location notes, photographs and above all the specimens collected and diligently mounted were resources that both of us came to value highly. Not only this, but Don's hands-on attitude – from field collection to mounting to identifying and accessing specimens – meant that Don truly knew the Australian Diptera fauna. These specimens surely represent the lasting legacy of his dedication to understanding Australian insect diversity. He was a meticulous perfectionist in his work, and his specimens are often the holotypes of our biota.

For his two successors, one of us very naive and fresh from UK, Don's expertise was critical to help us identify the flies that routinely pass over the desk of curators of Diptera. We had two options – to spend hours trying to figure out what the specimen was for ourselves, or just go and ask Don. Since Don always knew what the fly was off the top of his head, the choice was clear. In later years, when Don wasn't always in his ANIC office, David would email a photo, and back would come the name – quite a feat with around 6,000 described species of Australian flies.

Amidst this expertise across all flies, Don did have favourites, and typically for him, he chose the really challenging ones. Throughout his professional career and beyond, Don struggled with tachinids and mycetophilids, although his publication record, impressive as it is, does not reflect this. Pete's first professional contact with Don was through a paper (yes, again in *Nature* !) concerning mandibulate adult chironomids, but other than this curiosity corner that we revisited, this was the one family from which he fled – the other being the Tipulidae which he left to Dobrotworsky.

Perhaps Don's most significant achievements as a taxonomist are his chapters on the Australian flies in CSIRO's *The Insects of Australia* with David McAlpine (with editions published in 1970 and 1991). This 'fly bible' contained authoritative accounts of anatomy, biology and taxonomy, and set out a classification of the order. The chapter includes keys to enable the identification of the 100 or so families of flies in Australia that are still in use today. In total Don described as new to science 2 families (Perissommatidae and Axiniidae), 13 genera and over 120 species of flies. About 50 species and 2 genera have been named after Don so far, and the list grows each year.

Don was an extremely productive and successful scientist: by David's count he published 120 scientific papers over a 64 year time span beginning in 1948. Don remained extremely lucid and was writing

papers up until last year - there is one 80-page manuscript that will be published posthumously, probably later this year. Don's contribution to the 'grey literature' was equally voluminous and, as always, wittily written. In later years these appeared often in the form of acerbic interjections to the Taxacom discussion list where – as Dan Bickel has pointed out - Don specialised in taking contrarian stances, especially to what he considered mainstream dogma in phylogenetics. This side of Don's systematic interests may be less well known to dipterists than his 'mainstream' dipterological studies and so here we summarise his contributions.

From the outset, Don's papers include much insight into taxonomic theory – it remains a delight to read a paper ostensibly concerning the messy subject of subspecies status (of mosquito vectors) which combined erudition, clarity of thought and expression, and no little humour. The description of 'The New Systematics' as 'a lusty infant', the World Health Organization as 'embalming the Linnean concept in official dogma' and his own 'absolving X and Y of any guilt' in their taxonomic decisions, is simply splendid writing but all the while revealing deep insights into the 'subspecies problem'. With his interests in systematics of mosquitoes and their relatives, Don had advanced understanding of relationships, and with issues concerning the role of taxonomy with the availability of egg, larval, pupal and adult morphological data.

Don was a very competent biological statistician already in the 1950s and as soon as the first computers became available for use in CSIRO in the 1960's, Don was experimenting with what became the DELTA computer-based system for organising morphological data, and in methods to quantify the process of distinguishing taxonomic groups such as species. With onset of a 'textbook' of numerical methods in systematics from Sokal and Sneath in 1963, Don was primed to enter debate, and he did so with vigour and erudition. For example, he argued in 1967 that 'any empirical conflict between the so-called "phylogenetic" and "phenetic" schools of taxonomy involves little more than the adequacy of statistical procedures' (The Phylogenetic Fallacy, *Systematic Zoology* 16: 289-295). He attacked the rationale of the 'untouchable' E.O. Wilson (for Don there were no sacred cows, including the NY school of cladists). His obituary for Willi Hennig praised his Diptera especially fossil studies, and recognised his systematic theory as elegant and logical precise but 'philosophically debatable'.

In the late 60's Don suggested that 'Both parties [pheneticists and phylogeneticists] would now be well advised to return to the job of improving classifications by collecting new data while unstudied, or poorly-known, taxa are still with us' - which could be read as retreating from what was becoming an increasingly acrimonious debate. Surely Don followed his own advice in directing the expansion of the ANIC and in greatly enhancing the collections, never-the-less he remained very engaged in systematics debates. Although Don wrote no magnum opus on taxonomic practice, he continued to lob pithy 'hand grenades' into the deliberations, often in *Systematic Zoology*, subsequently *Systematic Biology* and latterly the Taxacom listserve. His early recognition of the revolution to be provided by molecular data to taxonomy is well worth re-visiting, as is his 'prediction' that amino acids would come to represent fundamental units in phenetic analysis. Plus ça change ...

Despite the terse language and ruthless logic of Don's systematics papers, all of us recall systematics discussions with great pleasure. For example, Dan Faith identifies Don as being largely responsible for establishing his own interest in phylogenetics in the early-mid 80s. He remembers bouncing many ideas off Don, for example concerning distance-based phylogenetic approaches, stimulating wonderful discussion. And then Don would open a drawer, a folder, or computer file (or all 3) with some hot idea of his own, and then have a great chat about that. Don always was generous, thoughtful and kind, answering all questions respectfully (even the dumb ones). In common with many country-reared

Australians who had lived through the depression, he had a great sense of humour, and was modest and resourceful. Intellectually he was a deep and original thinker, never one to follow the current scientific fad or fashion.

Specifically for David, he recalls during his PhD studies in the 1980's asking Don for help with a piece of computer software that had been released in the USA. He made the request with some trepidation, because the software encoded routines that he knew Don disagreed with. But no worries – Don, always a real gentleman, knew all about the software, and helped David use it. This was quite different to David's experience subsequently in the USA, where members of the different intellectual camps treated each other as mortal enemies. For Pete, memories involved especially discussions on 'underlying synapomorphy' (agreement) and the shape of trees - pectinate versus balanced (agreement to differ, though united on consequence for testing robustness of trees).

David's fondest personal memories are of Don's warmth and friendship from the last dozen or so years of his life, when he was an Honorary Fellow in the collection. Pete particularly remembers Don's hospitality and the welcome given to the 'naive Pom' that replaced him in 1987, and for many 'extracurricular' activities, including appreciation of Sri Lankan food, Australian wine (reds, Fig. 3) and cricket, concerning which we shared an affection for the 'newcomers' Sri Lanka as they entered international competition.

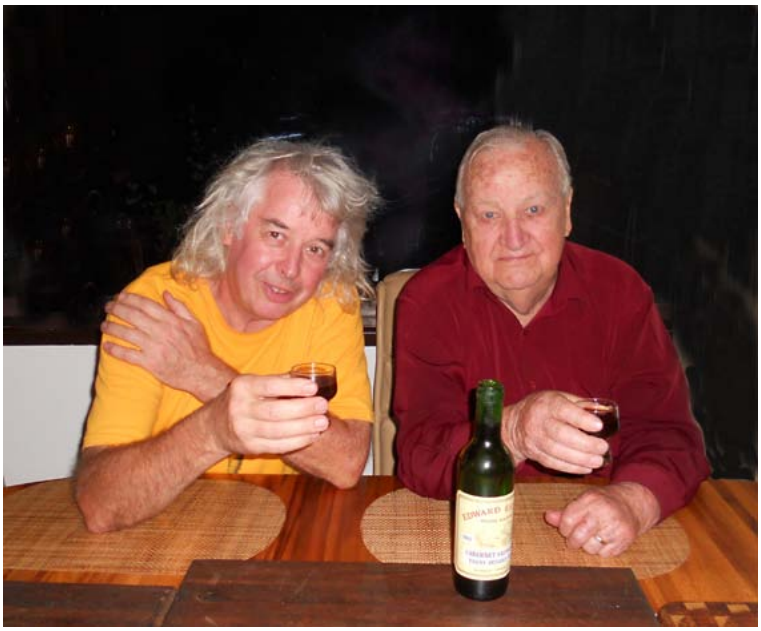

Fig. 3. Don Colless and Peter Cranston, early 2011. The wine was made by colleague Don Edward – the author with Don and Pete on the mandibulate chironomids. Photographer Penny Gullan.

In his long and dedicated lifetime Don achieved a breadth and depth of knowledge of Australian flies that surely will never be equalled in the future as scientific careers become narrower. Don's name and legacy will live on while ever there are people studying Australia's biological diversity, because of the species, genera and families he described, the species and genera that are named after him, and the continued availability of all his specimens that await future study in the ANIC.

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Howard V. Weems Jr.,
22 April 1922 - 18 June 2011

Gary Steck[1] & F. Christian Thompson[2]

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Dr. Howard V. Weems, Jr., dipterist at the Florida State Collection of Arthropods and very well known among entomologists throughout the Americas, passed away on 18 June 2011 at age 89.

Howard was born in Rome, GA on 11 April 11 1922 to Dr. Howard V. and Vail Weems, spending much of his childhood in Sebring, FL. From 1940-1946 he attended Emory University (interrupted by a 2-year stint in the U.S. Army, 1944-1945) for his Bachelor's degree in Biology. He attended The University of Florida during 1946-1948 for his MSc in Entomology, followed by a position as Instructor in the Biology Department at the University of Mississippi in 1948 and 1949. Finally, he attended the Ohio State University during 1949-1953 for his PhD in Entomology, with a dissertation entitled "The Syrphid Flies of Southeastern United States (Diptera: Syrphidae)."
Howard returned to Florida and began his professional entomological career with the State Plant Board of Florida (now the Florida Department of Agriculture & Consumer Services, Division of Plant Industry [DPI]) in 1953. He immediately set himself the task of developing an inclusive insect reference and research collection, files, and library with emphasis on the Florida fauna to provide a quick and accurate identification service. This mission gradually broadened to include nearly all arthropod groups and geographic regions. In the span of his career, what began as a small regional collection has evolved into one of the finest arthropod collections in North America, the Florida State Collection of Arthropods (FSCA).

The Doyle Connor Building, home of the FSCA, itself is sited in Gainesville because of efforts by Howard and fellow entomologists to keep DPI in proximity to the University of Florida, when others wanted to move the agency to Winter Haven. Howard was instrumental in inaugurating and promoting such publication series as the Entomology Circulars, The Arthropods of Florida, and others. During his 38 years as an entomologist with DPI, he served as head curator of the FSCA, adjunct professor of entomology at The University of Florida and Florida A&M University, editor or associate editor on several scientific journals, including the Florida Entomologist, published more than 100 scientific papers, and was a member of more than 30 honorary, scientific, and natural history organizations.

The driving force of Howard's professional career was development of the FSCA and its Research Associate Program. Through the R.A. program, more than 300 scientists internationally have become affiliated with the FSCA. Howard nurtured close relationships with many entomologists throughout the country, and they in turn proved an extremely valuable source of expertise, specimens and taxonomic literature. He even coaxed some of them into retirement in Gainesville where they continued to provide valuable contributions to the FSCA. Howard's own collecting efforts were legendary. He traveled widely in the New World, oftentimes accompanied by wife Camilla and other family members. He collected across all groups, but especially Diptera and Lepidoptera. His specimens are noted for their meticulous preparation. Howard took great effort to "feed" material to various taxonomic specialists around the country. As a result, there are numerous patronyms (at least 19 Diptera names) honoring his contributions scattered about the insect taxonomic literature.

Howard was a real "people" person who led a very active social life and greatly relished his interactions with others and his knowledge of their life histories. He never failed to call me on my birthday to wish me well. Howard was a prolific writer, but he clearly preferred correspondence and biography over scientific writing as attested by the 32 linear feet of correspondence files in the museum. Chances are you have received one of more of Howard's newsy Christmas letters over the years, usually delivered some months after the holiday itself. Nearly everyone has a "Howard" story - and if you are one of them, you can be sure that Howard had a story about you too!
Howard was preceded in death by his sister, Carolyn Weems, his parents and 2 daughters, Camilla Vail Weems and Brenda M. Bennison. He is survived by his wife of 61 years, Camilla Bartley Weems, daughters, Pamela Law-Sallenburger, and Deborah W. Grant, son Howard V., III (Howdy), sister Verna V. Macbeth-Hall, four grandchildren, and a great-grandson.

Howard will be remembered as a collector and collection builder. His favorite group were the flower flies and, while he knew a number of new species in his home state, Florida, he never got around to describe them all. The only two species he did described were in revisions by others. One he named after his lovely wife, Camilla, and that species is undoubtedly the prettiest in the Nearctic Region, being a wonderful shade of reddish pink! However, others have recognized Howard's abilities as there are 17 species of flies named *weemsi*!

New species and names from *Systema Dipterorum* (all Diptera: Syrphidae)

Myolepta camillae Weems, 1956: 5. TL: USA. Florida: Highlands Hammock State Park (HT M AMNH)
Myolepta schreiteri Fluke & Weems, 1956: 11. nomen nudum.

Xylota cascadensis Weems, 1965: 607. New name *Xylota pigra* Lovett.

Rhopalosyrphus ramulorum Weems & Deyrup, 2003: 189. TL: USA. Florida: Highlands Co., Lake Placid, Archbold Biological Station, Trail 1 SSo (HT M USNM).

Taxonomic publications

Weems, H. V., Jr. (1951) Check list of the syrphid flies (Diptera: Syrphidae) of Florida. Florida Ent. 34: 89-113. [1951.09.??]

Weems, H. V., Jr. (1953) Notes on collecting syrphd flies (Diptera: Syrphidae). Florida Ent. 36: 91-98. [1953.09.??]

Fluke, C. L. & Weems, H. V., Jr. (1956) The Myoleptini of the Americas (Diptera, Syrphidae). Am. Mus. Nov.1758, 23 pp. [1956.03.08]

Wirth, W. W., Sedman, Y. S. & Weems, H. V., Jr (1965) Family Syrphidae. Cat. Dipt. Amer. n. Mex.: 557-625. [1965.08.23]

Weems, H. V., Jr., Thompson, F. C., Rotheray, G. & Deyrup, M. A. (2003) The genus *Rhopalosyrphus* (Diptera: Syrphidae). Florida Ent. 86: 186-193. [2003.06.30]

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MEETING NEWS

Diptera BioBlitz, Great Basin National Park, Nevada, June 19-21, 2012

Gretchen Baker

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Great Basin National Park would like to invite you to the 2012 BioBlitz, which will focus on Diptera (flies). The BioBlitz will be held June 19-21, 2012. We are excited to have Dr. Riley Nelson from Brigham Young University be our lead Diptera expert for the event.

Why You Should Come.
First off, Great Basin National Park is a beautiful place, and in late June is filled with wildflowers, singing birds, and an abundance of wildlife. The creeks and springs are running high, making this destination in the Great Basin Desert greener than ever. The snow is melting quickly, and the Scenic Drive that ascends to 10,000 feet is already open at the end of April, so it will be easy to access the high country.

Second, Diptera have received very little attention in Great Basin National Park. They have been surveyed during cave bioinventories and to a limited extent (to family and in a couple campgrounds) by Glen Forister and Matt Forister during a previous BioBlitz. The cave bioinventories have found six new Diptera species: *Camptochaeta prolixa* Vilkamaa, *Aenigmatias bakerae* Disney, *Megaselia excuniculus* Disney, *M. krejcae* Disney, *M. folliculorum* Disney, and *M. necpleuralis* Disney. The potential for additional new species to science is high!

Third, this is an excellent networking opportunity with other entomologists and enthusiastic amateurs. You may be able to find someone to help with your next project. In addition, if there's something of particular interest you'd like to collect, you may be able to get a separate research permit and do some collecting of your taxa of interest at the same time.

Logistics. BioBlitz participants receive free camping at Grey Cliffs campground. The free camping will start one day before and extend to one day after the BioBlitz, June 18-22. The Grey Cliffs campground has some group sites, so that makes it extra fun for breakfast discussions or late-night comparisons. RVs and trailers are allowed, but no hook-ups are available in the Park. If you don't want to camp, there are 3 RV parks in Baker and 6 motel/bed & breakfast options. There are also 2 convenience stores and 4 restaurants. More info about all of these places is available at: http://www.greatbasinpark.com/. We are also looking for a few people who would be willing to venture into the backcountry to sample the more remote parts of the park. Backcountry camping is free and extremely scenic.

Average temperatures in June at the Lehman Caves Visitor Center (6800 ft) are a high of 76 F and a low of 48 F. Grey Cliffs Campground is at 7200 ft, so might be a couple of degrees cooler. A chance of rain is possible any day in June (and snow at the higher elevations). For more climate info, see: http://www.nps.gov/grba/planyourvisit/weather.htm#CP_JUMP_26562.

Baker Hall will once again be our headquarters for the BioBlitz. It's a small gym located in Baker. Look for the pink building (it's the only one) and the signs. We will start and end the BioBlitz at Baker Hall, and it will also be the central place for working with specimens, to do sorting and preliminary identifications. Please bring whatever you like to use to collect Diptera, but we will have some loaner gear available.

Schedule. We are working on the schedule now. The basic schedule is: *June 19*: Morning Diptera Workshop. Noon--48-hour collecting period begins. Throughout afternoon and evening: various educational programs. *June 20*: Diptera BioBlitz collecting continues. Various educational programs, sorting and preliminary identification throughout the day. *June 21*: BioBlitz collecting ends at noon. Reconvene at Baker Hall for lunch, preliminary results, and raffle prizes (it's a free raffle for BioBlitz participants, so be sure to be there!)

Needed. Would you consider leading a walk or giving a talk to the public to help increase the public's knowledge of Diptera (or other invertebrates)? We can fit talks and walks into the schedule any time, any place. Do you have any extra gear you could bring? We most likely will need extra nets, microscopes, GPS units.

Sign-up. If you think you'll be able to attend, please contact the author, so you can be kept up-to-date as we get closer to the Bioblitz. If you are a professional Dipterist, please also contact Dr. Riley Nelson so he can discuss BioBlitz tactics with you. His contact info is:

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Be sure to invite friends and colleagues – we want to make this a great BioBlitz! We have a website to learn more: http://www.nps.gov/grba/naturescience/great-basin-bioblitz.htm This is the fourth BioBlitz that Great Basin National Park is sponsoring, and the other three were successful scientific and educational endeavors. You can read more about the most recent BioBlitz in the park's resource management newsletter, *The Midden*: http://www.nps.gov/grba/parknews/midden.htm.

Following are some photos from the 2011 BioBlitz.

(left) Retired entomologist Ken Kingsley helps a student with a field identification.
(right) Nevada state entomologist Jeff Knight helps sort insects.

(left) Park visitors learned about the world of insects at BioBlitz educational programs.
(right) Graduate students assisted with the 2011 BioBlitz.

And if you are interested in astronomy and have some extra time to spend at the park, the park's Astronomy Festival (http://www.nps.gov/grba/planyourvisit/2012-astronomy-festival.htm) will be held June 14-16, and the community Snake Valley Festival will be held June 15-17.

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Informal annual North American Dipterists Society meeting
Entomological Society of America
Knoxville, Tennessee, November 11-14, 2012

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This year's Entomological Society of America meeting in Knoxville will host a symposium for the North American Dipterists Society. This is a traditional, although unfortunately sporadic as of late, opportunity for Dipterists to share any aspect of the study of flies in a more casual setting, usually on Tuesday evening. NADS is a member symposium this year, as it was in 2010, so, along with a chance to discuss Society business, talks and presenters can be included in the official program. If any Dipterists are attending ESA and would like to give a talk, please send me an email. Successful past presentations have ranged from travelogues to research updates to reviews of various fly clades. If you would like your talk to be listed in the official program, please send me an email with the title and authors by May 11th (Ed. – my bad, too late). Due to the informal nature of this event, I welcome talks after that date, up until the symposium starts, but they may not make it into the program. If you want to show a poster instead, send me an email and we might work it out. Hope to see you there.

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First Announcement of the 2013 Field Meeting of the North American Dipterists Society (tentatively) June 10–13, 2013, in the Southeastern US

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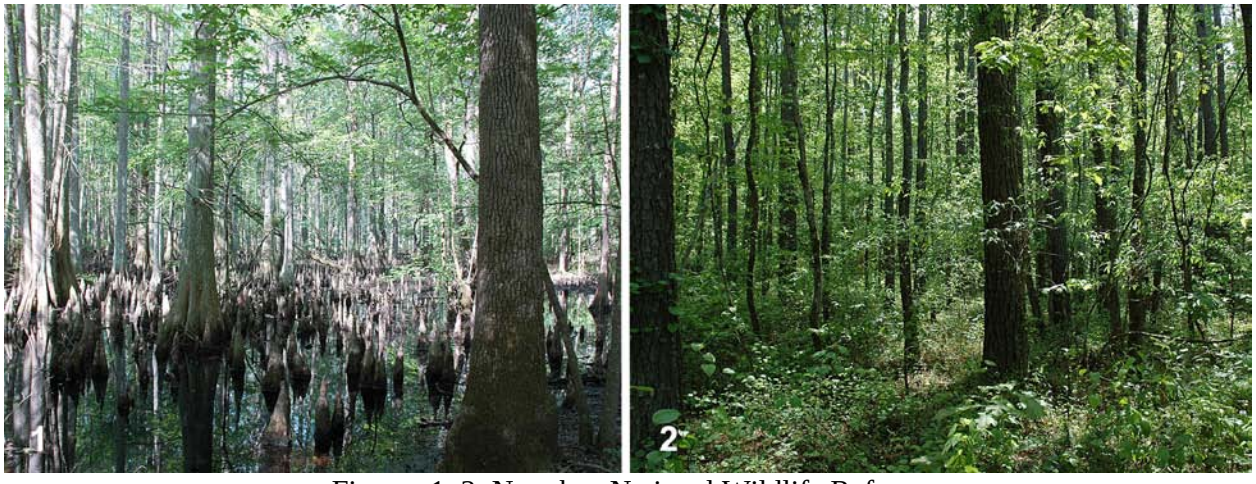
The Mississippi Entomological Museum (MEM) at Mississippi State University, adjacent to Starkville, is pleased to host the 2013 meeting, tentatively scheduled for June 10–13 (Monday–Thursday). We have chosen this time because April-June and September-October have the highest overall insect activity. We are able to provide a laboratory equipped with microscopes and auditorium for presentations. The MEM includes about 70,000 specimens of Diptera, of which about 44,000 are identified to only family or order. Although small in size, the collection includes many high-quality specimens collected during the past 20 years in unique habitats of southeastern U.S. We will be able to provide transportation for field trips and going to restaurants for meals.

Our museum is situated within minutes or hours of several unique habitats of the Southeast that have been poorly sampled for Diptera. We will supply state and federal collecting permits for these habitats, as well as permits for more distant locations in Alabama and coastal Mississippi.

The Noxubee National Wildlife Refuge (33°16'15"N 88°47'04"W), 12 miles south of the MEM, includes reservoirs, streams, and cypress sloughs (Fig. 1) along with bottomland and upland hardwood forests (Fig. 2). Previous surveys of ants and cerambycid beetles have shown that more than half of the state's known fauna of these taxa is present in Noxubee NWR.



Figures 1–2. Noxubee National Wildlife Refuge.
1. Cypress Slough. 2. Upland hardwood forest.

The Tombigbee National Forest (33°13'49"N 88°59'20"W) is 25 miles south of the MEM. The terrain is deeply dissected and has rich mesic forests with spring seeps, small steams, and a gradient of habitats from ridge tops to bottoms of ravines.

The Black Belt Prairie extends in a crescent shape from the Tennessee border across Mississippi and Alabama to Georgia. The Black Belt Prairie has been considered to be a reservoir of the prairie biota during the Wisconsian glaciation. The Osborn Prairie (Fig. 3), which is associated with chalk outcroppings (33°30'41"N 88°44'08"W), is one of the most pristine remnants of the Black Belt and is located eight miles from the MEM. The Osborn prairie, which is state owned, includes many species of plants and insects that have disjunct distributions from the Great Plains as well as four endemic species of moths and beetles, but more research on the Diptera fauna of this prairie is needed. Peak flowerings in the prairie occur during mid-June and mid-September.

Figures 3–4. Prairies and glades.
3. Osborn Prairie during September flowering peak. 4. Bibb County Glade Preserve, Alabama.

A unique habitat, "The Cove," (33°36'47"N 89°24'34"W) is located about 25 miles from the MEM. The Weyerhauser Company has preserved this site because it is a biological island of rare and disjunct species. It's a deep ravine with a small stream bordered by beeches and other plants not in the surrounding sweetgum-pine habitat. Diptera collected at this site include a disjunct species of *Simulium*, a new species of Richardiidae (*Odontomera*), and several species not widely occurring in Mississippi, e.g., *Sphyracephala brevicornis* (Diopsidae), *Rivellia boscii* and *R. pallida* (Platystomatidae), *Calotarsa pallipes* (Platypezidae), and *Pelecocera pergandei* and *Merapioidus villosus* (Syrphidae).

The Bibb County Glade Preserve (Fig. 4) (33°03'28"N 87°02'21"W) in Alabama is within a two-hour drive of the MEM. This dolomite glades is adjacent to the Little Cahaba River and considered a botanical lost world after eight new taxa of plants were described from here in 2001. We have collected several disjunct species of moths at this location, and I suspect there are many interesting Diptera in this habitat.

For those with transportation and additional time for field work, the coastal areas of Mississippi and Alabama offer many different habitats. In Mississippi, pitcher plant bogs and savannahs have a distinctive fauna of flies, and accommodations can be made in dormitories at the Gulf Coast Research Station or the Grand Bay National Estuarine Research Reserve. In Alabama, the Bon Secour National Wildlife Refuge is one of my most favorite collecting locales, with lots of asilids and syrphids visiting flowers in the coastal sand dunes (Fig. 5) and other families associated with the wet swales between dunes (Fig. 6). The refuge has a guest house for researchers. In addition the nearby Weeks Bay National Estuarine Research Reserve has a dormitory for visiting researchers who want to sample marshes, pitcher plant bogs, and forests. These coastal areas are within 5–6 hours of driving time from Starkville.

Figures 5–6. Bon Secour National Wildlife Refuge, Alabama.
5. Coastal sand dunes. 6. Swale between dunes.

Starkville is the typical college town with lots of restaurants, including the usual franchised locally owned ones, but also Peruvian, Middle Eastern, Thai, Japanese, and others, as well as the usual assortment of clubs. Accommodations in hotels range $75–95 a night. The Plymouth Bluff Environmental Education Center (25 miles from Starkville) has cabins at a moderate price. I can obtain reservations of dormitory rooms on the MSU campus for a lower price, but these cannot be made until the spring semester, 2012.

Registration fees for this Field Meeting will be $30 for each participant, $15 for an accompanying person not involved in the meeting. This fee will cover the costs of a BBQ picnic and a rental van. Questions regarding arrangements, collecting locales, and other details for the 2013 Field Meeting can be addressed to the author, Richard Brown. We look forward to your attendance.

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Tephritid meetings in Brisbane, Australia, February 2012

Gary Steck

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Two tephritid specialist meetings were held in Brisbane, Australia during February 2012. The first was an International Atomic Energy Agency-sponsored meeting of a coordinated research group of scientists addressing problems of cryptic species of pest fruit flies. Of particular concern to international commerce are *Bactrocera dorsalis* (oriental fruit fly), *Anastrepha fraterculus* (South American fruit fly), and *Ceratitis* FAR (*fasciventris, anonae, rosa*) species complexes. Forty scientists, including taxonomists, molecular biologists, behaviorists, physiologists, and various other biological specialists from 17 countries presented and discussed findings pertinent to the subject of classification of these groups. Some background and details of the objectives of the research are available at http://www-naweb.iaea.org/nafa/ipc/public/ipc-nl-76.pdf.

International Atomic Energy Agency-sponsored meeting participants.

The second meeting was the 5th International Meeting on Taxonomy and Natural History of Tephritoidea, hosted by Dr. Dick Drew and Meredith Romig of Griffith University. Twenty-one participants attended, including several of those who attended the IAEA meeting. This group meets about once every 4 years. Previous meetings were held in the Great Smoky Mountains, USA (2008), Geneva, Switzerland (2004), Israel (2000), and Xalapa, Mexico (1998). The Brisbane meeting was followed by a short collecting trip to Lamington National Park. The Park is easily accessible from Brisbane and contains large areas of spectacular rain forest. Collecting, however, was not very fruitful. Neither tephritoids nor any other Diptera group were found in any abundance - apparently February is not a very good time of year for collecting.

The collecting group at Cainbable Mountain Lodge, from left to right: Kyung-Eui Ro (South Korea), Xiao-lin Chen (China), Dick Drew (Australia), Ho-Yeon Han (South Korea), Severin Korneyev (kneeling) (Ukraine), Masahiro Sueyoshi (Japan), Gary Steck (USA), Valery Korneyev (Ukraine), and Denis Rodgers (Australia).

DIPTERA ARE AMAZING!

On our recent trip to Vietnam, Martin Hauser and I (*Fly Times* editor Steve Gaimari) collected lots of interesting flies! Here are some of the flies I photographed. Please send me your pictures for *Fly Times* - ideas include favorite taxa or those from a particular trip – as long as they are flies! Thanks very much to Valery Korneyev, Martin Hauser and Owen Lonsdale for many of the identifications!


Gobrya sp. (Gobryidae)


Callistomyia pavonina Bezzi (Tephritidae)


Bactrocera sp. (Tephritidae)


Teratomyzidae


Lonchopteridae


Vidalia sp. (Tephritidae)


Paracelyphus hyacinthus Bigot (Celyphidae)


Pachycerina sp/ (Lauxaniidae)


Graptomyza sp/ (Syrphidae)


Chrysopilus sp. (Rhagionidae)


Campeprosopa longispina (Brunetti) (Stratiomyidae)


Adapsilia sp/ (Pyrgotidae)

BOOKS AND PUBLICATIONS

Zootaxa. As another update from Zootaxa statistics, it is noteworthy that of 23,086 taxa described in Zootaxa to date, 2981 were flies (that's 12.9%!) – second only to beetles (by <100 new taxa). In the section "Most accessed papers" – http://www.mapress.com/zootaxa/collections/mostaccess/index.html – Diptera has again made a good showing! In the time period since the last Fly Times, two papers hit the top 10, one of which was on for three months, as follows:

November 2011
9th – Giłka, W. (2011) Six unusual *Cladotanytarsus* Kieffer: towards a systematics of the genus and resurrection of *Lenziella* Kieffer (Diptera: Chironomidae: Tanytarsini). Zootaxa 3100: 1–34. [open access at: http://www.mapress.com/zootaxa/2011/f/zt03100p034.pdf]

December 2011
2nd - O'Hara, J.E., P. Cerretti, T. Pape and N.L. Evenhuis (2011) Nomenclatural Studies Toward a World List of Diptera Genus-Group Names. Part II: Camillo Rondani. Zootaxa 3141: 1–268. [open access at: http://www.mapress.com/zootaxa/2011/f/zt03141p268.pdf]

January 2012
4th – O'Hara et al. (2011)

February 2012
7th – O'Hara et al. (2011)

In terms of longer term statistics, in Zootaxa's list of their most highly-cited papers according to Science Citation Index Expanded – http://www.mapress.com/zootaxa/collections/citation/index.html, the paper on Diptera reported in the last Fly Times remains in the top 10 list, as follows (cited 63 times):

Sinclair, B.J., and J.M. Cumming (2006) The morphology, higher-level phylogeny and classification of the Empidoidea (Diptera). Zootaxa 1180: 1-172. [open access at http://www.mapress.com/zootaxa/2006f/zt01180p140.pdf (part A) http://www.mapress.com/zootaxa/2006f/zt01180p172.pdf (part B)]

Zookeys. Zookeys has had a flush of Diptera papers since it's inception. Since I haven't highlighted these publications in the past, it seems prudent to provide a list of the papers since the beginning. From this point, new contributions will be included as usual with the regular list of papers. So, in alphabetical order by author:

Alvim, E., R. Ale-Rocha and F. Bravo (2011) *Apoxyria hirtuosa* (Wiedemann, 1821) comb. n., lectotype designation, redescription and identification key to species of *Apoxyria* Schiner, 1866 (Asilidae, Laphriinae). ZooKeys 125: 51--57. [Open access at http://dx.doi.org/10.3897/zookeys.125.1790]

Ang, Y., and R. Meier (2010) Five additions to the list of Sepsidae (Diptera) for Vietnam: *Perochaeta cuirassa* sp. n., *Perochaeta lobo* sp. n., *Sepsis spura* sp. n., *Sepsis sepsi* Ozerov, 2003 and *Sepsis monostigma* Thompson, 1869. ZooKeys 70: 41-56. [Open access at http://dx.doi.org/10.3897/zookeys.70.766]

Blagoderov, V., H. Hippa and A. Nel (2010) *Parisognoriste*, a new genus of Lygistorrhinidae (Diptera: Sciaroidea) from the Oise amber with redescription of *Palaeognoriste* Meunier. ZooKeys 50: 79-90. [Open access at http://dx.doi.org/10.3897/zookeys.50.506]

Brake, I., and M. von Tschirnhaus (2010) *Stomosis arachnophila* sp. n., a new kleptoparasitic species of freeloader flies (Diptera, Milichiidae). ZooKeys 50: 91-96. [Open access at http://dx.doi.org/10.3897/zookeys.50.505]

Contreras-Ramos, A. (2010) Book review. Manual of Central American Diptera, Volume 1. ZooKeys 52: 65-67. [Open access at http://dx.doi.org/10.3897/zookeys.52.541]

Dikow, T. (2010) New species and new records of Mydidae from the Afrotropical and Oriental regions (Insecta, Diptera, Asiloidea). ZooKeys 64: 33-75. [Open access at http://dx.doi.org/10.3897/zookeys.64.464]

Freeman, J. (2011) Tabanidae and other Diptera on Camel's Hump Vermont: Ecological Observations. ZooKeys 147: 559-576. [Open access at http://dx.doi.org/10.3897/zookeys.147.1989]

Gang, Y., D. Yang and N. Evenhuis (2011) Two new species of *Tovlinius* Zaitzev, from China, with a key to the genera of Bombyliinae from China and a second key to the world species (Diptera, Bombyliidae, Bombyliinae, Bombyliini). ZooKeys 153: 73-80. [Open access at http://dx.doi.org/10.3897/zookeys.153.2031]

Gillung, J., and S. Winterton (2011) New genera of philopotine spider flies (Diptera, Acroceridae) with a key to living and fossil genera. ZooKeys 127: 15-27. [Open access at http://dx.doi.org/10.3897/zookeys.127.1824]

Grimaldi, D., A. Arillo, J. Cumming and M. Hauser (2011) Brachyceran Diptera (Insecta) in Cretaceous ambers, part IV: Significant New Orthorrhaphous Taxa. ZooKeys 148: 293-332. [Open access at http://dx.doi.org/10.3897/zookeys.148.1809]

Kerr, P. (2011) Six new species of *Acomoptera* from North America (Diptera, Mycetophilidae). ZooKeys 137: 41-76. [Open access at http://dx.doi.org/10.3897/zookeys.137.1764]

Krcmar, S. (2011) Preliminary list of horse flies (Diptera, Tabanidae) of Serbia. ZooKeys 117: 73-81. [Open access at http://dx.doi.org/10.3897/zookeys.117.1328]

Krzeminski, W., and J. Prokop (2011) *Ptychoptera deleta* Novák, 1877 from the Early Miocene of the Czech Republic: redescription of the first fossil attributed to Ptychopteridae (Diptera). ZooKeys 130: 299-305. [Open access at http://dx.doi.org/10.3897/zookeys.130.1401]

Kurina, O., K. Hedmark, M. Karström and J. Kjaerandsen (2011) Review of the European *Greenomyia* Brunetti (Diptera, Mycetophilidae) with new descriptions of females. ZooKeys 77: 31-50. [Open access at http://dx.doi.org/10.3897/zookeys.77.936]

Kurina, O., E. Õunap and G. Ramel (2011) *Baeopterogyna mihalyii* Matile (Diptera, Mycetophilidae): association of sexes using morphological and molecular approaches with the first description of females. ZooKeys 114: 15-27. [Open access at http://dx.doi.org/10.3897/zookeys.114.1364]

Lambkin, C., and J. Bartlett (2011) Bush Blitz aids description of three new species and a new genus of Australian beeflies (Diptera, Bombyliidae, Exoprosopini). ZooKeys 150: 231-280. [Open access at http://dx.doi.org/10.3897/zookeys.150.1881]

Liu, X., D. Yang and E. Nartshuk (2011) Species of the genus *Thressa* Walker, 1860 from China (Diptera, Chloropidae). ZooKeys 129: 29-48. [Open access at http://dx.doi.org/10.3897/zookeys.129.1144]

Lukashevich, E. and A. Przhiboro (2011) New Chironomidae (Diptera) with elongate proboscises from the Late Jurassic of Mongolia. ZooKeys 130: 307-322. [Open access at http://dx.doi.org/10.3897/zookeys.130.1555]

Lyons, K., and T. Dikow (2010) Taxonomic revision of *Ectyphus* Gerstaecker, 1868 and *Parectyphus* Hesse, 1972 with a key to world Ectyphinae (Insecta, Diptera, Mydidae). ZooKeys 73: 25-59. [Open access at http://dx.doi.org/10.3897/zookeys.73.840]

Martinsson, S., and J. Kjaerandsen (2012) *Katatopygia* gen. n., a monophyletic branch segregated from *Boletina* (Diptera, Mycetophilidae). ZooKeys 175: 37-67. [Open access at http://dx.doi.org/10.3897/zookeys.175.2388]

Mathis, W., and L. Marinoni (2012) A conspectus on the Canacidae (Diptera) of Brazil. ZooKeys 162: 59-92. [Open access at http://dx.doi.org/10.3897/zookeys.162.2370]

Mathis, W., and M. Sueyoshi (2011) New species of the genus *Cyamops* Melander from New Zealand (Diptera, Periscelididae, Stenomicrinae). ZooKeys 114: 28-40. [Open access at http://dx.doi.org/10.3897/zookeys.114.1310]

Mathis, W., and T. Zatwarnicki (2012) Revision of New World species of the shore-fly subgenus *Allotrichoma* Becker of the genus *Allotrichoma* with description of the subgenus *Neotrichoma* (Diptera, Ephydridae, Hecamedini). ZooKeys 161: 1-101. [Open access at http://dx.doi.org/10.3897/zookeys.161.2016]

Mengual, X., and K. Ghorpadé (2010) The flower fly genus *Eosphaerophoria* Frey (Diptera, Syrphidae). ZooKeys 33: 39-80. [Open access at http://dx.doi.org/10.3897/zookeys.33.298]

Mengual, X. (2011) Black-tie dress code: two new species of the genus *Toxomerus* (Diptera, Syrphidae). ZooKeys 140: 1-26. [Open access at http://dx.doi.org/10.3897/zookeys.140.1930]

Mohamadzade Namin, S., and J. Nozari (2011) A new species of *Urophora* Robineau-Desvoidiy, 1830 (Diptera, Tephritidae) from Iran. ZooKeys 152: 63-70. [Open access at http://dx.doi.org/10.3897/zookeys.152.1911.

Nihei, S., and R. Pavarini (2011) Taxonomic redescription and biological notes on *Diaugia angusta* (Diptera, Tachinidae): parasitoid of the palm boring weevils *Metamasius ensirostris* and *M. hemipterus* (Coleoptera, Dryophthoridae). ZooKeys 84: 23-38. [Open access at http://dx.doi.org/10.3897/zookeys.84.756]

Nihei, S., and R. Toma (2010) Taxonomic notes on *Borgmeiermyia* Townsend (Diptera, Tachinidae) with the first host record for the genus. ZooKeys 42: 101-110. [Open access at http://dx.doi.org/10.3897/zookeys.42.190]

Salmela, J. (2012) Revision of *Tipula* (*Yamatotipula*) *stackelbergi* Alexander (Diptera, Tipulidae), and a short discussion on subspecies among crane flies. ZooKeys 162: 43-58. [Open access at http://dx.doi.org/10.3897/zookeys.162.2216]

Takaoka, H., and W. Srisuka (2011) A new species of *Simulium* (*Nevermannia*) (Diptera: Simuliidae) from Chiang Mai, Thailand. ZooKeys 89: 57-70. [Open access at http://dx.doi.org/10.3897/zookeys.89.761]

Takaoka, H., M. Sofian-Azirun, R. Hashim and Z. Ya'cob (2011) Two new species of *Simulium* (*Gomphostilbia*) (Diptera: Simuliidae) from Peninsular Malaysia, with keys to Peninsular Malaysian members of the *ceylonicum* species-group. ZooKeys 118: 53-74. [Open access at http://dx.doi.org/10.3897/zookeys.118.1552]

Vikhrev, N. (2008) New data on distribution and biology of the invasive species *Hydrotaea aenescens* (Wiedemann, 1830) (Diptera, Muscidae). ZooKeys 4: 47-53. [Open access at http://dx.doi.org/10.3897/zookeys.4.27]

Vikhrev, N. (2009) A new species of *Coenosia* Meigen (Diptera, Muscidae) from Kunashir Island. ZooKeys 8: 35-38. [Open access at http://dx.doi.org/10.3897/zookeys.8.68]

Vikhrev, N. (2010) Revision of the key characters for the *Thricops nigrifrons* species-group (Diptera, Muscidae). ZooKeys 71: 15-22. [Open access at http://dx.doi.org/10.3897/zookeys.71.788]

Vikhrev, N. (2011) Review of the Palaearctic members of the *Lispe tentaculata* species-group (Diptera, Muscidae): revised key, synonymy and notes on ecology. ZooKeys 84: 59-70. [Open access at http://dx.doi.org/10.3897/zookeys.84.819]

Vilkamaa, P., H. Hippa and S. Taylor (2011) The genus *Camptochaeta* in Nearctic caves, with the description of *C. prolixa* sp. n. (Diptera, Sciaridae). ZooKeys 135: 69-75. [Open access at http://dx.doi.org/10.3897/zookeys.135.1624]

Wang, M.-f., K. Li and D. Zhang (2011) Taxonomic review of the *postica*-group of *Fannia* Robineau-Desvoidy (Diptera, Fanniidae) from China, with the description of one new species. ZooKeys 112: 1-19. [Open access at http://dx.doi.org/10.3897/zookeys.112.947]

Winterton, S., and S. Gaimari (2011) Revision of the South American window fly genus *Heteromphrale* Kröber, 1937 (Diptera, Scenopinidae). ZooKeys 84: 39-57. [Open access at http://dx.doi.org/10.3897/zookeys.84.774]

Winterton, S., and B. Gharali (2011) *Iranotrichia* gen. n., a new genus of Scenopinidae (Diptera) from Iran, with a key to window fly genera of the world. ZooKeys 138: 75-92. [Open access at http://dx.doi.org/10.3897/zookeys.138.1821]

Winterton, S., and J. Gillung (2012) A new species of spider fly in the genus *Sabroskya* Schlinger from Malawi, with a key to Acrocerinae world genera (Diptera, Acroceridae). ZooKeys 171: 1-15. [Open access at http://dx.doi.org/10.3897/zookeys.171.2137]

Winterton, S. (2011) New species of *Prepseudatrichia* Kelsey, 1969 from Thailand (Diptera, Scenopinidae). ZooKeys 122: 39-44. [Open access at http://dx.doi.org/10.3897/zookeys.122.1598]

Winterton, S. (2011) Review of the stiletto fly genus *Actenomeros* Winterton & Irwin (Diptera, Therevidae, Agapophytinae). ZooKeys 120: 55-63. [Open access at http://dx.doi.org/10.3897/zookeys.120.1615]

Winterton, S. (2011) Revision of the stiletto fly genera *Acupalpa* Kröber and *Pipinnipons* Winterton (Diptera, Therevidae, Agapophytinae) using cybertaxonomic methods, with a key to Australasian genera. ZooKeys 95: 29-79. [Open access at http://dx.doi.org/10.3897/zookeys.95.1461]

Winterton, S. (2012) Review of Australasian spider flies (Diptera, Acroceridae) with a revision of *Panops* Lamarck. ZooKeys 172: 7-75. [Open access at http://dx.doi.org/10.3897/zookeys.172.1889 .

Yang, D., and Y. Zhu (2011) *Sinosciapus* from Taiwan with description of a new species (Diptera, Dolichopodidae). ZooKeys 159: 11-18. [Open access at http://dx.doi.org/10.3897/zookeys.159.2252]

Yassin, A., and J. David (2010) Revision of the Afrotropical species of *Zaprionus* (Diptera, Drosophilidae), with descriptions of two new species and notes on the internal reproductive structures and immature stages. ZooKeys 51: 33-72. [Open access at http://dx.doi.org/10.3897/zookeys.51.380]

Zhang, S.-J., J. Huang, H. Wu and Y.-P. Wang. (2010) The genus *Keilbachia* Mohrig from mainland China, with descriptions of two new species (Diptera, Sciaridae). ZooKeys 52: 47-56. [Open access at http://dx.doi.org/10.3897/zookeys.52.362]

Note from the editor: I usually accumulate the various citations to list here by scanning through the Zoological Record – since they are often 1 or 2 months behind, I surely missed some recent papers, but I want to thank Chris Borkent for giving me a compilation of papers from Web of Science – maybe that is more up to date! By inclusion, I am not attesting to quality (of course I haven't read all of them)! In any case, I am bound to miss some of the things you might want to see, so by all means, please send me citations for papers (your own or those of others) that you would like to see here. I am happy to include

them! As a generality, I try to keep the focus either broad-based (e.g., large treatises) or of general interest. Of course there are many many more Diptera papers if you include developmental biology in *Drosophila*, issues surrounding malaria and other diseases and mosquitoes, and numerous other topics. Also, you authors out there - please don't be offended if I missed diacritics in your names! Zootaxa has them correctly, but Zoological Record removes them!

Adler, P.H. and Y.T. Huang (2011). Integrated systematics of the Simuliidae (Diptera): evolutionary relationships of the little-known Palearctic black fly *Simulium acrotrichum*. Canadian Entomologist 143(6): 612-628.

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